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1.5 jcl-1-2-implemented-over-slf4j 1.7.25

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1.7 json-java 20160212

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1.9 jetty-java-based-http-1-x-http-2-servlet- websocket-server 9.3.11.20160721

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Manifest-Version: 1.0
Archiver-Version: Plexus Archiver
Created-By: Apache Maven Bundle Plugin
Built-By: joakim
Build-Jdk: 1.8.0_74
Implementation-Vendor: Eclipse.org - Jetty
Implementation-Version: 9.3.11.v20160721
url: <http://www.eclipse.org/jetty>
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Bundle-ManifestVersion: 2
Bundle-Name: Jetty :: Http Utility
Bundle-RequiredExecutionEnvironment: JavaSE-1.8
Bundle-SymbolicName: org.eclipse.jetty.http
Bundle-Vendor: Eclipse Jetty Project
Bundle-Version: 9.3.11.v20160721
Export-Package: org.eclipse.jetty.http;version="9.3.11";uses:="org.ecl

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Import-Package: org.eclipse.jetty.util;version="[9.3.11,9.3.12)",org.e
clipse.jetty.util.annotation;version="[9.3.11,9.3.12)",org.eclipse.je
tty.util.component;version="[9.3.11,9.3.12)",org.eclipse.jetty.util.l
og;version="[9.3.11,9.3.12)",org.eclipse.jetty.util.resource;version=
"[9.3.11,9.3.12)"
Originally-Created-By: Apache Maven Bundle Plugin
Require-Capability: osgi.ee;filter="(&(osgi.ee=JavaSE)(version=1.8))"
Tool: Bnd-2.4.1.201501161923

Found in path(s):

* /opt/cola/permits/1204005458_1684945272.7510452/0/jetty-http-9-3-11-v20160721-jar/META-
INF/MANIFEST.MF

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* /opt/cola/permits/1204005458_1684945272.7510452/0/jetty-http-9-3-11-v20160721-jar/about.html

1.10 apache-velocity 2.0

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1.11 ci-sauce 1.140

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1.14 sbm-framework0256 1.0.0

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- * /opt/cola/permits/1685982415_1684869182.9480639/0/phantomjsdriver-1-3-0-sources-jar/org/openqa/selenium/phantomjs/PhantomJSDriver.java
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1.17 testng 6.8.8

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1.18 jzlib 1.1.3

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* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/ZStreamException.java

* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/InfTree.java

* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/Tree.java

* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-

jar/com/jcraft/jzlib/InfCodes.java

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* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/ZStream.java

* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/Adler32.java

* /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/Deflate.java

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- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/GZIPHeader.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/CRC32.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/InfBlocks.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/ZOutputStream.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/InflaterInputStream.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/Inflater.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/Deflater.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/GZIPException.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/GZIPOutputStream.java
- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/GZIPInputStream.java
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- * /opt/ws_local/PERMITS_SQL/1012082052_1591372884.94/0/jzlib-1-1-3-sources-jar/com/jcraft/jzlib/Checksum.java

1.19 pegdown 1.6.0

1.19.1 Available under license :

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1.20 httpcomponents-core 4.4.6

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1.21 plexus-archiver 3.6.0

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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/war/WarArchiver.java

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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/UnixStat.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/manager/DefaultArchiverManager.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/manager/NoSuchArchiverException.java
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jar/org/codehaus/plexus/archiver/tar/XZTarFile.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/xz/XZUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/tar/PlexusIoTarXZFileResourceCollection.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/xz/PlexusIoXZResourceCollection.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/xz/XZCompressor.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/tar/TarXZUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-

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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-

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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-

jar/org/codehaus/plexus/archiver/jar/JarToolModularJarArchiver.java

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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/zip/ZipSymlinkResource.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
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jar/org/codehaus/plexus/archiver/exceptions/EmptyArchiveException.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
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jar/org/codehaus/plexus/archiver/tar/TarSnappyUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/jar/Manifest.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/bzip2/BZip2Compressor.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/jar/ManifestConstants.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/gzip/GZipUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/snappy/SnappyArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/util/Compressor.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/tar/TarUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/AbstractArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/zip/AbstractZipArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/zip/ZipUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/gzip/GZipCompressor.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/zip/AbstractZipUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/UnArchiver.java
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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/jar/JdkManifestFactory.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/tar/TarBZip2UnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/bzip2/BZip2UnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/tar/TarArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/jar/ManifestException.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/zip/ZipArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/Archiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/tar/TarGZipUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/AbstractUnArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/snappy/SnappyCompressor.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/ArchiveEntry.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/jar/JarArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/gzip/GZipArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/bzip2/BZip2Archiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/snappy/SnappyUnArchiver.java
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jar/org/codehaus/plexus/archiver/diags/DryRunArchiver.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/util/FilePermissionUtils.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
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jar/org/codehaus/plexus/archiver/util/Streams.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/resources/PlexusIoVirtualFileResource.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/resources/PlexusIoVirtualSymlinkResource.java
* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-
jar/org/codehaus/plexus/archiver/util/ArchiveEntryUtils.java
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jar/org/codehaus/plexus/archiver/util/AbstractFileSet.java
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* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/zip/ConcurrentJarCreator.java

* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/zip/DeferredScatterOutputStream.java

* /opt/cola/permits/1685982379_1684868943.396582/0/plexus-archiver-3-6-0-sources-jar/org/codehaus/plexus/archiver/zip/OffloadingOutputStream.java

1.22 org.seleniumhq.selenium:selenium-http 4.0.0-alpha-5

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* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/HttpMessage.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/HttpClient.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/Message.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/WebSocket.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/FormEncodedData.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/Routable.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/HttpMethod.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/ConnectionFailedException.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/RemoteCall.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/AddSeleniumUserAgent.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/HttpRequest.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/Route.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/UrlTemplate.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/UriPath.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/TextMessage.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/HttpResponse.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/Contents.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/BinaryMessage.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/remote/http/CloseMessage.java
```

* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-jar/org/openqa/selenium/remote/http/ClientConfig.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-jar/org/openqa/selenium/remote/http/HttpHandler.java
* /opt/cola/permits/1685982285_1684946823.939543/0/selenium-http-4-0-0-alpha-5-sources-jar/org/openqa/selenium/remote/http/Filter.java

1.23 scala-pool 0.3.0

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1.24 saucerest 1.0.39

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Found in path(s):

* /opt/cola/permits/1685982499_1684869282.4731739/0/saucerest-1-0-39-sources-jar/META-INF/maven/com.saucelabs/saucerest/pom.xml

1.25 asm 5.0.3

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1.26 apache-commons-exec 1.3

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1.27 xbean-reflect 3.4

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1.28 google-gson 2.8.0

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* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/UnsafeAllocator.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/bind/TimeTypeAdapter.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/LazilyParsedNumber.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/bind/SqlDateTypeAdapter.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/bind/DateTypeAdapter.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/ConstructorConstructor.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/bind/TreeTypeAdapter.java
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- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonIOException.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonParseException.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/FieldNamingStrategy.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/annotations/Since.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/DefaultDateTypeAdapter.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonSerializationContext.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/annotations/SerializedName.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/Excluder.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonDeserializer.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonDeserializationContext.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonObject.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/\$Gson\$Preconditions.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/Primitives.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/ObjectConstructor.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/InstanceCreator.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/GsonBuilder.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/Gson.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/ExclusionStrategy.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonPrimitive.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonNull.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/reflect/TypeToken.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonArray.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/annotations/Until.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/FieldNamingPolicy.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonElement.java
- * /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-

jar/com/google/gson/annotations/Expose.java

* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonSerializer.java

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jar/com/google/gson/LongSerializationPolicy.java

* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonStreamParser.java

* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/FieldAttributes.java

* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/JsonParser.java

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jar/com/google/gson/JsonSyntaxException.java

* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/Streams.java

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* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-
jar/com/google/gson/internal/LinkedTreeMap.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-
jar/com/google/gson/internal/LinkedHashMap.java
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* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-
jar/com/google/gson/annotations/JsonAdapter.java
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-
jar/com/google/gson/internal/bind/JsonAdapterAnnotationTypeAdapterFactory.java
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* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/JsonTreeWriter.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/ReflectiveTypeAdapterFactory.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/JsonReaderInternalAccess.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/JsonTreeReader.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/TypeAdapterRuntimeTypeWrapper.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/ObjectTypeAdapter.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/TypeAdapters.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/CollectionTypeAdapterFactory.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/TypeAdapter.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/TypeAdapterFactory.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/ArrayTypeAdapter.java  
* /opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-  
jar/com/google/gson/internal/bind/MapTypeAdapterFactory.java  
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*/opt/cola/permits/1051803203_1649200902.43/0/gson-2-8-0-sources-jar/com/google/gson/internal/\$Gson\$Types.java

1.29 junit 4.11

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1.35 jetty-orbit-servlet-api

3.0.0.v201112011016

1.35.1 Available under license :

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jar/javax/servlet/ServletContainerInitializer.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/http/class-use/HttpSessionActivationListener.html
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/ServletConfig.html
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/http/class-use/HttpSessionListener.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/descriptor/JspConfigDescriptor.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/RequestDispatcher.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/MultipartConfigElement.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/SessionTrackingMode.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/annotation/class-use/ServletSecurity.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/AsyncEvent.html
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/ServletSecurityElement.html
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* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/ServletRequestAttributeListener.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/http/class-use/HttpSessionBindingListener.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/overview-summary.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/ServletRequest.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/ServletInputStream.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/descriptor/class-use/TaglibDescriptor.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/ServletOutputStream.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/Servlet.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/MultipartConfigElement.html

* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/package-summary.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/ServletContextEvent.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/descriptor/JspPropertyGroupDescriptor.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/annotation/class-use/WebListener.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/FilterChain.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/ServletContext.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/annotation/class-use/MultipartConfig.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/descriptor/class-use/JspPropertyGroupDescriptor.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/annotation/ServletSecurity.EmptyRoleSemantic.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/http/HttpServletRequestWrapper.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/ServletRequestAttributeEvent.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/deprecated-list.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/class-use/DispatcherType.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/http/Part.html
* /opt/cola/permits/1018976702_1609888498.14/0/javax-servlet-3-0-0-v201112011016-javadoc-jar/javax/servlet/annotation/HandlesTypes.html

1.36 apache-commons-i-o 2.5

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1.37 scala 2.11.11

1.37.1 Available under license :

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```
/**
 * Latch used to implement waiting on a DefaultPromise's result.
 *
 * Inspired by: http://gee.cs.oswego.edu/cgi-bin/viewcvs.cgi/jsr166/src/main/java/util/concurrent/locks/AbstractQueuedSynchronizer.java
 * Written by Doug Lea with assistance from members of JCP JSR-166
 * Expert Group and released to the public domain, as explained at
 * http://creativecommons.org/publicdomain/zero/1.0/
 */
```

Found in path(s):

```
* /opt/cola/permits/1011581111_1611240383.69/0/scala-library-2-11-11-sources-jar/scala/concurrent/impl/Promise.scala
```

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```
/**
 *
 * A `ClassTag[T]` stores the erased class of a given type `T`, accessible via the `runtimeClass`
 * field. This is particularly useful for instantiating `Array`s whose element types are unknown
 * at compile time.
 *
 * `ClassTag`s are a weaker special case of [[scala.reflect.api.TypeTags#TypeTag]]s, in that they
 * wrap only the runtime class of a given type, whereas a `TypeTag` contains all static type
 * information. That is, `ClassTag`s are constructed from knowing only the top-level class of a
 * type, without necessarily knowing all of its argument types. This runtime information is enough
 * for runtime `Array` creation.
 *
 * For example:
 * {{{
 * scala> def mkArray[T : ClassTag](elems: T*) = Array[T](elems: _*)
 * mkArray: [T](elems: T*)(implicit evidence$1: scala.reflect.ClassTag[T])Array[T]
 *
 * scala> mkArray(42, 13)
 * res0: Array[Int] = Array(42, 13)
 *
 * scala> mkArray("Japan","Brazil","Germany")
 * res1: Array[String] = Array(Japan, Brazil, Germany)
 * }}}
 */
```

* See `[[scala.reflect.api.TypeTags]]` for more examples, or the
* `[[http://docs.scala-lang.org/overviews/reflection/typetags-manifests.html Reflection Guide: TypeTags]]`
* for more details.
*
*/

Found in path(s):

* `/opt/cola/permits/1011581111_1611240383.69/0/scala-library-2-11-11-sources-jar/scala/reflect/ClassTag.scala`

1.38 asm-util 5.0.3

1.39 jackson-core 2.3.3

1.39.1 Available under license :

Jackson JSON processor

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Credits

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1.40 sac 1.3

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```
<?xml version="1.0" encoding="iso-8859-1"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<title>W3C IPR SOFTWARE NOTICE</title>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
<style type='text/css'>
  body { background: white; color: black; }
</style>
</head>

<body>
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</html>

1.41 cglib 3.2.4

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* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/SAXClassAdapter.java

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/SAXModuleAdapter.java

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/ASMContentHandler.java

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/SAXFieldAdapter.java

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/SAXAnnotationAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/Processor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/xml/SAXCodeAdapter.java

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*/
/**
 * Creates a new JSRInliner. <i>Subclasses must not use this
 * constructor</i>. Instead, they must use the
 * {@link #JSRInlinerAdapter(int, MethodVisitor, int, String, String, String, String[])}
 * version.
 *
 * @param mv
 *     the <code>MethodVisitor</code> to send the resulting inlined
 *     method code to (use <code>null</code> for none).
 * @param access
 *     the method's access flags (see {@link Opcodes}). This
 *     parameter also indicates if the method is synthetic and/or
 *     deprecated.
 * @param name
 *     the method's name.
 * @param desc
 *     the method's descriptor (see {@link Type}).
 * @param signature
 *     the method's signature. May be <tt>null</tt>.
 * @param exceptions
 *     the internal names of the method's exception classes (see
 *     {@link Type#getInternalName() getInternalName}). May be
 *     <tt>null</tt>.
 * @throws IllegalStateException
 *     If a subclass calls this constructor.
 */

```

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* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/JSRInlinerAdapter.java

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* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/TypeReference.java

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*/
/**
 * Creates a new {@link GeneratorAdapter}. Subclasses must not use this
 * constructor. Instead, they must use the
 * {@link #GeneratorAdapter(int, MethodVisitor, int, String, String)}
 * version.
 *
 * @param mv
 *     the method visitor to which this adapter delegates calls.
 * @param access
 *     the method's access flags (see {@link Opcodes}).
 * @param name
 *     the method's name.
 * @param desc
 *     the method's descriptor (see {@link Type Type}).
 * @throws IllegalStateException
 *     If a subclass calls this constructor.
 */

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* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/package.html
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/package.html
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/analysis/package.html
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/package.html
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jar/net/bytebuddy/jar/asm/signature/package.html

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- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/FieldVisitor.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/InnerClassNode.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/TraceFieldVisitor.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/CurrentFrame.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/signature/SignatureVisitor.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/TryCatchBlockNode.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/ClassVisitor.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/CheckAnnotationAdapter.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/ASMifier.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/SimpleVerifier.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/Interpreter.java
- * /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-

jar/net/bytebuddy/jar/asm/ModuleVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/AnnotationRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/InvokeDynamicInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/CheckModuleAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Label.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/ModuleRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tools/Retrofitter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/Remapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/Frame.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/MethodWriter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/MethodNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Opcodes.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/ModuleRequireNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/TypeInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/LocalVariableNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/SmallSet.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/ModuleOpenNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/JumpInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/TraceSignatureVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/CheckFieldAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/BasicVerifier.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Handler.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/FieldInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/ModuleResolutionAttribute.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/MethodInsnNode.java

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/TraceModuleVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/MultiANewArrayInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/LocalVariablesSorter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/CheckClassAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/ParameterNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/MethodRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/TraceAnnotationVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/LineNumberNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/ModuleTargetAttribute.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/RemappingClassAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/Subroutine.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/ClassWriter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/FieldRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/SignatureRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/AnalyzerException.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/TryCatchBlockSorter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/analysis/SourceValue.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/ClassReader.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/InstructionAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/signature/SignatureReader.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/RemappingAnnotationAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/signature/SignatureWriter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/CheckMethodAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/FieldNode.java

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/RemappingSignatureAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Item.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/SerialVersionUIDAdder.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/TraceMethodVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/ModuleNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Context.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/TableSwitchGenerator.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/FieldWriter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Attribute.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/AnnotationNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/Method.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/RemappingMethodAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tools/ModuleInfoBndPlugin.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/ModuleProvideNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/InsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/commons/ClassRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/ModuleExportNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/Printer.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/InsnList.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/LdcInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/TypeAnnotationNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/TableSwitchInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/VarInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Type.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Edge.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-

jar/net/bytebuddy/jar/asm/commons/ModuleHashesAttribute.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/IincInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/FrameNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/analysis/Analyzer.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/AnnotationWriter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/analysis/BasicValue.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/ByteVector.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/LookupSwitchInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/analysis/BasicInterpreter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/CodeSizeEvaluator.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/util/CheckSignatureAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/analysis/SourceInterpreter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/util/TraceClassVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/AdviceAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/AnnotationVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/AbstractInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/Handle.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/SimpleRemapper.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/Frame.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/MethodVisitor.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/IntInsnNode.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/StaticInitMerger.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/analysis/Value.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/RemappingFieldAdapter.java
* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/ModuleWriter.java

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*/

/**

* Creates a new { @link AnalyzerAdapter}. *Subclasses must not use this
* constructor*. Instead, they must use the
* { @link #AnalyzerAdapter(int, String, int, String, String, MethodVisitor)}
* version.
*
* @param owner
* the owner's class name.
* @param access
* the method's access flags (see { @link Opcodes}).
* @param name
* the method's name.
* @param desc
* the method's descriptor (see { @link Type Type}).
* @param mv
* the method visitor to which this adapter delegates calls. May
* be `null`.

```
* @throws IllegalStateException
*     If a subclass calls this constructor.
*/
```

Found in path(s):

```
*/opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/commons/AnalyzerAdapter.java
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```
*/opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/xml/package.html
```

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* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
*/
/**
 * Constructs a new {@link LocalVariableAnnotationNode}. <i>Subclasses must
 * not use this constructor</i>. Instead, they must use the
 * {@link #LocalVariableAnnotationNode(int, TypePath, LabelNode[], LabelNode[], int[], String)}
 * version.
 *
 * @param typeRef
 * a reference to the annotated type. See {@link TypeReference}.
 * @param typePath
 * the path to the annotated type argument, wildcard bound, array
 * element type, or static inner type within 'typeRef'. May be
 * <tt>null</tt> if the annotation targets 'typeRef' as a whole.
 * @param start
 * the first instructions corresponding to the continuous ranges
 * that make the scope of this local variable (inclusive).
 * @param end
 * the last instructions corresponding to the continuous ranges
 * that make the scope of this local variable (exclusive). This
 * array must have the same size as the 'start' array.
 * @param index
 * the local variable's index in each range. This array must have
 * the same size as the 'start' array.
 * @param desc
 * the class descriptor of the annotation class.
 */

```

Found in path(s):

\* /opt/cola/permits/1143010021\_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/tree/LocalVariableAnnotationNode.java

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\* /opt/cola/permits/1143010021\_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/Textifiable.java

\* /opt/cola/permits/1143010021\_1615506896.9/0/byte-buddy-1-7-9-sources-1-jar/net/bytebuddy/jar/asm/util/ASMifiable.java

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* CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
* ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF
* THE POSSIBILITY OF SUCH DAMAGE.
*/
/**
 * Constructs a new {@link ClassNode}. Subclasses must not use this
 * constructor. Instead, they must use the {@link #ClassNode(int)}
 * version.
 *
 * @throws IllegalStateException
 * If a subclass calls this constructor.
 */

```

Found in path(s):

```

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/tree/ClassNode.java

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*/
/**
 * Constructs a new {@link Textifier}. <i>Subclasses must not use this
 * constructor</i>. Instead, they must use the {@link #Textifier(int)}
 * version.
 *
 * @throws IllegalStateException
 * If a subclass calls this constructor.
 */

```

Found in path(s):

```

* /opt/cola/permits/1143010021_1615506896.9/0/byte-buddy-1-7-9-sources-1-
jar/net/bytebuddy/jar/asm/util/Textifier.java

```

## 1.43 selenium 3.5.3

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```

* /opt/cola/permits/1240571657_1684950992.59308/0/selenium-api-3-5-3-sources-
jar/org/openqa/selenium/interactions/Pause.java
* /opt/cola/permits/1240571657_1684950992.59308/0/selenium-api-3-5-3-sources-
jar/org/openqa/selenium/Platform.java

```

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/SourceType.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Encodable.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NoSuchCookieException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/SocketLock.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/LocalStorage.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/BuildInfo.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ScriptTimeoutException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Keys.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Rotatable.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ScreenOrientation.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/SessionStorage.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/Location.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/InvalidCoordinatesException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/MoveTargetOutOfBoundsException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsByLinkText.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsByName.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/SearchContext.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Mouse.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/logging/Logs.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/WebDriverException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Interactive.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/StaleElementReferenceException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/ElementScrollBehavior.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ElementNotVisibleException.java



\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ElementNotInteractableException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/WebStorage.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/HasCapabilities.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NotFoundException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/security/Credentials.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsByTagName.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/TakesScreenshot.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NoSuchFrameException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/ApplicationCache.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/TouchScreen.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/HasIdentity.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsByCssSelector.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/HasTouchScreen.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ImeNotAvailableException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/JavascriptException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsByClassName.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NoSuchElementException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/UnableToSetCookieException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/InvalidArgumentException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/UnsupportedCommandException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/UnhandledAlertException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/Locatable.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/PageLoadStrategy.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Alert.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/LocationContext.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ImmutableCapabilities.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Action.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ContextAware.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Architecture.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/UnexpectedAlertBehaviour.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/html5/AppCacheStatus.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Rectangle.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/MutableCapabilities.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NoAlertPresentException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/InvalidElementStateException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Keyboard.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Cookie.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/mobile/NetworkConnection.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/security/UserAndPassword.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/OutputType.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/TimeoutException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/logging/LoggingPreferences.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Interaction.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Capabilities.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/DeviceRotation.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ImeActivationFailedException.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/Sequence.java  
\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NoSuchSessionException.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/internal/Coordinates.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/logging/LogEntry.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/HasInputDevices.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/WebDriver.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/SessionNotCreatedException.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Dimension.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/WrapsDriver.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/logging/LogEntries.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/InvalidSelectorException.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Proxy.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/By.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/Killable.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/ElementNotSelectableException.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsById.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/JavascriptExecutor.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/interactions/InputSource.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/Lock.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/WebElement.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/InvalidCookieDomainException.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/WrapsElement.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/internal/FindsByXPath.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Beta.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/Point.java

\* /opt/cola/permits/1240571657\_1684950992.59308/0/selenium-api-3-5-3-sources-jar/org/openqa/selenium/NoSuchWindowException.java

# 1.44 json-java 20171018

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# 1.45 default-plexus-container 1.7.1

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/manager/SingletonComponentManager.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/discovery/PlexusXmlComponentDiscoverer.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/LogDisablePhase.java

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jar/org/codehaus/plexus/component/configurator/ConfigurationListener.java  
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jar/org/codehaus/plexus/component/manager/AbstractComponentManager.java

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jar/org/codehaus/plexus/component/configurator/expression/ExpressionEvaluator.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/repository/ComponentRequirement.java
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jar/org/codehaus/plexus/logging/AbstractLoggerManager.java
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jar/org/codehaus/plexus/component/composition/CycleDetectedInComponentGraphException.java
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jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/AutoConfigurePhase.java
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jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/PlexusContainerLocator.java
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* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
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jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/Serviceable.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
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jar/org/codehaus/plexus/lifecycle/phase/Phase.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-  
jar/org/codehaus/plexus/component/repository/exception/ComponentLifecycleException.java  
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jar/org/codehaus/plexus/context/Context.java  
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jar/org/codehaus/plexus/DuplicateChildContainerException.java  
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jar/org/codehaus/plexus/component/repository/exception/ComponentManagerImplementationNotFoundException.java  
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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/container/initialization/InitializeComponentDiscovererManagerPhase.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/ComponentDescriptor.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/expression/ExpressionEvaluationException.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/factory/AbstractComponentFactory.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/builder/ComponentBuilder.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/discovery/DefaultComponentDiscoverer.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/discovery/ComponentDiscoveryListener.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/factory/ComponentInstantiationException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/exception/ComponentDescriptorUnmarshallingException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/collections/ComponentList.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/factory/UndefinedComponentFactoryException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/StartingException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/MapOrientedComponent.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/container/initialization/InitializeLoggerManagerPhase.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/ComponentSetDescriptor.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/StopPhase.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/exception/ComponentLookupException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/container/initialization/InitializeSystemPropertiesPhase.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/factory/ComponentFactory.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/configuration/PlexusConfigurationException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/factory/ComponentFactoryManager.java

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\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/Startable.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/expression/DefaultExpressionEvaluator.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/PlexusContainerException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/logging/BaseLoggerManager.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/exception/ComponentProfileException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/configuration/xml/XmlPlexusConfiguration.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/StartPhase.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/exception/ComponentImplementationNotFoundException.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/expression/TypeAwareExpressionEvaluator.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/repository/io/PlexusTools.java

\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/container/initialization/ContainerInitializationException.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/DefaultPlexusContainer.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/manager/PerLookupComponentManager.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/container/initialization/ContainerInitializationPhase.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/configuration/PlexusConfigurationMerger.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/Contextualizable.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/collections/ComponentMap.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/logging/AbstractLogEnabled.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/discovery/DiscoveryListenerDescriptor.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/container/initialization/AbstractCoreComponentInitializationPhase.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/SuspendPhase.java  
\* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/logging/console/ConsoleLogger.java

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 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/AbstractConfigurationConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/Converter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/DoubleConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/AbstractComponentConfigurator.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/DateConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/BasicComponentConfigurator.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/ConfigurationConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/ShortConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/FileConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/composite/MapConverter.java  
 \* /opt/cola/permits/1082870071\_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/FloatConverter.java

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* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/lookup/ConverterLookup.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/CharConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/UrlConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/StringBufferConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/BooleanConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/StringConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/AbstractBasicConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/composite/PlexusConfigurationConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/ComponentConfigurator.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/lookup/DefaultConverterLookup.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/composite/ObjectWithFieldsConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/ByteConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/composite/CollectionConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/IntConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/LongConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/composite/PropertiesConverter.java
* /opt/cola/permits/1082870071_1684882800.4474192/0/plexus-container-default-1-7-1-sources-1-
jar/org/codehaus/plexus/component/configurator/converters/basic/EnumConverter.java

```

# 1.46 sslex 1.2-0

## 1.46.1 Available under license :

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/*
* $Header: /cvsroot/sslex/sslex120/src/org/apache/struts/config/SecureActionConfig.java,v 1.1.1.1 2004/09/18
19:59:05 ditling Exp $
* $Revision: 1.1.1.1 $
* $Date: 2004/09/18 19:59:05 $
*
* =====

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jar/org/apache/struts/config/SecureActionConfig.java

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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/tiles/SecureTilesPlugin.java,v 1.1.1.1 2004/09/18  
19:59:07 ditling Exp \$

\* \$Revision: 1.1.1.1 \$

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 jar/org/apache/struts/tiles/SecureTilesPlugin.java

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 \* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/action/SecurePlugIn.java,v 1.1.1.1 2004/09/18 19:59:04  
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 \* \$Revision: 1.1.1.1 \$  
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```
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* $Header: /cvsroot/sslex/ssl120/src/org/apache/struts/action/SecureRequestProcessor.java,v 1.1.1.1 2004/09/18
19:59:05 ditling Exp $
* $Revision: 1.1.1.1 $
* $Date: 2004/09/18 19:59:05 $
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jar/org/apache/struts/action/SecureRequestProcessor.java

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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/taglib/html/PageSchemeTag.java,v 1.1.1.1 2004/09/18  
19:59:06 ditling Exp \$

\* \$Revision: 1.1.1.1 \$

\* \$Date: 2004/09/18 19:59:06 \$

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jar/org/apache/struts/taglib/html/PageSchemeTag.java  
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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/taglib/html/SecureLinkTag.java,v 1.1.1.1 2004/09/18  
19:59:07 ditling Exp \$  
\* \$Revision: 1.1.1.1 \$  
\* \$Date: 2004/09/18 19:59:07 \$  
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\* /opt/cola/permits/1137272579\_1614043349.13/0/sslex-1-2-0-sources-2-  
jar/org/apache/struts/taglib/html/SecureLinkTag.java

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\* \$Header: /cvsroot/sslex/sslex120/src/test/ssl/TestForm.java,v 1.1.1.1 2004/09/18 19:59:11 ditling Exp \$

\* \$Revision: 1.1.1.1 \$

\* \$Date: 2004/09/18 19:59:11 \$

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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/util/SecureRequestUtils.java,bak,v 1.1.1.1 2004/09/18  
19:59:11 ditling Exp \$  
\* \$Revision: 1.1.1.1 \$  
\* \$Date: 2004/09/18 19:59:11 \$

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\*  
 \*/  
 package org.apache.struts.util;

```
import org.apache.commons.logging.Log;
import org.apache.commons.logging.LogFactory;
import org.apache.struts.Globals;
import org.apache.struts.action.SecurePlugIn;
import org.apache.struts.config.ModuleConfig;
```

```

import org.apache.struts.config.SecureActionConfig;

import javax.servlet.ServletContext;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.jsp.PageContext;

import java.net.MalformedURLException;
import java.util.*;

/**
 * Define some additional utility methods.
 */
public class SecureRequestUtils {
 /**
 * The message resources.
 */
 protected static MessageResources messages =
 MessageResources.getMessageResources("org.apache.struts.taglib.html.LocalStrings");

 private static Log sLog = LogFactory.getLog(SecureRequestUtils.class);

 private static final String HTTP = "http";
 private static final String HTTPS = "https";
 private static final String STD_HTTP_PORT = "80";
 private static final String STD_HTTPS_PORT = "443";

 private static final String STOWED_REQUEST_ATTRIBS =
 "ssl.redirect.attrib.stowed";

 /**
 * Compute a hyperlink URL based on the <code>forward</code>,
 * <code>href</code>, or <code>page</code> parameter that is not null.
 * The returned URL will have already been passed to
 * <code>response.encodeURL()</code> for adding a session identifier.
 *
 * @param pageContext PageContext for the tag making this call
 *
 * @param forward Logical forward name for which to look up
 * the context-relative URI (if specified)
 * @param href URL to be utilized unmodified (if specified)
 * @param page Context-relative page for which a URL should
 * be created (if specified)
 * @param action a Struts action name
 *
 * @param params Map of parameters to be dynamically included (if any)
 * @param anchor Anchor to be dynamically included (if any)

```

```

*
* @param redirect Is this URL for a <code>response.sendRedirect()</code>?
*
* @exception MalformedURLException if a URL cannot be created
* for the specified parameters
*/
public static String computeURL(PageContext pageContext,
 String forward,
 String href,
 String page,
 String action,
 Map params,
 String anchor,
 boolean redirect) throws MalformedURLException {
 StringBuffer url =
 new StringBuffer(RequestUtils.computeURL(pageContext,
 forward,
 href,
 page,
 action,
 params,
 anchor,
 redirect)
);

 HttpServletRequest request = (HttpServletRequest) pageContext.getRequest();

 // Get the action servlet's context, we'll need it later
 ServletContext servletContext = pageContext.getServletContext();
 String contextPath = request.getContextPath();

 if (SecurePlugIn.getAppSslExtEnable(servletContext) &&
 url.toString().startsWith(contextPath)) {

 // Initialize the scheme and ports we are using
 String usingScheme = request.getScheme();
 String usingPort = String.valueOf(request.getServerPort());

 // Get the servlet context relative link URL
 String linkString = url.toString().substring(contextPath.length());

 // See if link references an action somewhere in our app
 SecureActionConfig secureConfig = getActionConfig(pageContext, linkString);

 // If link is an action, find the desired port and scheme
 if (secureConfig != null && !SecureActionConfig.ANY.equalsIgnoreCase(secureConfig.getSecure())) {

 String desiredScheme = Boolean.valueOf(secureConfig.getSecure()).booleanValue() ? HTTPS : HTTP;

```

```

String desiredPort = Boolean.valueOf(secureConfig.getSecure()).booleanValue() ?
 SecurePlugIn.getAppHttpsPort(servletContext) :
 SecurePlugIn.getAppHttpPort(servletContext);

// If scheme and port we are using do not match the ones we want
if ((!desiredScheme.equals(usingScheme) || !desiredPort.equals(usingPort))) {
 url.insert(0, startNewUrlString(request, desiredScheme, desiredPort));

 // This is a hack to help us overcome the problem that some
 // older browsers do not share sessions between http & https
 if (url.toString().indexOf(";jsessionid=") < 0) {
 // Add the session identifier
 url = new StringBuffer(toEncoded(url.toString(),
 request.getSession().getId()));
 }
}
}
}
return url.toString();
}

/**
 * Finds the configuration definition for the specified action link
 * @param pageContext the current page context.
 * @param linkString The action we are searching for, specified as a link. (i.e. may include "..")
 * @return The SecureActionConfig object entry for this action, or null if not found
 */
private static SecureActionConfig getActionConfig(PageContext pageContext,
 String linkString) {

 ModuleConfig moduleConfig = SecureRequestUtils.selectModule(linkString, pageContext);

 // Strip off the subapp path, if any
 linkString = linkString.substring(moduleConfig.getPrefix().length());

 // Use our servlet mapping, if one is specified
 // String servletMapping = (String) pageContext.getAttribute(Globals.SERVLET_KEY,
 // PageContext.APPLICATION_SCOPE);

 // Get all the servlet mappings for the ActionServlet, loop thru to find
 // the correct action being specified
 ServletContext servletContext = pageContext.getServletContext();
 Iterator mappingItr = SecurePlugIn.getAppServletMappings(servletContext).iterator();
 while (mappingItr.hasNext()) {
 String servletMapping = (String) mappingItr.next();

 int starIndex = servletMapping != null ? servletMapping.indexOf('*') : -1;
 if (starIndex == -1) {

```

```

 continue;
 } // No servlet mapping or no usable pattern defined, short circuit

 String prefix = servletMapping.substring(0, starIndex);
 String suffix = servletMapping.substring(starIndex + 1);

 // Strip off the jsessionid, if any
 int jsession = linkString.indexOf(";jsessionid=");
 if (jsession >= 0) {
 linkString = linkString.substring(0, jsession);
 }

 // Strip off the anchor, if any
 int anchor = linkString.indexOf("#");
 if (anchor >= 0) {
 linkString = linkString.substring(0, anchor);
 }

 // Strip off the query string, if any
 int question = linkString.indexOf("?");
 if (question >= 0) {
 linkString = linkString.substring(0, question);
 }

 // Unable to establish this link as an action, short circuit
 if (!(linkString.startsWith(prefix) && linkString.endsWith(suffix))) {
 continue;
 }

 // Chop off prefix and suffix
 linkString = linkString.substring(prefix.length());
 linkString = linkString.substring(0, linkString.length() - suffix.length());
 if (!linkString.startsWith("/")) {
 linkString = "/" + linkString;
 }

 SecureActionConfig secureConfig = (SecureActionConfig) moduleConfig.findActionConfig(linkString);

 return secureConfig;
}
return null;
}

/**
 * Builds the protocol, server name, and port portion of the new URL
 * @param request The current request
 * @param desiredScheme The scheme (http or https) to be used in the new URL
 * @param desiredPort The port number to be used in the new URL

```

```

* @return The new URL as a StringBuffer
*/
private static StringBuffer startNewUrlString(HttpServletRequest request,
 String desiredScheme,
 String desiredPort) {
 StringBuffer url = new StringBuffer();
 String serverName = request.getServerName();
 url.append(desiredScheme).append("://").append(serverName);

 if ((HTTP.equals(desiredScheme) && !STD_HTTP_PORT.equals(desiredPort)) ||
 (HTTPS.equals(desiredScheme) && !STD_HTTPS_PORT.equals(desiredPort))) {
 url.append(":").append(desiredPort);
 }

 return url;
}

/**
 * Creates query String from request body parameters
 * @param aRequest The current request
 * @return The created query string (with no leading "?")
 */
public static String getRequestParameters(HttpServletRequest aRequest) {
 Map m = getParameterMap(aRequest);
 return createQueryStringFromMap(m, "&").toString();
}

/**
 * Builds a query string from a given map of parameters
 * @param m A map of parameters
 * @param ampersand String to use for ampersands (e.g. "&" or "&")
 * @return query string (with no leading "?")
 */
public static StringBuffer createQueryStringFromMap(Map m, String ampersand) {
 StringBuffer aReturn = new StringBuffer("");
 Set aEntryS = m.entrySet();
 Iterator aEntryI = aEntryS.iterator();
 while (aEntryI.hasNext()) {
 Map.Entry aEntry = (Map.Entry) aEntryI.next();
 Object value = aEntry.getValue();
 String[] aValues = new String[1];
 if (value == null) {
 aValues[0] = "";
 } else if (value instanceof List) { // Work around for Weblogic 6.1sp1
 List aList = (List) value;
 aValues = (String[]) aList.toArray(new String[aList.size()]);
 } else if (value instanceof String) { // Single value from Struts tags

```

```

 aValues[0] = (String) value;
 } else { // String array, the standard returned from request.getParameterMap()
 aValues = (String[]) value; // This is the standard
 }
 for (int i = 0; i < aValues.length; i++) {
 append(aEntry.getKey(), aValues[i], aReturn, ampersand);
 }
}
return aReturn;
}

/**
 * Appends new key and value pair to query string
 * @param key parameter name
 * @param value value of parameter
 * @param queryString existing query string
 * @param ampersand string to use for ampersand (e.g. "&" or "&")
 * @return query string (with no leading "?")
 */
private static StringBuffer append(Object key, Object value, StringBuffer queryString, String ampersand) {
 if (queryString.length() > 0) {
 queryString.append(ampersand);
 }
 queryString.append(RequestUtils.encodeURL(key.toString()));
 queryString.append("=");
 queryString.append(RequestUtils.encodeURL(value.toString()));

 return queryString;
}

/**
 * Stores request attributes in session
 * @param aRequest The current request
 * @return true, if the attributes were stowed in the session,
 * false otherwise
 */
public static boolean stowRequestAttributes(HttpServletRequest aRequest) {

 if (aRequest.getSession().getAttribute(STOWED_REQUEST_ATTRIBS) != null) {
 return false;
 }

 Enumeration enum = aRequest.getAttributeNames();
 Map map = new HashMap();
 while (enum.hasMoreElements()) {
 String name = (String) enum.nextElement();
 map.put(name, aRequest.getAttribute(name));
 }
}

```



```

aRequest.getSession().setAttribute(STOWED_REQUEST_ATTRIBS, map);

return true;
}

/**
 * Reclaims request attributes from session to request
 * @param aRequest The current request
 * @param doRemove True, if the attributes should be removed after being reclaimed,
 * false otherwise
 */
public static void reclaimRequestAttributes(HttpServletRequest aRequest,
 boolean doRemove) {
 Map map = (Map) aRequest.getSession().getAttribute(STOWED_REQUEST_ATTRIBS);

 if (map == null) {
 return;
 }

 Iterator itr = map.keySet().iterator();
 while (itr.hasNext()) {
 String name = (String) itr.next();

 aRequest.setAttribute(name, map.get(name));
 }

 if (doRemove) {
 aRequest.getSession().removeAttribute(STOWED_REQUEST_ATTRIBS);
 }
}

/**
 * Creates a redirect URL string if the current request should be redirected
 * @param request current servlet request
 * @param application the current ServletContext
 * @param isSecure "true" if the current request should be transmitted via SSL
 * "false" if not, "any" if we just don't care if it's SSL or not
 * @return the URL to redirect to
 */
static public String getRedirectString(HttpServletRequest request,
 ServletContext application,
 String isSecure) {

 String urlString = null;
 String httpPort = SecurePlugIn.getAppHttpPort(application);
 String httpsPort = SecurePlugIn.getAppHttpsPort(application);

```

```

// If sslExt disabled, or we don't have a protocol preference,
// just return the null value we have so far
if (!SecurePlugIn.getAppSslExtEnable(application) || SecureActionConfig.ANY.equalsIgnoreCase(isSecure)) {
 return urlString;
}

// get the scheme we want to use for this page and
// get the scheme used in this request
String desiredScheme = Boolean.valueOf(isSecure).booleanValue() ? HTTPS : HTTP;
String usingScheme = request.getScheme();

// Determine the port number we want to use
// and the port number we used in this request
String desiredPort = Boolean.valueOf(isSecure).booleanValue() ? httpsPort : httpPort;
String usingPort = String.valueOf(request.getServerPort());

// Must also check ports, because of IE multiple redirect problem
if (!desiredScheme.equals(usingScheme) || !desiredPort.equals(usingPort)) {

 urlString = buildNewUrlString(request,
 desiredScheme,
 desiredPort
);

 // Temporarily store attributes in session
 if (!SecureRequestUtils.stowRequestAttributes(request)) {
 // If request attributes already stored in session, reclaim them
 // This is a hack for the IE multiple redirect problem
 SecureRequestUtils.reclaimRequestAttributes(request, false);
 }
} else {
 // Retrieve attributes from session
 SecureRequestUtils.reclaimRequestAttributes(request, true);
}

return urlString;
}

/**
 * Builds the URL that we will redirect to
 * @param request The current request
 * @param desiredScheme The protocol (http or https) we wish to use in new URL
 * @param desiredPort The port number we wish to use in new URL
 * @return the URL we will redirect to, as a String
 */
private static String buildNewUrlString(HttpServletRequest request,

```

```

 String desiredScheme,
 String desiredPort) {

 StringBuffer url = startNewUrlString(request, desiredScheme, desiredPort);

 url.append(request.getRequestURI());

 return toEncoded(addQueryString(request, url), request.getSession().getId());
}

/**
 * Adds the query string, if any, to the given URL. The query string
 * is either taken from the existing query string or
 * generated from the posting request body parameters.
 * @param request The current request
 * @param url The existing URL we will add the query string to
 * @return The URL with query string
 */
private static String addQueryString(HttpServletRequest request, StringBuffer url) {
 // add query string, if any
 String queryString = request.getQueryString();
 if (queryString != null && queryString.length() != 0) {
 url.append("?"+ queryString);
 } else {
 queryString = SecureRequestUtils.getRequestParameters(request);
 if (queryString != null && queryString.length() != 0) {
 url.append("?"+ queryString);
 }
 }
}

return url.toString();
}

/**
 * Select the sub-application to which the specified request belongs, and
 * add corresponding request attributes to this request.
 *
 * @param urlPath The requested URL
 * @param pageContext The ServletContext for this web application
 * @return The ModuleConfig for the given URL path
 */
public static ModuleConfig selectModule(String urlPath,
 PageContext pageContext) {

 // Get the ServletContext

```

```

ServletContext servletContext = pageContext.getServletContext();

// Match against the list of sub-application prefixes
String prefix = RequestUtils.getModuleName(urlPath, servletContext);

// Expose the resources for this sub-application
ModuleConfig config = (ModuleConfig)
 servletContext.getAttribute(Globals.MODULE_KEY + prefix);

return config;
}

/**
 * Creates a map of request parameters where the key is the parameter name and the
 * value is the String array of parameter values.
 * @param request The current request
 * @return The map of parameters and their values
 */
private static Map getParameterMap(HttpServletRequest request) {
 Map map = new HashMap();
 Enumeration enum = request.getParameterNames();
 while (enum.hasMoreElements()) {
 String name = (String) enum.nextElement();
 String[] values = request.getParameterValues(name);
 map.put(name, values);
 }

 return map;
}

/** Checks to see if SSL should be toggled for this
 * action
 * @param aMapping The mapping object for this Action
 * @param aContext The current ServletContext
 * @param aRequest The current request object
 * @param aResponse The current response object
 * @return true, if being redirected, false otherwise
 */
public static boolean checkSsl(SecureActionConfig aMapping,
 ServletContext aContext,
 HttpServletRequest aRequest,
 HttpServletResponse aResponse) {

 // Build a redirect string if needed
 String redirectString =
 SecureRequestUtils.getRedirectString(aRequest,
 aContext,
 aMapping.getSecure()

```

```

);

 // If a redirect string was generated, perform the redirect and return true
 if (redirectString != null) {
 try {
 // Redirect the page to the desired URL
 aResponse.sendRedirect(aResponse.encodeRedirectURL(redirectString));
 return true;
 } catch (Exception ioe) {
 sLog.error("IOException in redirect" + ioe.getMessage());
 }
 }

 // No redirect performed, return false
 return false;
}

/**
 * Return the specified URL with the specified session identifier
 * suitably encoded.
 *
 * @param url URL to be encoded with the session id
 * @param sessionId Session id to be included in the encoded URL
 */
private static String toEncoded(String url, String sessionId) {

 if ((url == null) || (sessionId == null))
 return (url);

 String path = url;
 String query = "";
 String anchor = "";
 int question = url.indexOf('?');
 if (question >= 0) {
 path = url.substring(0, question);
 query = url.substring(question);
 }
 int pound = path.indexOf('#');
 if (pound >= 0) {
 anchor = path.substring(pound);
 path = path.substring(0, pound);
 }
 StringBuffer sb = new StringBuffer(path);
 if (sb.length() > 0) { // jsessionid can't be first.
 sb.append(";jsessionid=");
 sb.append(sessionId);
 }
}

```

```
sb.append(anchor);
sb.append(query);
return (sb.toString());

}
}
```

Found in path(s):

\* /opt/cola/permits/1137272579\_1614043349.13/0/sslex-1-2-0-sources-2-  
jar/org/apache/struts/util/SecureRequestUtils.java.bak

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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/util/SecureRequestUtils.java,v 1.2 2004/09/27 00:02:23  
ditling Exp \$

\* \$Revision: 1.2 \$

\* \$Date: 2004/09/27 00:02:23 \$

\*

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jar/org/apache/struts/util/SecureRequestUtils.java

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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/taglib/html/SecureFormTag.java,v 1.1.1.1 2004/09/18  
19:59:06 ditling Exp \$  
\* \$Revision: 1.1.1.1 \$  
\* \$Date: 2004/09/18 19:59:06 \$

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\* /opt/cola/permits/1137272579\_1614043349.13/0/sslex-1-2-0-sources-2-jar/org/apache/struts/taglib/html/SecureFormTag.java



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```
/*
* $Header: /cvsroot/sslex/ssl120/src/org/apache/struts/taglib/html/SecureRewriteTag.java,v 1.1.1.1 2004/09/18
19:59:07 ditling Exp $
* $Revision: 1.1.1.1 $
* $Date: 2004/09/18 19:59:07 $
*
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\* \$Header: /cvsroot/sslex/sslex120/src/org/apache/struts/action/SecurePlugInInterface.java,v 1.1.1.1 2004/09/18  
19:59:04 ditling Exp \$

\* \$Revision: 1.1.1.1 \$

\* \$Date: 2004/09/18 19:59:04 \$

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 jar/org/apache/struts/action/SecurePlugInInterface.java

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```
/*
 * $Header: /cvsroot/sslex/sslex120/src/org/apache/struts/action/SecureTilesRequestProcessor.java,v 1.1.1.1
 2004/09/18 19:59:05 ditling Exp $
 * $Revision: 1.1.1.1 $
 * $Date: 2004/09/18 19:59:05 $
 *
 * =====
 *
 */
```

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jar/org/apache/struts/action/SecureTilesRequestProcessor.java  
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\* \$Header: /cvsroot/sslex/sslex120/src/test/ssl/NullAction.java,v 1.1.1.1 2004/09/18 19:59:11 ditling Exp \$  
\* \$Revision: 1.1.1.1 \$  
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# 1.47 selenium 4.0.0-alpha.5

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\* /opt/cola/permits/1685982338\_1684950761.2620344/0/selenium-support-4-0-0-alpha-5-jar/org/openqa/selenium/support/locators/findElements.js

## 1.48 animal-sniffer-annotation 1.14

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## 1.49 @standuply/ng2-emoji 9.0.0-1

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## 1.51 org.seleniumhq.selenium:selenium-devtools 4.0.0-alpha-5

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## 1.53 json-simple 1.1.1

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# 1.54 jetty-websocket-api 9.2.20.v20161216

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Manifest-Version: 1.0  
Archiver-Version: Plexus Archiver  
Created-By: Apache Maven Bundle Plugin  
Built-By: joakim  
Build-Jdk: 1.7.0\_75  
Implementation-Vendor: Eclipse.org - Jetty  
Implementation-Version: 9.2.20.v20161216  
url: <http://www.eclipse.org/jetty>  
Export-Package: org.eclipse.jetty.websocket.api.extensions;version="9.2.20",org.eclipse.jetty.websocket.api;version="9.2.20",org.eclipse.jetty.websocket.api.annotations;version="9.2.20",org.eclipse.websocket.api.util;version="9.2.20"  
Bundle-Classpath: .  
Tool: Bnd-1.15.0  
Bundle-Name: Jetty :: Websocket :: API  
Bundle-RequiredExecutionEnvironment: JavaSE-1.7  
Bundle-Copyright: Copyright (c) 2008-2016 Mort Bay Consulting Pty. Ltd.  
Bundle-Vendor: Eclipse Jetty Project  
Bundle-Version: 9.2.20.v20161216  
Bnd-LastModified: 1481929230309  
Bundle-ManifestVersion: 2  
Bundle-Description: Administrative parent pom for Jetty modules  
Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0>, <http://www.eclipse.org/org/documents/epl-v10.php>  
Bundle-SymbolicName: org.eclipse.jetty.websocket.api  
Bundle-DocURL: <http://www.eclipse.org/jetty>

Found in path(s):

\* /opt/cola/permits/1685982711\_1684945486.6008346/0/websocket-api-9-2-20-v20161216-jar/META-INF/MANIFEST.MF

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jar/com/gargoylesoftware/htmlunit/javascript/host/dom/MediaList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMStringMap.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegCurvetoCubicSmoothRel.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/xml/XMLDocument.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/Symbol.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlBackgroundSound.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

jar/com/gargoylesoftware/htmlunit/javascript/host/arrays/Int32Array.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMNode.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/MediaStreamTrack.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/webkitURL.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/regexp/HtmlUnitRegExpProxy.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMImplementation.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFilterElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGViewSpec.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/UrlFetchWebConnection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/protocol/javascript/JavaScriptURLConnection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlUnknownElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLFormControlsCollection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/FrameWindow.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/AlertHandler.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlTeletype.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLHRElement.java  
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jar/com/gargoylesoftware/htmlunit/javascript/host/idb/IDBMutableFile.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgStop.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlTableHeaderCell.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgView.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/canvas/CanvasGradient.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/NodeList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/OfflineAudioContext.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/configuration/JsxConstructor.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/midi/MIDIAccess.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/Location.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/Element.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-



jar/com/gargoylesoftware/htmlunit/javascript/host/event/MediaEncryptedEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLLabelElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGTextPathElement.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgSwitch.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/StorageHolder.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/EventTarget.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgVKern.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/ClientRectList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

jar/com/gargoylesoftware/htmlunit/javascript/host/event/WebKitTransitionEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/file/File.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGGraphicsElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/WebResponseData.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlButton.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGNumberList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/file/DataTransferItemList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLParamElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlPage.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/SharedWorker.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/HiddenFunctionObject.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DocumentType.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/WebConsole.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/MIDIMessageEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGSwitchElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/ScriptException.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgFeFlood.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/SourceBuffer.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/OnErrorEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/MouseScrollEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/WebSocketCookieStore.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMDocumentFragment.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMCursor.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

jar/com/gargoylesoftware/htmlunit/javascript/host/event/MozContactChangeEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/DeviceProximityEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/rtc/RTCPeerConnection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlDetails.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/idb/webkitIDBFactory.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/DomNamespaceNode.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/idb/IDBCursorWithValue.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/crypto/SubtleCrypto.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGDiscardElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/DomComment.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/NodeIterator.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlLabel.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLNextIdElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegMovetoRel.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/javascript/host/Notification.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlTime.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/configuration/JavaScriptConfiguration.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/WebAssert.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgGlyph.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/MSXMLJavaScriptEnvironment.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLInlineQuotationElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/webkitSpeechRecognitionEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/StringWebResponse.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/midi/MIDIInput.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/BarProp.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgPath.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/FunctionWrapper.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgLinearGradient.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEMergeNodeElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/util/FalsifyingWebConnection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLDataListElement.java  
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jar/com/gargoylesoftware/htmlunit/RefreshHandler.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlCanvas.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/TextTrackCue.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/FailingHttpStatusCodeException.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGComponentTransferFunctionElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/IdleDeadline.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLDivElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLIsIndexElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegCurvetoCubicAbs.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgRect.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlHtml.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlLegend.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/ObjectInstantiationException.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/javascript/host/dom/Document.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/netscape/javascript/JSEException.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/NativeFunctionToStringFunction.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/security/CredentialsContainer.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/AudioNode.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGAnimatedString.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/xml/FormData.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/MozSettingsEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLTextAreaElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlLayer.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/WaitingRefreshHandler.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/background/DownloadBehaviorJob.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/canvas/WebGLRenderbuffer.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLCanvasElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegLinetoVerticalAbs.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

jar/com/gargoylesoftware/htmlunit/javascript/host/media/rtc/mozRTCIceCandidate.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/AppBannerPromptResult.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlFigure.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgImage.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/PromiseRejectionEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/MockWebConnection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/httpclient/SocksConnectionSocketFactory.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMRequest.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLFieldSetElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGTextPositioningElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGLinearGradientElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/OscillatorNode.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/ServiceWorkerMessageEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGRectElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLTableDataCellElement.java  
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jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEDistantLightElement.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlRp.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/idb/IDBCursor.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlTimeInput.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLDetailsElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMMatrixReadOnly.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/WebClient.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlRangeInput.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/worker/DedicatedWorkerGlobalScope.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMNamedNodeMap.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMTokenList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/DownloadedContent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/canvas/CanvasRenderingContext2D.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegArcAbs.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/css/CSSValue.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/MethodWrapper.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgFeTile.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgLine.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlFigureCaption.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgElementFactory.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/WebSocket.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlMenuItem.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/IIRFilterNode.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/Page.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/Netscape.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGCircleElement.java  
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jar/com/gargoylesoftware/htmlunit/UnexpectedPage.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/intl/Intl.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/WebWindowNotFoundException.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlImageInput.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLHeadingElement.java  
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jar/com/gargoylesoftware/htmlunit/html/HtmlDateTimeLocalInput.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLUnknownElement.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/idb/webkitIDBDatabase.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/css/CSSRuleList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLMenuElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/DefaultPageCreator.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlKeyboard.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGImageElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgAnimateTransform.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/PerformanceObserverEntryList.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEMergeElement.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgScript.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/NiceRefreshHandler.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/rtc/mozRTCPeerConnection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegCurvetoQuadraticSmoothRel.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlMenu.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/background/JavascriptXMLHttpRequestJob.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLAudioElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLInputElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/AbstractPage.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/httpclient/HtmlUnitCookieSpecProvider.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/AudioBufferSourceNode.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegClosePath.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-



jar/com/gargoylesoftware/htmlunit/javascript/background/JavaScriptFunctionJob.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/AudioListener.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMDocument.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/Window.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlPasswordInput.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMPointReadOnly.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/SpeechSynthesisEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgAnimateColor.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlBaseFont.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLDirectoryElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEturbulenceElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/TreeWalker.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgFeImage.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLDListElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlHeader.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/SimpleScriptable.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

jar/com/gargoylesoftware/htmlunit/javascript/host/media/DynamicsCompressorNode.java  
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jar/com/gargoylesoftware/htmlunit/javascript/host/event/RTCPeerConnectionIceEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/media/presentation/PresentationRequest.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/UnknownElementFactory.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLUListElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/worker/ServiceWorkerRegistration.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMCDATASection.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEDisplacementMapElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/httpclient/HtmlUnitBrowserCompatCookieHeaderValueFormatter.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgPolyline.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/SgmlPage.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/DomElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgMissingGlyph.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGClipPathElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlBase.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/WeakSet.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlAddress.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/SVGZoomEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLTimeElement.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/ElementNotFoundException.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/arrays/Uint8Array.java  
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jar/com/gargoylesoftware/htmlunit/svg/SvgClipPath.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgAltGlyph.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGRadialGradientElement.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/PresentationConnectionAvailableEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/DomNode.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/javascript/host/Reflect.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/MSXMLScriptable.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/arrays/DataView.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEffuseLightingElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/background/BackgroundJavaScriptFactory.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/speech/webkitSpeechGrammar.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/BrowserVersion.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlSubscript.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/XPathResult.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/css/StyleAttributes.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/ImmediateRefreshHandler.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/Text.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/PushSubscription.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-



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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlCitation.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/svg/SvgDesc.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlFrameSet.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPointList.java  
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jar/com/gargoylesoftware/htmlunit/html/HtmlAudio.java  
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jar/com/gargoylesoftware/htmlunit/svg/SvgEllipse.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/javascript/host/media/webkitAudioContext.java  
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\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
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jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLDOMText.java  
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jar/com/gargoylesoftware/htmlunit/javascript/host/event/MediaQueryListEvent.java  
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jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLSerializer.java  
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jar/com/gargoylesoftware/htmlunit/html/HtmlBreak.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlHeading5.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/performance/PerformanceNavigationTiming.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/Iterator.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/dom/DOMMatrix.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/HtmlHeading4.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegLinetoHorizontalRel.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegLinetoVerticalRel.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/css/CSSConditionRule.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/SubmittableElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/activex/javascript/msxml/XMLHttpRequest.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLBlockElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGLineElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/html/DataTransfer.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/idb/webkitIDBTransaction.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGFEFloodElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGTextContentElement.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/javascript/host/event/PopStateEvent.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-  
jar/com/gargoylesoftware/htmlunit/html/CharacterDataChangeListener.java  
\* /opt/cola/permits/1685982247\_1684869408.9274647/0/htmlunit-2-24-sources-

```
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegCurvetoCubicRel.java
* /opt/cola/permits/1685982247_1684869408.9274647/0/htmlunit-2-24-sources-
jar/com/gargoylesoftware/htmlunit/javascript/host/svg/SVGPathSegArcRel.java
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```

```
<name>Apache License, Version 2.0</name>
<url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
```

```
Found in path(s):
* /opt/cola/permits/1685982247_1684869408.9274647/0/htmlunit-2-24-sources-jar/META-
INF/maven/net.sourceforge.htmlunit/htmlunit/pom.xml
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```
/*
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* limitations under the License.
*/
/**
 * Returns this element's <tt>offsetLeft</tt>, which is the calculated left position of this
 * element relative to the <tt>offsetParent</tt>.
 *
 * @return this element's <tt>offsetLeft</tt>
 * @see MSDN Documentation
 * @see Element Dimensions
 * @see Reverse Engineering by Anne van
 Kesteren
 */
```

```
Found in path(s):
* /opt/cola/permits/1685982247_1684869408.9274647/0/htmlunit-2-24-sources-
jar/com/gargoylesoftware/htmlunit/javascript/host/html/HTMLElement.java
```

## 1.56 angular-cli v6.0.0

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## 1.57 google-guava 16.0.1

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Doug Lea

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## 1.59 args4j 2.0.26

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Manifest-Version: 1.0  
Bnd-LastModified: 1383440270812  
Build-Jdk: 1.7.0\_15  
Built-By: kohsuke  
Bundle-Description: args4j : Java command line arguments parser  
Bundle-DocURL: <http://www.kohsuke.org/>  
Bundle-License: <http://www.opensource.org/licenses/mit-license.php>  
Bundle-ManifestVersion: 2  
Bundle-Name: args4j  
Bundle-SymbolicName: org.kohsuke.args4j  
Bundle-Vendor: Kohsuke Kawaguchi  
Bundle-Version: 2.0.26  
Created-By: Apache Maven Bundle Plugin  
Export-Package: org.kohsuke.args4j.spi;uses:="org.kohsuke.args4j";version="2.0.26",org.kohsuke.args4j;uses:="org.kohsuke.args4j.spi,org.xml.sax,org.xml.sax.helpers";version="2.0.26"  
Import-Package: org.xml.sax,org.xml.sax.helpers  
Tool: Bnd-2.1.0.20130426-122213

Found in path(s):

\* /opt/cola/permits/1125859757\_1684881924.5711994/0/args4j-2-0-26-jar/META-INF/MANIFEST.MF

## 1.60 apache-commons-collections 3.2.1

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## 1.61 commons-logging 1.2

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-

jar/com/google/javascript/rhino/TypeI.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/rhino/FunctionTypeI.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/rhino/NominalTypeBuilder.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/rhino/ObjectTypeI.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/IR.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/math/trunc.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/math/acosh.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/SubtypeCache.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/object/getownpropertysymbols.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/util/iteratorfromarray.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/util/makeiterator.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/debugging/sourcemap/super/com/google/debugging/sourcemap/SourceMapObjectParser.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-

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jar/com/google/javascript/jscomp/js/es6/math/cosh.js  
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jar/com/google/javascript/jscomp/js/es6/number/isnan.js  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
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 jar/com/google/javascript/jscomp/RemoveSuperMethodsPass.java  
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 jar/com/google/javascript/jscomp/PerformanceTrackerCodeSizeEstimator.java  
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 jar/com/google/javascript/jscomp/Es6ExtractClasses.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/ObjectsBuilder.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/NewTargetExpressionTree.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/number/issafeinteger.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/number/constants.js

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TranspilationPasses.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/util/global.js  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/set.js  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/RewriteJsonToModule.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/string/repeat.js  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/math/log10.js  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/FunctionNamespace.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/navigational\_xss\_sinks.js  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/RuntimeTypeCheck.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Strings.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/Annotation.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CheckRegExp.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/JoinOp.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/SideEffectsAnalysis.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ErrorPass.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/deps/SortedDependencies.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/OptimizeCalls.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ReplaceStrings.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PeepholeOptimizationsPass.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AbstractPeepholeOptimization.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ScopedAliases.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/graph/LatticeElement.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PeepholeMinimizeConditions.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PeepholeSubstituteAlternateSyntax.java  
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jar/com/google/javascript/jscomp/ant/CompileTask.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/VariableVisibilityAnalysis.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/RecoverableJsAst.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/linker/minimal\_linker.frag.xml  
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jar/com/google/javascript/jscomp/Es6RewriteBlockScopedDeclaration.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/newtypes/NamespaceLit.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/refactoring/Scanner.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/newtypes/ClosurePersistentHashSet.java  
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* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/package.html
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/graph/package.html
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/package.html
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/rhino/package.html
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/rhino/jstype/package.html
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```

```
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```
Found in path(s):
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```
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/instrumentation_template.proto
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jar/com/google/javascript/rhino/Node.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/VariableMap.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/DefaultNameGenerator.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/JModule.java

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jar/com/google/debugging/sourcemap/proto/mapping.proto

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/lang/Thread.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ijs/PotentialDeclaration.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/IdGenerator.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/deps/ModuleResolver.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/object/getownpropertydescriptors.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PersistentInputStore.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TypeMismatch.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/bundle/CachedTransformer.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/array\_indexof\_to\_includes.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/array\_prototype\_slice\_to\_array\_from.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/chai\_expect\_to\_assert.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PrebuildAst.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ijs/JdocUtil.java



\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/util/setprototypeof.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/string\_indexof\_to\_includes.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/testing/TypeSubject.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Es6CheckModule.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/GoogBindToArrow.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ijs/FileInfo.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/J2clAssertRemovalPass.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/TypeParameters.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/util/reflectobject.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/FindModuleDependencies.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/InvalidatingTypes.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/bundle/Transpiler.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/number/parseint.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/set\_element\_href.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/LiveVariablesAnalysis.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/conformance.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/HasCompiler.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/NominalTypeBuilderNti.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/ToStringContext.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/bundle/Source.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/deps/NodeModuleResolver.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/util/defines.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TypeInfoCheck.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ijs/ClassUtil.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/BasicBlock.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/util/stringpadding.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PrintStreamJSONErrorManager.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/MemoizedScopeCreator.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/FunctionNames.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ChangeVerifier.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ReferenceMap.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/bundle/CompilerBasedTransformer.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/bundle/TranspilationException.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/util/objectcreate.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/SourceMapResolver.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/number/parseFloat.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/object/values.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/testing/FeatureSetSubject.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CrossModuleReferenceCollector.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/string/padstart.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Es6RewriteScriptsToModules.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/IncrementalScopeCreator.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/bundle/CoverageInstrumenter.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/deps/BrowserModuleResolver.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Es6NormalizeShorthandProperties.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/SourceMapInput.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/IndexProvider.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ReferenceCollection.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Es6RewriteBlockScopedFunctionDeclaration.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NTIWorkset.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/PrebuildAst.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/string/padend.js  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/SourceMapResolver.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Timeline.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PassNames.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/refactoring/examples/refasterjs/window\_open\_nonconst\_name.js  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ThreadSafeDelegatingErrorManager.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/array/includes.js

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/SimpleErrorReporter.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/VoidType.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/FunctionParamBuilder.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/InstanceObjectType.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/JSTypeRegistry.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/UnknownType.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/SourcePosition.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/BooleanType.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/PeepholeCollectPropertyAssignments.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-

```
jar/com/google/javascript/jscomp/parsing/parser/trees/WithStatementTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/debugging/sourcemap/SourceMapConsumerFactory.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/WhileStatementTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/DoWhileStatementTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/regex/CaseCanonicalize.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/debugging/sourcemap/SourceMapConsumerV3.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/ClassDeclarationTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/debugging/sourcemap/SourceMapSupplier.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/ShadowVariables.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/ArgumentListTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/util/format/UnknownFormatConversionException.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/debugging/sourcemap/Util.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/NewExpressionTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/util/ErrorReporter.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/ObjectLiteralExpressionTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/trees/ThisExpressionTree.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/parser/util/format/SimpleFormat.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/ProcessCommonJSMODULES.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/FieldCleanupPass.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/ClosureOptimizePrimitives.java
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jar/com/google/javascript/jscomp/conformance.proto
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```

```
// We make a special exception when the entire cfgNode is a chain
```

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- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/VerboseMessageFormatter.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/InlineSimpleMethods.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ProcessDefines.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CheckGlobalThis.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CodingConvention.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ConvertToDottedProperties.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Region.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PrintStreamErrorManager.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/type/ClosureReverseAbstractInterpreter.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/DotFormatter.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/type/SemanticReverseAbstractInterpreter.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/GoogleCodingConvention.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CombinedCompilerPass.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/type/ReverseAbstractInterpreter.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AliasStrings.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/StripCode.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-

jar/com/google/javascript/jscomp/SimpleRegion.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/LightweightMessageFormatter.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/InvocationsCallback.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/EventManager.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/LoggerEventManager.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/BasicEventManager.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/AbstractMessageFormatter.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/MethodCompilerPass.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/JsDocInfoParser.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/type/ChainableReverseAbstractInterpreter.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/ClosureCodingConvention.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/SourceExcerptProvider.java  
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jar/com/google/javascript/jscomp/js/es6/modules/runtime.js  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/deps/WebpackModuleResolver.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/Es6RewriteModulesToCommonJsModules.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/modules.js  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ij/CheckIjsWarningsGuard.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AbstractVar.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/EsNextToEs8Converter.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AbstractScope.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/es6/util/assign.js  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ClosureRewriteClass.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AngularPass.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/JvmMetrics.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/js/base.js

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ErrorHandler.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CheckSuspiciousCode.java

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jar/com/google/javascript/rhino/TokenStream.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Normalize.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/graph/GraphNode.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/DisambiguateProperties.java  
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jar/com/google/javascript/jscomp/InlineCostEstimator.java  
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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/JSType.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/FunctionTypeBuilder.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/ObjectType.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/JSTypeCreatorFromJSDoc.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ConstParamCheck.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ForbiddenChange.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NTIScope.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/DisambiguatePrivateProperties.java

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```

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- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AnonymousFunctionNamingCallback.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NodeUtil.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Scope.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/RenameProperties.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Compiler.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TypedScopeCreator.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CodeGenerator.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CodeConsumer.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/MessageBundle.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NodeTraversal.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PeepholeFoldConstants.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NameAnonymousFunctions.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NodeNameExtractor.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/VarCheck.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/NameAnonymousFunctionsMapped.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CheckLevel.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/JsMessageExtractor.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/PeepholeRemoveDeadCode.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ConstCheck.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ReplaceMessages.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/JSError.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/RenameVars.java

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Found in path(s):

```
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/lint/package.html
```

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```
This file contains example JS conformance configurations for various problems
```

```
with JavaScript. Since each project may want to opt-in to different rules, and
```

```
each project may need its own specific whitelist, the examples in this file
```

```
are meant to be copied to a project specific conformance_proto.textproto file.
```

```
requirement: {
```

```
 type: BANNED_NAME
```

```
 error_message: 'eval is not allowed since it can be used to execute '
```

```
 'arbitrary JavaScript code. It is not typically necessary '
```

```
 'in ordinary programming.'
```

```
 value: 'eval'
```

```
 whitelist: 'javascript/closure/base.js'
```

```
 whitelist: 'javascript/closure/json/json.js'
```

```
}
```

```
requirement: {
```

```
 type: BANNED_PROPERTY
```

```
 error_message: 'Arguments.prototype.callee is not allowed in ES5 Strict mode.'
```

```
 'The JavaScript compiler will also check this when '
```

```
 'CHECK_ES5_STRICT is enabled, but this conformance check also '
```

```
 'warns for possible violations.'
```

```
 value: 'Arguments.prototype.callee'
```

```
 whitelist: 'javascript/closure/base.js' # goog.base uses arguments.callee
```

```
 whitelist: 'javascript/closure/debug/' # legacy stack trace support, etc
```

```
}

requirement: {
 type: BANNED_PROPERTY_WRITE
 error_message: 'Assignment to Element.prototype.innerHTML is not allowed '
 'since passing unsafe content can cause XSS vulnerabilities.'
 'Use goog.dom.safe.setInnerHTML instead.'

 value: 'Element.prototype.innerHTML'

 # Safe wrapper for this property.
 whitelist: 'javascript/closure/dom/safe.js'

 # Safely used in goog.string.unescapeEntitiesUsingDom_; the string assigned to
 # innerHTML is a single HTML entity.
 whitelist: 'javascript/closure/string/string.js'
}
```

```
requirement: {
 type: BANNED_PROPERTY_WRITE
 error_message: 'Assignment to Element.prototype.outerHTML is not allowed '
 'since passing unsafe content can cause XSS vulnerabilities.'
 'Use goog.dom.safe.setOuterHtml instead.'

 value: 'Element.prototype.outerHTML'

 # Safe wrapper for this property.
 whitelist: 'javascript/closure/dom/safe.js'
}
```

```
requirement: {
 type: BANNED_PROPERTY_WRITE
 error_message: 'Assignment to Location.prototype.href is not allowed. '
 'Externally controlled content assigned to the href property '
 'can cause XSS vulnerabilities, such as executing '
 'javascript:evil() URLs. Use goog.dom.safe.setLocationHref '
 'instead.'

 value: 'Location.prototype.href'

 # Safe wrapper for this property.
 whitelist: 'javascript/closure/dom/safe.js'
}
```

```
requirement: {
 type: BANNED_PROPERTY_WRITE
 error_message: 'Assignment to Window.prototype.location is not allowed.'
 'Externally controlled content assigned to the location '
```

```
'object can cause XSS vulnerabilities, such as executing '
'javascript:evil() URLs. Use goog.dom.safe.setLocationHref '
'instead.'
```

```
value: 'Window.prototype.location'
}
```

```
requirement: {
 type: BANNED_PROPERTY_WRITE
 error_message: 'Assignment to .href property of Anchor, Link, etc elements, '
 'is not allowed. Externally controlled content assigned '
 'to the href property can cause XSS vulnerabilities, such as '
 'executing javascript:evil() URLs. '
 'Use goog.dom.safe.setAnchorHref instead.'
```

```
Types with .href properties that do not extend from Element.
value: 'StyleSheet.prototype.href'
value: 'CSSImportRule.prototype.href'
```

```
All other types extend from Element.
value: 'Element.prototype.href'
```

```
Safe wrapper for this property.
whitelist: 'javascript/closure/dom/safe.js'
}
```

```
requirement: {
 type: BANNED_PROPERTY_WRITE
 error_message: 'Use of document.domain is not allowed since it relaxes the '
 'the same origin protections of JavaScript and opens up the '
 'attack surface for the domain.'

 value: 'Document.prototype.domain'
}
```

Found in path(s):

```
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/example_conformance_proto.textproto
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```

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/StaticRef.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/StaticTypedRef.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/StaticSymbolTable.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/SimpleSourceFile.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/testing/AbstractStaticScope.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/StaticSourceFile.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/testing/MapBasedScope.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/NameSpaceType.java



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```
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jar/com/google/javascript/rhino/testing/Asserts.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/rhino/jstype/SimpleReference.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/rhino/jstype/PropertyMap.java
```

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/Property.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/rhino/jstype/EquivalenceMethod.java  
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```

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```
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/SourceFile.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/MakeDeclaredNamesUnique.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/PassFactory.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/StrictModeCheck.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/OptimizeArgumentsArray.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/PropertyRenamingPolicy.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/debugging/sourcemap/SourceMapping.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/OptimizeReturns.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/CompilerInput.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/PassConfig.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/testing/SimpleSourceExcerptProvider.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/CompilationLevel.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/parsing/JsDocToken.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
jar/com/google/javascript/jscomp/CheckLevelLegacy.java
* /opt/cola/permits/1685982639_1684869203.891982/0/closure-compiler-v20180204-sources-
```

jar/com/google/javascript/jscomp/RhinoErrorReporter.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/debugging/sourcemap/SourceMapConsumer.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/ParserRunner.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/MarkNoSideEffectCalls.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CoverageUtil.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/GatherSideEffectSubexpressionsCallback.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/DevirtualizePrototypeMethods.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/debugging/sourcemap/SourceMapGeneratorFactory.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/Config.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/web/service/common/AbstractWebServiceException.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/SyntheticAst.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/GatherRawExports.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/JsAst.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/PhaseOptimizer.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/SourceAst.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/TypeInferencePass.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CustomPassExecutionTime.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/debugging/sourcemap/FilePosition.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/ObjectPropertyStringPostprocess.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/NodeIterators.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CodeChangeHandler.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/ExternExportsPass.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/debugging/sourcemap/SourceMapGenerator.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/deps/DependencyResolver.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-

jar/com/google/debugging/sourcemap/SourceMapParseException.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/UseSite.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/InferJSDocInfo.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/FunctionToBlockMutator.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/PureFunctionIdentifier.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/MemoizedTypedScopeCreator.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CoverageInstrumentationPass.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CheckMissingGetCssName.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CssRenamingMap.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/DefaultPassConfig.java  
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jar/com/google/javascript/jscomp/WarningLevel.java  
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jar/com/google/javascript/jscomp/CommandLineRunner.java  
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- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/client/JsfileParser.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/MemberVariableTree.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/RemoveUnusedPolyfills.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/InterfaceDeclarationTree.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/TypeAliasTree.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/ReplaceMessagesForChrome.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/util/regex/Matcher.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TagNameToType.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/Instrumentation.java
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- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/nio/file/Path.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Es6RewriteDestructuring.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/testing/NodeSubject.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/FunctionInfo.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/CheckConformance.java



\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ClosureCheckModule.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/LintPassConfig.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/NamespaceDeclarationTree.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TypedScope.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/deps/ClosureBundler.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/lint/CheckJSDocStyle.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/Es6TypedToEs6Converter.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/GenericTypeListTree.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/deps/JsFileParser.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/lang/Runtime.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/lang/StackOverflowError.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/OptionalParameterTree.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/debugger/gwt/DebuggerGwtMain.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/FunctionTypeTree.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/newtypes/Declaration.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/CallSignatureTree.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/IdMappingUtil.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/CheckMissingGetCssName.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CheckUnusedPrivateProperties.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/ConformanceConfig.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/BlackHoleErrorManager.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/text/MessageFormat.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CompilerExecutor.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/gwt/super/java/util/regex/Pattern.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/parsing/parser/trees/ArrayTypeTree.java

\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/resources/super-gwt/com/google/javascript/jscomp/resources/ResourceLoader.java

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\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/FeatureSet.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/trees/TypeQueryTree.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/util.js  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/RandomNameGenerator.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/OutputCharsetEncoder.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/trees/IndexSignatureTree.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/common/io/Files.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/ReplaceMessages.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-

jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/deps/DependencyFile.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/deps/Es6SortedDependencies.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/Linter.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/FunctionInformationMap.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/client/Util.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/InlineAliases.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/trees/AmbientDeclarationTree.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/CompilerExecutor.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/Es6RenameReferences.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/trees/NamespaceNameTree.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/CheckJSDoc.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/newtypes/PersistentMap.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/resources/ResourceLoader.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/trees/TypedParameterTree.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/gwt/super/com/google/javascript/jscomp/Requirement.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/lint/CheckRequiresAndProvidesSorted.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/parsing/parser/trees/ComputedPropertyMemberVariableTree.java  
\* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-  
jar/com/google/javascript/jscomp/TypeMatchingStrategy.java  
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- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/deps/DefaultDependencyResolver.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ProcessClosurePrimitives.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/JsMessage.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/TypeCheck.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/XtbMessageBundle.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CheckSideEffects.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/SyntacticScopeCreator.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CollapseVariableDeclarations.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ExploitAssigns.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/ScopeCreator.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/AnalyzePrototypeProperties.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/GlobalNamespace.java
- \* /opt/cola/permits/1685982639\_1684869203.891982/0/closure-compiler-v20180204-sources-jar/com/google/javascript/jscomp/CollapseProperties.java

## 1.63 apache-commons-beanutils 1.8.3

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\* /opt/cola/permits/1474112832\_1668526993.4060051/0/protobuf-java-2-5-0-11-jar/META-INF/maven/com.google.protobuf/protobuf-java/pom.xml

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Manifest-Version: 1.0

Bnd-LastModified: 1362700108682

Build-Jdk: 1.7.0-google-v5

Built-By: xiaofeng

Bundle-Description: Protocol Buffers are a way of encoding structured data in an efficient yet extensible format.

Bundle-DocURL: <http://code.google.com/p/protobuf>

Bundle-License: <http://www.opensource.org/licenses/bsd-license.php>

Bundle-ManifestVersion: 2

Bundle-Name: Protocol Buffer Java API

Bundle-SymbolicName: com.google.protobuf

Bundle-Vendor: Google

Bundle-Version: 2.5.0

Created-By: Apache Maven Bundle Plugin

Export-Package: com.google.protobuf;version="2.5.0"

Tool: Bnd-1.50.0

Found in path(s):

\* /opt/cola/permits/1474112832\_1668526993.4060051/0/protobuf-java-2-5-0-11-jar/META-INF/MANIFEST.MF

# 1.67 logkit 1.0.1

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## 1.68 jakarta-oro 2.0.8

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\* \$Id: AwkCompiler.java,v 1.10 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: NegativeCharacterClassNode.java,v 1.7 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: MatchActionProcessor.java,v 1.10 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: GlobFilenameFilter.java,v 1.7 2003/11/07 20:16:23 dfs Exp \$

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\* \$Id: Perl5Debug.java,v 1.11 2003/11/07 20:16:25 dfs Exp \$

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\* \$Id: EpsilonNode.java,v 1.7 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: AwkStreamInput.java,v 1.7 2003/11/07 20:16:24 dfs Exp \$

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\* /opt/cola/permits/1330679780\_1653003181.5396817/0/jakarta-oro-2-0-8-sources-jar/org/apache/oro/text/awk/AwkStreamInput.java

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\* \$Id: SyntaxNode.java,v 1.7 2003/11/07 20:16:24 dfs Exp \$

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jar/org/apache/oro/text/awk/SyntaxNode.java

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\* \$Id: AwkMatcher.java,v 1.11 2003/11/07 20:16:24 dfs Exp \$

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/\*\*

\* Determines if the contents of a `PatternMatcherInput`, starting from the  
\* current offset of the input contains a pattern.  
\* If a pattern match is found, a `MatchResult`  
\* instance representing the `<b>first</b>` such match is made accessible via  
\* `{@link #getMatch()}`. The current offset of the  
\* `PatternMatcherInput` is set to the offset corresponding to the end  
\* of the match, so that a subsequent call to this method will continue  
\* searching where the last call left off. You should remember that the  
\* region between the begin and end offsets of the `PatternMatcherInput` are  
\* considered the input to be searched, and that the current offset  
\* of the `PatternMatcherInput` reflects where a search will start from.  
\* Matches extending beyond the end offset of the `PatternMatcherInput`  
\* will not be matched. In other words, a match must occur entirely  
\* between the begin and end offsets of the input. See  
\* `{@link org.apache.oro.text.regex.PatternMatcherInput PatternMatcherInput}`  
\* for more details.

\* `<p>`

\* As a side effect, if a match is found, the `PatternMatcherInput` match  
\* offset information is updated. See the `PatternMatcherInput`

```

* { @link org.apache.oro.text.regex.PatternMatcherInput#setMatchOffsets
* setMatchOffsets(int, int) } method for more details.
* <p>
* The pattern must be an AwkPattern instance, otherwise a
* ClassCastException will be thrown. You are not required to, and
* indeed should NOT try to (for performance reasons), catch a
* ClassCastException because it will never be thrown as long as you use
* an AwkPattern as the pattern parameter.
* <p>
* This method is usually used in a loop as follows:
* <blockquote><pre>
* PatternMatcher matcher;
* PatternCompiler compiler;
* Pattern pattern;
* PatternMatcherInput input;
* MatchResult result;
*
* compiler = new AwkCompiler();
* matcher = new AwkMatcher();
*
* try {
* pattern = compiler.compile(somePatternString);
* } catch(MalformedPatternException e) {
* System.err.println("Bad pattern.");
* System.err.println(e.getMessage());
* return;
* }
*
* input = new PatternMatcherInput(someStringInput);
*
* while(matcher.contains(input, pattern)) {
* result = matcher.getMatch();
* // Perform whatever processing on the result you want.
* }
*
* </pre></blockquote>
* <p>
* @param input The PatternMatcherInput to test for a match.
* @param pattern The Pattern to be matched.
* @return True if the input contains a pattern match, false otherwise.
* @exception ClassCastException If a Pattern instance other than an
* AwkPattern is passed as the pattern parameter.
*/

```

Found in path(s):

```

* /opt/cola/permits/1330679780_1653003181.5396817/0/jakarta-oro-2-0-8-sources-
jar/org/apache/oro/text/awk/AwkMatcher.java

```



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/*
 * $Id: AwkFilenameFilter.java,v 1.7 2003/11/07 20:16:23 dfs Exp $
 *
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jar/org/apache/oro/io/awk/FileNameFilter.java

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\* \$Id: CacheLRU.java,v 1.10 2003/11/07 20:16:25 dfs Exp \$

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 jar/org/apache/oro/util/CacheLRU.java

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 \* \$Id: TokenNode.java,v 1.7 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: PlusNode.java,v 1.7 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: Perl5Pattern.java,v 1.8 2003/11/07 20:16:25 dfs Exp \$

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jar/org/apache/oro/util/CacheRandom.java

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\* \$Id: CharStringPointer.java,v 1.7 2003/11/07 20:16:25 dfs Exp \$

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jar/org/apache/oro/text/regex/Pattern.java
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\* \$Id: AwkMatchResult.java,v 1.8 2003/11/07 20:16:24 dfs Exp \$

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\* \$Id: StringSubstitution.java,v 1.8 2003/11/07 20:16:25 dfs Exp \$

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\* \$Id: RegexFilenameFilter.java,v 1.9 2003/11/07 20:16:23 dfs Exp \$

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\* \$Id: Perl5FilenameFilter.java,v 1.7 2003/11/07 20:16:23 dfs Exp \$

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jar/org/apache/oro/text/PatternCache.java

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\* \$Id: Perl5Matcher.java,v 1.27 2003/11/07 20:16:25 dfs Exp \$

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 jar/org/apache/oro/text/regex/MatchResult.java

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## 1.69 selenium 3.3.1

### 1.69.1 Available under license :

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Metadata-Version: 1.1

Name: selenium

Version: 3.3.1

Summary: Python bindings for Selenium

Home-page: <https://github.com/SeleniumHQ/selenium/>

Author: UNKNOWN

Author-email: UNKNOWN

License: Apache 2.0

Description: =====

Selenium Client Driver

=====

Introduction

=====

Python language bindings for Selenium WebDriver.

The `selenium` package is used to automate web browser interaction from Python.

+-----+-----+-----+-----+-----+-----+-----+-----+-----+

| **\*\*Home\*\***: | <http://www.seleniumhq.org> |

|             |                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Docs</b> | selenium package API < <a href="https://seleniumhq.github.io/selenium/docs/api/py/api.html">https://seleniumhq.github.io/selenium/docs/api/py/api.html</a> >`_ |
| <b>Dev</b>  | <a href="https://github.com/SeleniumHQ/Selenium">https://github.com/SeleniumHQ/Selenium</a>                                                                    |
| <b>PyPI</b> | <a href="https://pypi.python.org/pypi/selenium">https://pypi.python.org/pypi/selenium</a>                                                                      |
| <b>IRC</b>  | <b>#selenium</b> channel on freenode                                                                                                                           |

Several browsers/drivers are supported (Firefox, Chrome, Internet Explorer, PhantomJS), as well as the Remote protocol.

### Supported Python Versions

=====

- \* Python 2.6, 2.7
- \* Python 3.3+

### Installing

=====

If you have `pip` <<https://pip.pypa.io/>>`\_ on your system, you can simply install or upgrade the Python bindings::

```
pip install -U selenium
```

Alternately, you can download the source distribution from `PyPI` <<http://pypi.python.org/pypi/selenium>>`\_ (e.g. selenium-3.3.1.tar.gz), unarchive it, and run::

```
python setup.py install
```

Note: both of the methods described above install `selenium` as a system-wide package. That will require administrative/root access to their machine. You may consider using a `virtualenv` <<http://www.virtualenv.org/>>`\_ to create isolated Python environments instead.

### Drivers

=====

Selenium requires a driver to interface with the chosen browser. Firefox, for example, requires `geckodriver` <<https://github.com/mozilla/geckodriver/releases>>`, which needs to be installed before the below examples can be run. Make sure it's in your `PATH`, e. g., place it in `/usr/bin` or `/usr/local/bin`.

Failure to observe this step will give you an error `selenium.common.exceptions.WebDriverException: Message: 'geckodriver' executable needs to be in PATH.`

Other supported browsers will have their own drivers available. Links to some of the more popular browser

drivers follow.

```
+-----+-----+
| **Chrome**: | https://sites.google.com/a/chromium.org/chromedriver/downloads |
+-----+-----+
| **Edge**: | https://developer.microsoft.com/en-us/microsoft-edge/tools/webdriver/ |
+-----+-----+
| **Firefox**: | https://github.com/mozilla/geckodriver/releases |
+-----+-----+
| **Safari**: | https://webkit.org/blog/6900/webdriver-support-in-safari-10/ |
+-----+-----+
```

Example 0:

```
=====
```

- \* open a new Firefox browser
- \* load the page at the given URL

```
::
```

```
from selenium import webdriver

browser = webdriver.Firefox()
browser.get('http://seleniumhq.org/')
```

Example 1:

```
=====
```

- \* open a new Firefox browser
- \* load the Yahoo homepage
- \* search for "seleniumhq"
- \* close the browser

```
::
```

```
from selenium import webdriver
from selenium.webdriver.common.keys import Keys

browser = webdriver.Firefox()

browser.get('http://www.yahoo.com')
assert 'Yahoo!' in browser.title

elem = browser.find_element_by_name('p') # Find the search box
elem.send_keys('seleniumhq' + Keys.RETURN)

browser.quit()
```

Example 2:

=====

Selenium WebDriver is often used as a basis for testing web applications. Here is a simple example using Python's standard `unittest` [library](http://docs.python.org/3/library/unittest.html):

::

```
import unittest

class GoogleTestCase(unittest.TestCase):

 def setUp(self):
 self.browser = webdriver.Firefox()
 self.addCleanup(self.browser.quit)

 def testPageTitle(self):
 self.browser.get('http://www.google.com')
 self.assertIn('Google', self.browser.title)

if __name__ == '__main__':
 unittest.main(verbosity=2)
```

Selenium Server (optional)

=====

For normal WebDriver scripts (non-Remote), the Java server is not needed.

However, to use Selenium WebDriver Remote or the legacy Selenium API (Selenium-RC), you need to also run the Selenium server. The server requires a Java Runtime Environment (JRE).

Download the server separately, from: <http://selenium-release.storage.googleapis.com/3.3/selenium-server-standalone-3.3.1.jar>

Run the server from the command line::

```
java -jar selenium-server-standalone-3.3.1.jar
```

Then run your Python client scripts.

Use The Source Luke!

=====

View source code online:

```
+-----+-----+
| official: | https://github.com/SeleniumHQ/selenium/tree/master/py |
+-----+-----+
```

Platform: UNKNOWN  
Classifier: Development Status :: 5 - Production/Stable  
Classifier: Intended Audience :: Developers  
Classifier: License :: OSI Approved :: Apache Software License  
Classifier: Operating System :: POSIX  
Classifier: Operating System :: Microsoft :: Windows  
Classifier: Operating System :: MacOS :: MacOS X  
Classifier: Topic :: Software Development :: Testing  
Classifier: Topic :: Software Development :: Libraries  
Classifier: Programming Language :: Python  
Classifier: Programming Language :: Python :: 2.6  
Classifier: Programming Language :: Python :: 2.7  
Classifier: Programming Language :: Python :: 3.3  
Classifier: Programming Language :: Python :: 3.4  
Classifier: Programming Language :: Python :: 3.5  
Classifier: Programming Language :: Python :: 3.6

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\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/utils.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/abstract\_event\_listener.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-



3.3.1/selenium/webdriver/chrome/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/by.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/safari/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/switch\_to.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/input\_device.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/\_\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/chrome/options.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/file\_detector.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/alert.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/key\_actions.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/ie/\_\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/webelement.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/edge/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/desired\_capabilities.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/expected\_conditions.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/events.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/proxy.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/select.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/webelement.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/mobile.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/chrome/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/blackberry/\_\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/keys.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/opera/\_\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-

3.3.1/selenium/webdriver/support/event\_firing\_webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/pointer\_input.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/options.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/phantomjs/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/chrome/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/html5/application\_cache.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/edge/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/key\_input.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/utils.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/action\_builder.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/opera/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/setup.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/common/exceptions.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/blackberry/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/android/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/safari/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/edge/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/color.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/action\_chains.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/phantomjs/webdriver.py

\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/phantomjs/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/android/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/common/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/extension\_connection.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/errorhandler.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/opera/options.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/interaction.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/remote\_connection.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/touch\_actions.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/actions/pointer\_actions.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/wait.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/ie/service.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/support/ui.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/firefox\_binary.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/firefox/firefox\_profile.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/ie/webdriver.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/edge/options.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/chrome/remote\_connection.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/common/html5/\_\_init\_\_.py  
\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/safari/\_\_init\_\_.py  
No license file was found, but licenses were detected in source scan.

/\*

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\*/

Found in path(s):

\* /opt/cola/permits/1685982331\_1684869208.2362442/0/selenium-3-3-1-tar-gz/selenium-3.3.1/selenium/webdriver/remote/isDisplayed.js

## 1.70 jackson-annotations 2.9.5

### 1.70.1 Available under license :

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## 1.71 htmlunit-driver 2.24

### 1.71.1 Available under license :

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```
// to you under the Apache License, Version 2.0 (the
// "License"); you may not use this file except in compliance
// with the License. You may obtain a copy of the License at
```

```
// http://www.apache.org/licenses/LICENSE-2.0
// software distributed under the License is distributed on an
```

Found in path(s):

```
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlUnitKeyboard.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlUnitDriver.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlUnitKeyboardMapping.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlUnitWebElement.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/AsyncScriptExecutor.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlSerializer.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlUnitAlert.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/KeyboardModifiersState.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/HtmlUnitMouse.java
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-
jar/org/openqa/selenium/htmlunit/InputKeysContainer.java
```

No license file was found, but licenses were detected in source scan.

```
<url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
```

Found in path(s):

```
* /opt/cola/permits/1685982181_1684869185.148917/0/htmlunit-driver-2-24-sources-jar/META-
INF/maven/org.seleniumhq.selenium/htmlunit-driver/pom.xml
```

## 1.72 antlr 3.1.3

### 1.72.1 Available under license :

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```
/*
```

```
[The "BSD licence"]
```

```
Copyright (c) 2005-2006 Terence Parr
```

```
All rights reserved.
```

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\*/

group Java implements ANTLRCore;

javaTypeInitMap ::= [

```
"int": "0",
"long": "0",
"float": "0.0f",
"double": "0.0",
"boolean": "false",
"byte": "0",
"short": "0",
"char": "0",
default: "null" // anything other than an atomic type
```

]

/\*\* The overall file structure of a recognizer; stores methods for rules  
\* and cyclic DFAs plus support code.

\*/

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals) ::=
```

<<

```
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
<actions.(actionScope).header>
```

<@imports>

```
import org.antlr.runtime.*;
```

```
<if(TREE_PARSER)>
```

```

import org.antlr.runtime.tree.*;
<endif>
import java.util.Stack;
import java.util.List;
import java.util.ArrayList;
<if(backtracking)>
import java.util.Map;
import java.util.HashMap;
<endif>
<@end>

<docComment>
<recognizer>
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
 filterMode, superClass="Lexer") ::= <<
public class <grammar.recognizerName> extends <@superClassName><superClass><@end> {
 <tokens:{public static final int <it.name>=<it.type>;}; separator="\n">
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
 <actions.lexer.members>

 // delegates
 <grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 // delegators
 <grammar.delegators:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 <last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

 public <grammar.recognizerName>() {;} <! needed by subclasses !>
 public <grammar.recognizerName>(CharStream input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>}>)} {
 this(input, new RecognizerSharedState()<grammar.delegators:{g|, <g.delegateName()>}>);
 }
 public <grammar.recognizerName>(CharStream input, RecognizerSharedState state<grammar.delegators:{g|,
<g.recognizerName> <g.delegateName()>}>)} {
 super(input,state);
 <if(memoize)>
 <if(grammar.grammarIsRoot)>
 state.ruleMemo = new HashMap[<numRules>+1];<\n> <! index from 1..n !>
 <endif>
 <endif>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|,
<p.delegateName()>}>, this);}; separator="\n">
 <grammar.delegators:
 {g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">

```

```

 <last(grammar.delegators):{g|gParent = <g:delegateName(>};}>
 }
 public String getGrammarFileName() { return "<fileName>"; }

<if(filterMode)>
 <filteringNextToken(>
<endif>
 <rules; separator="\n\n">

 <synpreds:{p | <lexerSynpred(p)>}>

 <cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this);}; separator="\n">
 <cyclicDFAs:cyclicDFA(> <! dump tables for all DFA !>

}
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
public Token nextToken() {
 while (true) {
 if (input.LA(1)==CharStream.EOF) {
 return Token.EOF_TOKEN;
 }
 state.token = null;
state.channel = Token.DEFAULT_CHANNEL;
 state.tokenStartCharIndex = input.index();
 state.tokenStartCharPositionInLine = input.getCharPositionInLine();
 state.tokenStartLine = input.getLine();
state.text = null;
 try {
 int m = input.mark();
 state.backtracking=1; <! means we won't throw slow exception !>
 state.failed=false;
 mTokens();
 state.backtracking=0;
 <! mTokens backtracks with synpred at backtracking==2
 and we set the synpredgate to allow actions at level 1. !>
 if (state.failed) {
 input.rewind(m);
 input.consume(); <! advance one char and try again !>
 }
 }
 }
}

```



```

 else {
 emit();
 return state.token;
 }
 }
 catch (RecognitionException re) {
 // shouldn't happen in backtracking mode, but...
 reportError(re);
 recover(re);
 }
}
}

public void memoize(IntStream input,
 int ruleIndex,
 int ruleStartIndex)
{
 if (state.backtracking>1) super.memoize(input, ruleIndex, ruleStartIndex);
}

public boolean alreadyParsedRule(IntStream input, int ruleIndex) {
 if (state.backtracking>1) return super.alreadyParsedRule(input, ruleIndex);
 return false;
}
>>

actionGate() ::= "state.backtracking==0"

filteringActionGate() ::= "state.backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass,
 ASTLabelType="Object", labelType, members, rewriteElementType,
 filterMode) ::= <<
public class <grammar.recognizerName> extends <@superClassName><superClass><@end> {
<if(grammar.grammarIsRoot)>
 public static final String[] tokenNames = new String[] {
 "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
 };<\n>
<endif>
 <tokens:{public static final int <it.name>=<it.type>;}; separator="\n">

 // delegates
 <grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 // delegators
 <grammar.delegators:

```

```

 {g|public <g.recognizerName> <g.delegateName()>; separator="\n">
<last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
public <grammar.recognizerName>(<inputStreamType> input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>}>) {
 this(input, new RecognizerSharedState(<grammar.delegators:{g|, <g.delegateName()>}>);
}
public <grammar.recognizerName>(<inputStreamType> input, RecognizerSharedState
state<grammar.delegators:{g|, <g.recognizerName> <g.delegateName()>}>) {
 super(input, state);
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|,
<p.delegateName()>}>, this);}; separator="\n">
 <grammar.indirectDelegates:{g | <g.delegateName()> = <g.delegateator.delegateName()>.<g.delegateName()>;};
separator="\n">
 <last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
 }
<@end>

public String[] getTokenNames() { return <grammar.composite.rootGrammar.recognizerName>.tokenNames; }
public String getGrammarFileName() { return "<fileName>"; }

<members>

<rules; separator="\n\n">

<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
// Delegated rules
<grammar.delegatedRules:{ruleDescriptor|
 public <returnType()> <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
throws RecognitionException \{ <if(ruleDescriptor.hasReturnValue)>return
<endif><ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes:
{a|<a.name>}>; separator=", ">); \}}; separator="\n">

<synpreds:{p | <synpred(p)>}>

<cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this);}; separator="\n">
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
words64=it.bits)>
}

```

>>

```
parserCtorBody() ::= <<
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo = new HashMap[<length(grammar.allImportedRules)>+1];<\n> <! index from 1..n !>
<endif>
<endif>
<grammar.delegators:
{g|this.<g:delegateName()> = <g:delegateName()>;} separator="\n">
>>
```

```
parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
 ASTLabelType="Object", superClass="Parser", labelType="Token",
 members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="TokenStream", rewriteElementType="Token", ...)>
>>
```

/\*\* How to generate a tree parser; same as parser except the input

\* stream is a different type.

\*/

```
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
 numRules, bitsets, labelType={<ASTLabelType>}, ASTLabelType="Object",
superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif>},
members={<actions.treeparser.members>},
 filterMode) ::= <<
<genericParser(inputStreamType="TreeNodeStream", rewriteElementType="Node", ...)>
>>
```

/\*\* A simpler version of a rule template that is specific to the imaginary

\* rules created for syntactic predicates. As they never have return values

\* nor parameters etc..., just give simplest possible method. Don't do

\* any of the normal memoization stuff in here either; it's a waste.

\* As predicates cannot be inlined into the invoking rule, they need to

\* be in a rule by themselves.

\*/

```
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
```

```
<<
```

```
// $ANTLR start <ruleName>
```

```
public final void <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) throws
```

```
RecognitionException {
```

```
 <ruleLabelDefs()>
```

```
<if(trace)>
```

```
 traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
```

```
 try {
```

```
 <block>
```

```
 }
```

```
 finally {
```

```

 traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
 }
<else>
 <block>
<endif>
}
// $ANTLR end <ruleName>
>>

synpred(name) ::= <<
public final boolean <name>() {
 state.backtracking++;
 <@start()>
 int start = input.mark();
 try {
 <name>_fragment(); // can never throw exception
 } catch (RecognitionException re) {
 System.err.println("impossible: "+re);
 }
 boolean success = !state.failed;
 input.rewind(start);
 <@stop()>
 state.backtracking--;
 state.failed=false;
 return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if (state.backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index>)) { return <ruleReturnValue()>; }
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (state.failed) return <ruleReturnValue()>;<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking>0) { state.failed=true; return <ruleReturnValue()>;}<endif>
>>

```

```

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
// <fileName>:<description>
public final <returnType()> <ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) throws
RecognitionException {
 <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleDescriptor.actions.init>
 <@preamble()>
 try {
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>
 }
 <if(exceptions)>
 <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n}>>
 <else>
 <if(!emptyRule)>
 <if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
 <else>
 catch (RecognitionException re) {
 reportError(re);
 recover(input,re);
 <@setErrorReturnValue()>
 }<\n>
 <endif>
 <endif>
 <endif>
 finally {
 <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
 }
 <@postamble()>
 return <ruleReturnValue()>;
}
// $ANTLR end "<ruleName>"

```

>>

```
catch(decl,action) ::= <<
catch (<e.decl>) {
 <e.action>
}
>>
```

```
ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> retval = new <returnType()>();
retval.start = input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.index();
<endif>
>>
```

```
ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.push(new <it>_scope());}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.push(new <it.name>_scope());}; separator="\n">
>>
```

```
ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.pop();}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.pop();}; separator="\n">
>>
```

```
ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {<labelType> <it.label.text>=null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: {List list_<it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: {ll<ll:ruleLabelDef(label=it)> <ll.label.text> = null;}; separator="\n">
>>
```

```
lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
```

```

 :{<labelType> <it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.charLabels:{int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
:{List list_<it.label.text>=null;}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
>>

ruleCleanUp() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop = input.LT(-1);<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking>0) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
public final void m<ruleName>(<ruleDescriptor.parameterScope;parameterScope(scope=it)>) throws
RecognitionException {
 <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 try {

```

```

<if(nakedBlock)>
 <ruleMemoization(name=ruleName)>
 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block><\n>
<else>
 int _type = <ruleName>;
 int _channel = DEFAULT_TOKEN_CHANNEL;
 <ruleMemoization(name=ruleName)>
 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block>
 <ruleCleanUp()>
 state.type = _type;
 state.channel = _channel;
 <(ruleDescriptor.actions.after):execAction()>
<endif>
 }
 finally {
 <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeCleanUp()>
 <memoize()>
 }
}
// $ANTLR end "<ruleName>"
>>

```

```

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */

```

```

tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
public void mTokens() throws RecognitionException {
 <block><\n>
}
>>

```

```

// S U B R U L E S

```

```

/** A (...) subrule with multiple alternatives */

```

```

block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>) {

```



```

 <alts:altSwitchCase()>
 }
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int cnt<decisionNumber>=0;
<decls>
<@preloop()>
loop<decisionNumber>:
do {
 int alt<decisionNumber>=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
}

```

```

switch (alt<decisionNumber>) {
<alts:altSwitchCase()>
default :
 if (cnt<decisionNumber> >= 1) break loop<decisionNumber>;
 <ruleBacktrackFailure()>
 EarlyExitException eee =
 new EarlyExitException(<decisionNumber>, input);
 <@earlyExitException()>
 throw eee;
}
cnt<decisionNumber>++;
} while (true);
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

*/\*\* A (..)\* block with 1 or more alternatives \*/*

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=

<<

// <fileName>:<description>

<decls>

<@preloop()>

loop<decisionNumber>:

do {

int alt<decisionNumber>=<maxAlt>;

<@predecision()>

<decision>

<@postdecision()>

switch (alt<decisionNumber>) {

<alts:altSwitchCase()>

default :

break loop<decisionNumber>;

}

} while (true);

<@postloop()>

>>

closureBlockSingleAlt ::= closureBlock

*/\*\* Optional blocks (x)? are translated to (x|) by before code generation*

*\* so we can just use the normal block template*

*\*/*

optionalBlock ::= block

optionalBlockSingleAlt ::= block

*/\*\* A case in a switch that jumps to an alternative given the alternative*

```

* number. A DFA predicts the alternative and then a simple switch
* does the jump to the code that actually matches that alternative.
*/
altSwitchCase() ::= <<
case <i> :
 <@prealt(>
 <it>
 break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
<@declarations(>
<elements:element(>
<rew>
<@cleanup(>
}
>>

/** What to emit when there is no rewrite. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch(>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label>=<(<labelType>)<endif>match(input,<token>,FOLLOW_<token>_in_<ruleName><elementIndex
>); <checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new ArrayList();

```

```

list_<label>.add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
match(<char>); <checkRuleBacktrackFailure()>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
matchRange(<a>,); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>
<else>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
<endif>
if (<s>) {
 input.consume();
 <postmatchCode>
<if(!LEXER)>
 state.errorRecovery=false;
<endif>
 <if(backtracking)>state.failed=false;<endif>
}
else {
 <ruleBacktrackFailure()>
 MismatchedSetException mse = new MismatchedSetException(null,input);
 <@mismatchedSetException()>
<if(LEXER)>
 recover(mse);
 throw mse;
<else>
 throw mse;
 <! use following code to make it recover inline; remove throw mse;
 recoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
 !>

```

```

<endif>
}<\n>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
int <label>Start = getCharIndex();
match(<string>); <checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start, getCharIndex()-1);
<else>
match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

wildcard(label,elementIndex) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
matchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
matchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
pushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope:delegateName()>.<endif><rule.name>(<args; separator=",">);<n>
state._fsp--;
<checkRuleBacktrackFailure()>
>>

```

```

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();
<if(scope)><scope:delegateName()>.<endif>m<rule.name>(<args; separator=",">);
<checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1);
<else>
<if(scope)><scope:delegateName()>.<endif>m<rule.name>(<args; separator=",">);
<checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();

```

```

match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, EOF, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1);
<else>
match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==Token.DOWN) {
 match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)) {
 <ruleBacktrackFailure()>
 throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
else {
<if(eotPredictsAlt)>
 alt<decisionNumber>=<eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 NoViableAltException nvae =
 new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>

```

```

 <@noViableAltException()>
 throw nvae;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
 alt<decisionNumber>=<eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>;"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) {
 <targetState>
}
>>

```



```

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
 alt<decisionNumber>=<eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 NoViableAltException nvae =
 new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <@noViableAltException()>
 throw nvae;<\n>
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
 <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
 alt<decisionNumber>=<eotPredictsAlt>;
 break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{ case <it>:}; separator="\n">
{
 <targetState>
}
break;
>>

// C y c l i c D F A

```

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = dfa<decisionNumber>.predict(input);
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
 * Can't use hex as compiler translates them before compilation.
 * These strings are split into multiple, concatenated strings.
 * Java puts them back together at compile time thankfully.
 * Java cannot handle large static arrays, so we're stuck with this
 * encode/decode approach. See analysis and runtime DFA for
 * the encoding methods.
 */
cyclicDFA(dfa) ::= <<
static final String DFA<dfa.decisionNumber>_eotS =
 "<dfa.javaCompressedEOT; wrap=\""+\n \>";
static final String DFA<dfa.decisionNumber>_eofS =
 "<dfa.javaCompressedEOF; wrap=\""+\n \>";
static final String DFA<dfa.decisionNumber>_minS =
 "<dfa.javaCompressedMin; wrap=\""+\n \>";
static final String DFA<dfa.decisionNumber>_maxS =
 "<dfa.javaCompressedMax; wrap=\""+\n \>";
static final String DFA<dfa.decisionNumber>_acceptS =
 "<dfa.javaCompressedAccept; wrap=\""+\n \>";
static final String DFA<dfa.decisionNumber>_specialS =
 "<dfa.javaCompressedSpecial; wrap=\""+\n \>}>";
static final String[] DFA<dfa.decisionNumber>_transitionS = {
 <dfa.javaCompressedTransition:{s|<s; wrap=\""+\n\>"}; separator=",\n">
};

static final short[] DFA<dfa.decisionNumber>_eot =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_eotS);
static final short[] DFA<dfa.decisionNumber>_eof =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_eofS);
static final char[] DFA<dfa.decisionNumber>_min =
DFA.unpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
static final char[] DFA<dfa.decisionNumber>_max =
DFA.unpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
static final short[] DFA<dfa.decisionNumber>_accept =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
static final short[] DFA<dfa.decisionNumber>_special =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_specialS);
static final short[][] DFA<dfa.decisionNumber>_transition;

```

```

static {
 int numStates = DFA<dfa.decisionNumber>_transitionS.length;
 DFA<dfa.decisionNumber>_transition = new short[numStates][];
 for (int i=0; i<numStates; i++) {
 DFA<dfa.decisionNumber>_transition[i] =
DFA.unpackEncodedString(DFA<dfa.decisionNumber>_transitionS[i]);
 }
}

class DFA<dfa.decisionNumber> extends DFA {

 public DFA<dfa.decisionNumber>(BaseRecognizer recognizer) {
 this.recognizer = recognizer;
 this.decisionNumber = <dfa.decisionNumber>;
 this.eot = DFA<dfa.decisionNumber>_eot;
 this.eof = DFA<dfa.decisionNumber>_eof;
 this.min = DFA<dfa.decisionNumber>_min;
 this.max = DFA<dfa.decisionNumber>_max;
 this.accept = DFA<dfa.decisionNumber>_accept;
 this.special = DFA<dfa.decisionNumber>_special;
 this.transition = DFA<dfa.decisionNumber>_transition;
 }
 public String getDescription() {
 return "<dfa.description>";
 }
 <@errorMethod()>
 <if(dfa.specialStateSTs)>
 public int specialStateTransition(int s, IntStream _input) throws NoViableAltException {
 <if(LEXER)>
 IntStream input = _input;
 <endif>
 <if(PARSER)>
 TokenStream input = (TokenStream)_input;
 <endif>
 <if(TREE_PARSER)>
 TreeNodeStream input = (TreeNodeStream)_input;
 <endif>
 int _s = s;
 switch (s) {
 <dfa.specialStateSTs:{state |
 case <i0> : <! compressed special state numbers 0..n-1 !>
 <state>}; separator="\n">
 }
 <if(backtracking)>
 if (state.backtracking>0) {state.failed=true; return -1;}<\n>
 <endif>
 NoViableAltException nvae =
 new NoViableAltException(getDescription(), <dfa.decisionNumber>, _s, input);

```

```

 error(nvae);
 throw nvae;
 }<\n>
<endif>
}<\n>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
int index<decisionNumber>_<stateNumber> = input.index();
input.rewind();<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if (s>=0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) { s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands) ::= "<first(operands)><rest(operands):{o | ||<o}>>"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

```

```

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>==<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber>)\>=<lower> && LA<decisionNumber>_<stateNumber>\<=<upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(input.LA(<k>)\>=<lower>
&& input.LA(<k>)\<=<upper>)"

setTest(ranges) ::= "<ranges; separator=\\\"\\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
 <scope.attributes:{<it.decl>;}; separator="\\n">
}
protected Stack <scope.name>_stack = new Stack();<\\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
 <scope.attributes:{<it.decl>;}; separator="\\n">
}
protected Stack <scope.name>_stack = new Stack();<\\n>
<endif>
>>

returnStructName() ::= "<it.name>_return"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>

```

```

<else>
void
<endif>
<endif>
>>

/** Generate the Java type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.grammar.recognizerName>.<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public static class <ruleDescriptor:returnStructName()> extends
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope {
<scope.attributes:{public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>

```

```

};
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name>
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name> =<expr>;
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name> =<expr>;
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name> =<expr>;
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {<function.size()>0 && <function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?<scope>.<attr.name>:<initValue(attr.type)>)
<else>
<scope>
<endif>

```

```

>>

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>;
<else>
<attr.name> =<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>!=null?<scope>.getText():null"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>!=null?<scope>.getType():0"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>!=null?<scope>.getLine():0"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>!=null?<scope>.getCharPositionInLine():0"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>!=null?<scope>.getChannel():0"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>!=null?<scope>.getTokenIndex():0"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>!=null?Integer.valueOf(<scope>.getText():0)"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>!=null?((<labelType><scope>.start):null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>!=null?((<labelType><scope>.stop):null)"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>!=null?((<ASTLabelType><scope>.tree):null)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
<scope>!=null?(input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
input.getTreeAdaptor().getTokenStopIndex(<scope>.start))):null)
<else>
<scope>!=null?input.toString(<scope>.start,<scope>.stop):null)
<endif>
>>

```



```

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>!=null?<scope>.st:null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
 "<scope>!=null?<scope>.getType():0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::=
 "<scope>!=null?<scope>.getLine():0)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::=
 "<scope>!=null?<scope>.getCharPositionInLine():-1)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::=
 "<scope>!=null?<scope>.getChannel():0)"
lexerRuleLabelPropertyRef_index(scope,attr) ::=
 "<scope>!=null?<scope>.getTokenIndex():0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::=
 "<scope>!=null?<scope>.getText():null)"
lexerRuleLabelPropertyRef_int(scope,attr) ::=
 "<scope>!=null?Integer.valueOf(<scope>.getText()):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "(<labelType>)retval.start)"
rulePropertyRef_stop(scope,attr) ::= "(<labelType>)retval.stop)"
rulePropertyRef_tree(scope,attr) ::= "(<ASTLabelType>)retval.tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.getTokenStream().toString(
 input.getTreeAdaptor().getTokenStartIndex(retval.start),
 input.getTreeAdaptor().getTokenStopIndex(retval.start))
<else>
input.toString(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "getText()"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(getCharIndex()-1)"
lexerRulePropertyRef_int(scope,attr) ::= "Integer.valueOf(<scope>.getText())"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error

```

```

ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>";
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>";

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {
 <action>
}
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static final BitSet <name> = new BitSet(new long[] { <words64: { <it>L }; separator="," > }); <\n>
>>

codeFileExtension() ::= ".java"

true() ::= "true"
false() ::= "false"

Found in path(s):
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Java/Java.stg
No license file was found, but licenses were detected in source scan.

/*
[The "BSD licence"]
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```

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\*/

/\*\* Template overrides to add debugging to normal Python output;

\* If ASTs are built, then you'll also get ASTDbg.stg loaded.

\*/

group Dbg;

@outputFile.imports() ::= <<

<@super.imports(>

from antlr3.debug import \*

>>

@genericParser.args() ::= <<

debug\_socket = kwargs.pop('debug\_socket', None)

port = kwargs.pop('port', None)

>>

@genericParser.init() ::= <<

self.ruleLevel = 0

if self.\_dbg is None:

<createListenerAndHandshake(>

>>

createListenerAndHandshake() ::= <<

<if(TREE\_PARSER)>

proxy = DebugEventSocketProxy(self, adaptor=self.input.getTreeAdaptor(),

debug=debug\_socket, port=port)<\n>

<else>

proxy = DebugEventSocketProxy(self, debug=debug\_socket, port=port)<\n>

<endif>

self.setDebugListener(proxy)

proxy.handshake()

>>

@genericParser.members() ::= <<

```

<if(grammar.grammarIsRoot)>
ruleNames = [
 "invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">
]<\n>
<endif>
<if(grammar.grammarIsRoot)> <! grammar imports other grammar(s) !>
def getRuleLevel(self):
 return self.ruleLevel

def incRuleLevel(self):
 self.ruleLevel += 1

def decRuleLevel(self):
 self.ruleLevel -= 1

<if(profile)>
 <ctorForProfilingRootGrammar()>
<else>
 <ctorForRootGrammar()>
<endif>
<ctorForPredefinedListener()>
<else> <! imported grammar !>
def getRuleLevel(self):
 return <grammar.delegators:{g| <g.delegateName()>}>.getRuleLevel()

def incRuleLevel(self):
 <grammar.delegators:{g| <g.delegateName()>}>.incRuleLevel()

def decRuleLevel(self):
 <grammar.delegators:{g| <g.delegateName()>}>.decRuleLevel()

<ctorForDelegateGrammar()>
<endif>
<if(profile)>
 FIXME(2)
 public boolean alreadyParsedRule(IntStream input, int ruleIndex) {
 ((Profiler)self._dbg).examineRuleMemoization(input, ruleIndex,
 <grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 return super.alreadyParsedRule(input, ruleIndex);
 }<\n>
 FIXME(3)
 public void memoize(IntStream input,
 int ruleIndex,
 int ruleStartIndex)
 {
 ((Profiler)self._dbg).memoize(input, ruleIndex, ruleStartIndex,
 <grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 super.memoize(input, ruleIndex, ruleStartIndex);
 }

```

```

}<\n>
<endif>
def evalPredicate(self, result, predicate):
 self._dbg.semanticPredicate(result, predicate)
 return result
<\n>
>>

ctorForRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<! Same except we add port number and profile stuff if root grammar !>
<!
public <name><(inputStreamType> input) {
 this(input, DebugEventSocketProxy.DEFAULT_DEBUGGER_PORT, new RecognizerSharedState());
}
public <name><(inputStreamType> input, int port, RecognizerSharedState state) {
 super(input, state);
 <parserCtorBody()>
 <createListenerAndHandshake()>
 <grammar.directDelegates:{g|<g.delegateName()> = new <g.recognizerName>(input, self._dbg, this.state,
this<grammar.delegates:{g|, <g.delegateName()>}>)}>; separator="\n">
 <@finally()>
}<\n>
!>
>>

ctorForProfilingRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
public <name><(inputStreamType> input) {
 this(input, new Profiler(null), new RecognizerSharedState());
}
public <name><(inputStreamType> input, DebugEventListener self.dbg, RecognizerSharedState state) {
 super(input, self.dbg, state);
 Profiler p = (Profiler)self.dbg;
 p.setParser(this);
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, self.dbg, this.state, this<grammar.delegates:{g|,
<g.delegateName()>}>)}>; separator="\n">
 <@finally()>
}
<\n>
>>

/** Basically we don't want to set any dbg listeners are root will have it. */
ctorForDelegateGrammar() ::= <<
<!
public <name><(inputStreamType> input, DebugEventListener self.dbg, RecognizerSharedState

```

```

state<grammar.delegators:{g|,<g.recognizerName> <g.delegateName()>}> {
 super(input, dbg, state);
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, this, this.state<grammar.delegators:{g|,
<g.delegateName()>}>);}; separator="\n">
 }<\n>
 !>
 >>

ctorForPredefinedListener() ::= <<
<!
public <name>(<inputStreamType> input, DebugEventListener dbg) {
 <@superClassRef>super(input, dbg, new RecognizerSharedState());<@end>
 <if(profile)>
 Profiler p = (Profiler)dbg;
 p.setParser(this);
 <endif>
 <parserCtorBody()>
 <grammar.directDelegates:{g|<g.delegateName()> = new <g.recognizerName>(input, self._dbg, this.state,
this<grammar.delegators:{g|,<g.delegateName()>}>);}; separator="\n">
 <@finally()>
 }<\n>
 !>
 >>

@genericParser.superClassName() ::= "Debug<@super.superClassName()>"

@rule.body() ::= <<
try:
 self._dbg.enterRule(self.getGrammarFileName(), "<ruleName>")
 if self.getRuleLevel() == 0:
 self._dbg.commence();
 self.incRuleLevel()
 self._dbg.location(<ruleDescriptor.tree.line>, <ruleDescriptor.tree.column>)

 <@super.body()>

 self._dbg.location(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.column>)
finally:
 self._dbg.exitRule(self.getGrammarFileName(), "<ruleName>")
 self.decRuleLevel()
 if self.getRuleLevel() == 0:
 self._dbg.terminate()

 >>

@synpred.start() ::= "self._dbg.beginBacktrack(self._state.backtracking)"

```

```

@synpred.stop() ::= "self._dbg.endBacktrack(self._state.backtracking, success)"

// Common debug event triggers used by region overrides below

enterSubRule() ::=
 "try { self._dbg.enterSubRule(<decisionNumber>);<\n>"

exitSubRule() ::=
 "} finally {self._dbg.exitSubRule(<decisionNumber>);}<\n>"

enterDecision() ::=
 "try { self._dbg.enterDecision(<decisionNumber>);<\n>"

exitDecision() ::=
 "} finally {self._dbg.exitDecision(<decisionNumber>);}<\n>"

enterAlt(n) ::= "self._dbg.enterAlt(<n>)<\n>"

// Region overrides that tell various constructs to add debugging triggers

@block.body() ::= <<
try:
 self._dbg.enterSubRule(<decisionNumber>)
 <@super.body()>
finally:
 self._dbg.exitSubRule(<decisionNumber>)
>>

@blockBody.decision() ::= <<
try:
 self._dbg.enterDecision(<decisionNumber>)
 <@super.decision()>
finally:
 self._dbg.exitDecision(<decisionNumber>)
>>

@ruleBlock.decision() ::= <<
try:
 self._dbg.enterDecision(<decisionNumber>)
 <@super.decision()>
finally:
 self._dbg.exitDecision(<decisionNumber>)
>>

@ruleBlockSingleAlt.preal() ::= "<enterAlt(n=\"1\")>"

@blockSingleAlt.preal() ::= "<enterAlt(n=\"1\")>"

```

```

@positiveClosureBlock.loopBody() ::= <<
try:
 self._dbg.enterSubRule(<decisionNumber>)
 <@super.loopBody()>
finally:
 self._dbg.exitSubRule(<decisionNumber>)<\n>
>>

@positiveClosureBlockLoop.decisionBody() ::= <<
try:
 self._dbg.enterDecision(<decisionNumber>)
 <@super.decisionBody()>
finally:
 self._dbg.exitDecision(<decisionNumber>)
>>

@positiveClosureBlockLoop.earlyExitException() ::=
 "self._dbg.recognitionException(eee)<\n>"

@closureBlock.loopBody() ::= <<
try:
 self._dbg.enterSubRule(<decisionNumber>)
 <@super.loopBody()>
finally:
 self._dbg.exitSubRule(<decisionNumber>)<\n>
>>

@closureBlockLoop.decisionBody() ::= <<
try:
 self._dbg.enterDecision(<decisionNumber>)
 <@super.decisionBody()>
finally:
 self._dbg.exitDecision(<decisionNumber>)
>>

@altSwitchCase.preal() ::= "<enterAlt(n=i)>"

@element.prematch() ::=
 "self._dbg.location(<it.line>, <it.pos>)"

@matchSet.mismatchedSetException() ::=
 "self._dbg.recognitionException(mse)"

@dfaState.noViableAltException() ::= "self._dbg.recognitionException(nvae)"

@dfaStateSwitch.noViableAltException() ::= "self._dbg.recognitionException(nvae)"

```



```
dfaDecision(decisionNumber,description) ::= <<
```

```
try:
```

```
 self.isCyclicDecision = True
```

```
 <super.dfaDecision(...)>
```

```
except NoViableAltException, nvae:
```

```
 self._dbg.recognitionException(nvae)
```

```
 raise
```

```
>>
```

```
@cyclicDFA.errorMethod() ::= <<
```

```
def error(self, nvae):
```

```
 self._dbg.recognitionException(nvae)
```

```
>>
```

```
/** Force predicate validation to trigger an event */
```

```
evalPredicate(pred,description) ::= <<
```

```
self.evalPredicate(<pred>,"<description>")
```

```
>>
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Python/Dbg.stg
```

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```

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\*/

/\*\* Template overrides to add debugging to normal Java output;

\* If ASTs are built, then you'll also get ASTDbg.stg loaded.

\*/

group Dbg;

@outputFile.debugPreprocessor() ::= "#define ANTLR\_DEBUG"

@outputFile.imports() ::= <<

<@super.imports(>

using Antlr.Runtime.Debug;

using IOException = System.IO.IOException;

>>

@genericParser.members() ::= <<

<if(grammar.grammarIsRoot)>

public static readonly string[] ruleNames = new string[] {

"invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n " , separator=", ">

};<\n>

<endif>

<if(grammar.grammarIsRoot)> <! grammar imports other grammar(s) !>

private int ruleLevel = 0;

public int RuleLevel {

get { return ruleLevel; }

}

public void IncRuleLevel() { ruleLevel++; }

public void DecRuleLevel() { ruleLevel--; }

<if(profile)>

<ctorForProfilingRootGrammar(>

<else>

<ctorForRootGrammar(>

<endif>

<ctorForPredefinedListener(>

<else> <! imported grammar !>

public int RuleLevel {

get { return <grammar.delegators:{g| <g.delegateName(>>.RuleLevel; }

}

public void IncRuleLevel() { <grammar.delegators:{g| <g.delegateName(>>.IncRuleLevel(); }

public void DecRuleLevel() { <grammar.delegators:{g| <g.delegateName(>>.DecRuleLevel(); }

<ctorForDelegateGrammar(>

<endif>

```

<if(profile)>
override public bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
 ((Profiler)dbg).ExamineRuleMemoization(input, ruleIndex,
<grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 return base.AlreadyParsedRule(input, ruleIndex);
}<\n>
override public void Memoize(IIntStream input,
 int ruleIndex,
 int ruleStartIndex)
{
 ((Profiler)dbg).Memoize(input, ruleIndex, ruleStartIndex,
<grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 base.Memoize(input, ruleIndex, ruleStartIndex);
}<\n>
<endif>
protected bool EvalPredicate(bool result, string predicate)
{
 dbg.SemanticPredicate(result, predicate);
 return result;
}<\n>
>>

ctorForRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<! Same except we add port number and profile stuff if root grammar !>
public <name>(<inputStreamType> input)
 : this(input, DebugEventSocketProxy.DEFAULT_DEBUGGER_PORT, new RecognizerSharedState()) {
}

public <name>(<inputStreamType> input, int port, RecognizerSharedState state)
 : base(input, state) {
 <createListenerAndHandshake()>
 <parserCtorBody()>
 <grammar.directDelegates:{g|<g.delegateName()> = new <g.recognizerName>(input, dbg, this.state,
this<grammar.delegators:{g|, <g.delegateName()>}>)}; separator="\n">
 <@finally()>
}<\n>
>>

@parserCtorBody.initializeCyclicDFAs() ::= <<
InitializeCyclicDFAs(dbg);
>>

ctorForProfilingRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
public <name>(<inputStreamType> input) {
 this(input, new Profiler(null), new RecognizerSharedState());
}

```

```

}

public <name>(<inputStreamType> input, IDebugEventListener dbg, RecognizerSharedState state)
 : base(input, dbg, state) {
 Profiler p = (Profiler)dbg;
 p.setParser(this);
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g:delegateName()> = new <g.recognizerName>(input, dbg, this.state, this<grammar.delegators:{g|,
<g:delegateName()>>>}); separator="\n">
 <@finally()>
 }
 <\n>
>>

```

```

/** Basically we don't want to set any dbg listeners are root will have it. */
ctorForDelegateGrammar() ::= <<
public <name>(<inputStreamType> input, IDebugEventListener dbg, RecognizerSharedState
state<grammar.delegators:{g|, <g.recognizerName> <g:delegateName()>>>)
 : base(input, dbg, state) {
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g:delegateName()> = new <g.recognizerName>(input, this, this.state<grammar.delegators:{g|,
<g:delegateName()>>>}); separator="\n">
 }<\n>
>>

```

```

ctorForPredefinedListener() ::= <<
public <name>(<inputStreamType> input, IDebugEventListener dbg)
 : <@superClassRef>base(input, dbg, new RecognizerSharedState())<@end> {
<if(profile)>
 Profiler p = (Profiler)dbg;
 p.setParser(this);
<endif>
 <parserCtorBody()>
 <grammar.directDelegates:{g|<g:delegateName()> = new <g.recognizerName>(input, dbg, this.state,
this<grammar.delegators:{g|, <g:delegateName()>>>}); separator="\n">
 <@finally()>
}<\n>
>>

```

```

createListenerAndHandshake() ::= <<
<if(TREE_PARSER)>
DebugEventSocketProxy dbg = new DebugEventSocketProxy(this, port, input.TreeAdaptor);
<else>
DebugEventSocketProxy dbg = new DebugEventSocketProxy(this, port, null);
<endif>

```

```

DebugListener = dbg;
try
{
 dbg.Handshake();
}
catch (IOException ioe)
{
 ReportError(ioe);
}
>>

@genericParser.superClassName() ::= "Debug<@super.superClassName(>)"

@rule.preamble() ::= <<
try {
 dbg.EnterRule(GrammarFileName, "<ruleName>");
 if (RuleLevel==0) {dbg.Commence();}
 IncRuleLevel();
 dbg.Location(<ruleDescriptor.tree.line>, <ruleDescriptor.tree.column>);<\n>
}
>>

@lexer.debugInitializeCyclicDFAs() ::= "IDebugEventListener dbg"

@lexer.debugAddition() ::= ", dbg"

@genericParser.debugInitializeCyclicDFAs() ::= "IDebugEventListener dbg"

@genericParser.debugAddition() ::= ", dbg"

@rule.postamble() ::= <<
dbg.Location(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.column>);<\n>
}
finally {
 dbg.ExitRule(GrammarFileName, "<ruleName>");
 DecRuleLevel();
 if (RuleLevel==0) {dbg.Terminate();}
}<\n>
>>

@synpred.start() ::= "dbg.BeginBacktrack(state.backtracking);"

@synpred.stop() ::= "dbg.EndBacktrack(state.backtracking, success);"

// Common debug event triggers used by region overrides below

enterSubRule() ::=
 "try { dbg.EnterSubRule(<decisionNumber>);<\n>"

```

```

exitSubRule() ::=
 "} finally { dbg.ExitSubRule(<decisionNumber>); }<\n>"

enterDecision() ::=
 "try { dbg.EnterDecision(<decisionNumber>);<\n>"

exitDecision() ::=
 "} finally { dbg.ExitDecision(<decisionNumber>); }<\n>"

enterAlt(n) ::= "dbg.EnterAlt(<n>);<\n>"

// Region overrides that tell various constructs to add debugging triggers

@block.predecision() ::= "<enterSubRule()><enterDecision()>"

@block.postdecision() ::= "<exitDecision()>"

@block.postbranch() ::= "<exitSubRule()>"

@ruleBlock.predecision() ::= "<enterDecision()>"

@ruleBlock.postdecision() ::= "<exitDecision()>"

@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@blockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@positiveClosureBlock.preloop() ::= "<enterSubRule()>"

@positiveClosureBlock.postloop() ::= "<exitSubRule()>"

@positiveClosureBlock.predecision() ::= "<enterDecision()>"

@positiveClosureBlock.postdecision() ::= "<exitDecision()>"

@positiveClosureBlock.earlyExitException() ::=
 "dbg.RecognitionException(eee<decisionNumber>);<\n>"

@closureBlock.preloop() ::= "<enterSubRule()>"

@closureBlock.postloop() ::= "<exitSubRule()>"

@closureBlock.predecision() ::= "<enterDecision()>"

@closureBlock.postdecision() ::= "<exitDecision()>"

@altSwitchCase.prealt() ::= "<enterAlt(n=i)>"

```

```

@element.prematch() ::=
 "dbg.Location(<it.line>,<it.pos>);"

@matchSet.mismatchedSetException() ::=
 "dbg.RecognitionException(mse);"

@dfaState.noViableAltException() ::= "dbg.RecognitionException(nvae_d<decisionNumber>s<stateNumber>);"

@dfaStateSwitch.noViableAltException() ::=
 "dbg.RecognitionException(nvae_d<decisionNumber>s<stateNumber>);"

dfaDecision(decisionNumber,description) ::= <<
try
{
 isCyclicDecision = true;
 <super.dfaDecision(...)>
}
catch (NoViableAltException nvae)
{
 dbg.RecognitionException(nvae);
 throw nvae;
}
>>

@cyclicDFA.dbgCtor() ::= <<
 public DFA<dfa.decisionNumber>(BaseRecognizer recognizer, IDebugEventListener dbg) : this(recognizer)
 {
 this.dbg = dbg;
 }
>>

@cyclicDFA.debugMember() ::= <<
 IDebugEventListener dbg;

>>

@cyclicDFA.errorMethod() ::= <<
public override void Error(NoViableAltException nvae)
{
 dbg.RecognitionException(nvae);
}
>>

/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
 EvalPredicate(<pred>,"<description>")
>>

```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp2/Dbg.stg
```

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```
*/
```

```
group ASTDbg;
```

```
/*
```

```
parserMembers() ::= <<
```

```
protected TreeAdaptor adaptor =
```

```
 new DebugTreeAdaptor(dbg,new CommonTreeAdaptor());
```

```
public void setTreeAdaptor(TreeAdaptor adaptor) {
```

```
 this.adaptor = new DebugTreeAdaptor(dbg,adaptor);
```

```
}
```

```
public TreeAdaptor getTreeAdaptor() {
```

```
 return adaptor;
```

```
}<\n>
```

```
>>
```

```
*/
```



@treeParserHeaderFile.superClassName ::= "ANTLRDebugTreeParser"

@rewriteElement.pregen() ::= "[debugListener locationLine:<e.line> column:<e.pos>];"

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/ObjC/ASTDbg.stg

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\*/

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/Perl5Target.java

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\*/

/\*\* Templates for building ASTs during normal parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* The situation is not too bad as rewrite (->) usage makes ^ and !

\* invalid. There is no huge explosion of combinations.

\*/

group ASTParser;

@rule.setErrorReturnValue() ::= <<

RetVal.Tree := Adaptor.ErrorNode(Input, RetVal.Start as IToken,  
Input.LT(-1), RE) as I<ASTLabelType>;

>>

// TOKEN AST STUFF

/\*\* ID and output=AST \*/

tokenRef(token,label,elementIndex,hetero) ::= <<

<super.tokenRef(...)>

<if(backtracking)>

```

if (State.Backtracking = 0) then
begin<\n>
<endif>
<label>_tree := <createNodeFromToken(...)>;
Adaptor.AddChild(Root[0], <label>_tree);
<if(backtracking)>
end;
<endif>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<label>_tree := <createNodeFromToken(...)>;
Root[0] := Adaptor.BecomeRoot(<label>_tree, Root[0]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list

```

```
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.
```

```
matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={ <if(backtracking)>if (State.Backtracking = 0) then
<endif>Adaptor.AddChild(Root[0], <createNodeFromToken(...)>);}>
>>
```

```
matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>
```

```
matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"
```

```
// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)
```

```
matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<if(label)>
<label> := Input.LT(1) as I<labelType>;<\n>
<endif>
<super.matchSet(..., postmatchCode={ <if(backtracking)>if (State.Backtracking = 0) then <endif>Root[0] :=
Adaptor.BecomeRoot(<createNodeFromToken(...)>, Root[0]) as I<ASTLabelType>);}>
>>
```

```
// RULE REF AST
```

```
/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>Adaptor.AddChild(Root[0], <label>.Tree);
>>
```

```
/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"
```

```
/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>Root[0] := Adaptor.BecomeRoot(<label>.Tree, Root[0])
as I<ASTLabelType>;
```

```
>>
```

```
/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>
```

```
/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(elem=label+".Tree",...)>
>>
```

```
/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".Tree",...)>
>>
```

```
// WILDCARD AST
```

```
wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<label>_tree := Adaptor.CreateNode(<label>) as I<ASTLabelType>;
Adaptor.AddChild(Root[0], <label>_tree);
<if(backtracking)>
end;
<endif>
>>
```

```
wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"
```

```
wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<label>_tree := Adaptor.CreateNode(<label>) as I<ASTLabelType>;
Root[0] := Adaptor.BecomeRoot(<label>_tree, Root[0]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
```

>>

```
createNodeFromToken(label,hetero) ::= <<
<if(hetero)>
T<hetero>.Create(<label>) <! new MethodNode(IDLabel) !>
<else>
Adaptor.CreateNode(<label>) as I<ASTLabelType>
<endif>
>>
```

```
ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
RetVal.Tree := Adaptor.RulePostProcessing(Root[0]) as I<ASTLabelType>;
<if(!TREE_PARSER)>
Adaptor.SetTokenBoundaries(RetVal.Tree, RetVal.Start as IToken, RetVal.Stop as IToken);
<endif>
<if(backtracking)>
<\n>end;
<endif>
>>
```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Delphi/ASTParser.stg

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\*/

```
interface ANTLRCore;
```

```
/** The overall file structure of a recognizer; stores methods for rules
```

```
 * and cyclic DFAs plus support code.
```

```
*/
```

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals);
```

```
/** The header file; make sure to define headerFileExtension() below */
```

```
optional
```

```
headerFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals);
```

```
lexer(grammar, name, tokens, scopes, rules, numRules, labelType,
 filterMode, superClass);
```

```
parser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, ASTLabelType, superClass,
 labelType, members);
```

```
/** How to generate a tree parser; same as parser except the input
```

```
 * stream is a different type.
```

```
*/
```

```
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
 numRules, bitsets, labelType, ASTLabelType,
 superClass, members, filterMode);
```

```
/** A simpler version of a rule template that is specific to the imaginary
```

```

* rules created for syntactic predicates. As they never have return values
* nor parameters etc..., just give simplest possible method. Don't do
* any of the normal memoization stuff in here either; it's a waste.
* As predicates cannot be inlined into the invoking rule, they need to
* be in a rule by themselves.
*/
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock);

/** How to generate code for a rule. This includes any return type
* data aggregates required for multiple return values.
*/
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize);

/** How to generate a rule in the lexer; naked blocks are used for
* fragment rules.
*/
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize);

/** How to generate code for the implicitly-defined lexer grammar rule
* that chooses between lexer rules.
*/
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor);

filteringNextToken();

filteringActionGate();

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description);

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description);

/** A (..)+ block with 0 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

positiveClosureBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

/** A (..)* block with 0 or more alternatives */

```



```

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

closureBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

optionalBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description);

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew);

// E L E M E N T S

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero);

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero);

listLabel(label,elem);

/** match a character */
charRef(char,label);

/** match a character range */
charRangeRef(a,b,label);

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode);

matchSetAndListLabel(s,label,elementIndex,postmatchCode);

/** Match a string literal */
lexerStringRef(string,label);

wildcard(label,elementIndex);

wildcardAndListLabel(label,elementIndex);

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex);

wildcardCharListLabel(label, elementIndex);

```

```

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values.
 */
ruleRef(rule,label,elementIndex,args,scope);

/** ids+=ID */
ruleRefAndListLabel(rule,label,elementIndex,args,scope);

/** A lexer rule reference */
lexerRuleRef(rule,label,args,elementIndex,scope);

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope);

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex);

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel);

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description);

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState);

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 *
 * If a semPredState, don't force lookahead lookup; preds might not
 * need.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState);

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a)* on the end of a
 * rule anything other than 'a' predicts exiting.
 *
 * If a semPredState, don't force lookahead lookup; preds might not

```

```

* need.
*/
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState);

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt);

/** A simple edge with an expression. If the expression is satisfied,
* enter to the target state. To handle gated productions, we may
* have to evaluate some predicates for this edge.
*/
dfaEdge(labelExpr, targetState, predicates);

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
* decides if this is possible: CodeGenerator.canGenerateSwitch().
*/
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState);

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState);

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState);

dfaEdgeSwitch(labels, targetState);

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
* in the rule to predict an alt just like the fixed DFA case.
* The <name> attribute is inherited via the parser, lexer, ...
*/
dfaDecision(decisionNumber,description);

/** Generate the tables and support code needed for the DFASState object
* argument. Unless there is a semantic predicate (or syn pred, which
* become sem preds), all states should be encoded in the state tables.
* Consequently, cyclicDFASState/cyclicDFAEdge,eotDFAEdge templates are
* not used except for special DFA states that cannot be encoded as
* a transition table.
*/
cyclicDFA(dfa);

/** A special state in a cyclic DFA; special means has a semantic predicate
* or it's a huge set of symbols to check.
*/
cyclicDFASState(decisionNumber,stateNumber,edges,needErrorClause,semPredState);

```

```

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful. Again, this is for special
 * states.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates);

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates);

// D F A E X P R E S S I O N S

andPredicates(left,right);

orPredicates(operands);

notPredicate(pred);

evalPredicate(pred,description);

evalSynPredicate(pred,description);

lookaheadTest(atom,k,atomAsInt);

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt);

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt);

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt);

setTest(ranges);

// A T T R I B U T E S

parameterAttributeRef(attr);
parameterSetAttributeRef(attr,expr);

scopeAttributeRef(scope,attr,index,negIndex);
scopeSetAttributeRef(scope,attr,expr,index,negIndex);

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size(>0) && $function::name.equals("foo")}?
 */

```

```

isolatedDynamicScopeRef(scope);

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr);

returnAttributeRef(ruleDescriptor,attr);
returnSetAttributeRef(ruleDescriptor,attr,expr);

/** How to translate $tokenLabel */
tokenLabelRef(label);

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label);

// not sure the next are the right approach; and they are evaluated early;
// they cannot see TREE_PARSER or PARSER attributes for example. :(

tokenLabelPropertyRef_text(scope,attr);
tokenLabelPropertyRef_type(scope,attr);
tokenLabelPropertyRef_line(scope,attr);
tokenLabelPropertyRef_pos(scope,attr);
tokenLabelPropertyRef_channel(scope,attr);
tokenLabelPropertyRef_index(scope,attr);
tokenLabelPropertyRef_tree(scope,attr);

ruleLabelPropertyRef_start(scope,attr);
ruleLabelPropertyRef_stop(scope,attr);
ruleLabelPropertyRef_tree(scope,attr);
ruleLabelPropertyRef_text(scope,attr);
ruleLabelPropertyRef_st(scope,attr);

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label);

lexerRuleLabelPropertyRef_type(scope,attr);
lexerRuleLabelPropertyRef_line(scope,attr);
lexerRuleLabelPropertyRef_pos(scope,attr);
lexerRuleLabelPropertyRef_channel(scope,attr);
lexerRuleLabelPropertyRef_index(scope,attr);
lexerRuleLabelPropertyRef_text(scope,attr);

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr);
rulePropertyRef_stop(scope,attr);
rulePropertyRef_tree(scope,attr);
rulePropertyRef_text(scope,attr);
rulePropertyRef_st(scope,attr);

```

```
lexerRulePropertyRef_text(scope,attr);
lexerRulePropertyRef_type(scope,attr);
lexerRulePropertyRef_line(scope,attr);
lexerRulePropertyRef_pos(scope,attr);
/** Undefined, but present for consistency with Token attributes; set to -1 */
lexerRulePropertyRef_index(scope,attr);
lexerRulePropertyRef_channel(scope,attr);
lexerRulePropertyRef_start(scope,attr);
lexerRulePropertyRef_stop(scope,attr);
```

```
ruleSetPropertyRef_tree(scope,attr,expr);
ruleSetPropertyRef_st(scope,attr,expr);
```

```
/** How to execute an action */
execAction(action);
```

```
// M I S C (properties, etc...)
```

```
codeFileExtension();
```

```
/** Your language needs a header file; e.g., ".h" */
optional headerFileExtension();
```

```
true();
false();
```

```
Found in path(s):
```

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/ANTLRCore.sti
```

```
No license file was found, but licenses were detected in source scan.
```

```
/*
```

```
[The "BSD licence"]
```

```
Copyright (c) 2007-2008 Johannes Luber
```

```
Copyright (c) 2005-2007 Kunle Odutola
```

```
Copyright (c) 2005 Terence Parr
```

```
All rights reserved.
```

```
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```

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\*/

```
group CSharp2 implements ANTLRCore;
```

```
/** The overall file structure of a recognizer; stores methods for rules
```

```
* and cyclic DFAs plus support code.
```

```
*/
```

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals) ::=
```

```
<<
```

```
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
```

```
<@debugPreprocessor()>
```

```
// The variable 'variable' is assigned but its value is never used.
```

```
#pragma warning disable 168, 219
```

```
// Unreachable code detected.
```

```
#pragma warning disable 162
```

```
<actions.(actionScope).header>
```

```
<@imports>
```

```
using System;
```

```
using Antlr.Runtime;
```

```
<if(TREE_PARSER)>
```

```
using Antlr.Runtime.Tree;
```

```
<endif>
```

```
using IList = System.Collections.IList;
```

```
using ArrayList = System.Collections.ArrayList;
```

```
using Stack = Antlr.Runtime.Collections.StackList;
```

```
<if(backtracking)>
```

```
using IDictionary = System.Collections.IDictionary;
```

```
using Hashtable = System.Collections.Hashtable;
```

```

<endif>

<@end>

<if(actions.(actionScope).namespace)>
namespace <actions.(actionScope).namespace>
{
<endif>

<docComment>
<recognizer>
<if(actions.(actionScope).namespace)>
}
<endif>
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="IToken",
 filterMode, superClass="Lexer") ::= <<
public partial class <grammar.recognizerName> : <@superClassName><superClass><@end> {
 <tokens:{public const int <it.name> = <it.type>;}; separator="\n">
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
 <actions.lexer.members>

 // delegates
 <grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 // delegators
 <grammar.delegators:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 <last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

 public <grammar.recognizerName>() <! needed by subclasses !>
 {
 InitializeCyclicDFAs();
 }
 public <grammar.recognizerName>(ICharStream input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>}>)
 : this(input, null<grammar.delegators:{g|, <g.delegateName()>}>) {
 }
 public <grammar.recognizerName>(ICharStream input, RecognizerSharedState state<grammar.delegators:{g|,
<g.recognizerName> <g.delegateName()>}>)
 : base(input, state) {
 InitializeCyclicDFAs(); <! Necessary in C#??? Not removed yet. !>
 <if(memoize)>
 <if(grammar.grammarIsRoot)>
 state.ruleMemo = new Hashtable[<numRules>+1];<n> <! index from 1..n !>
 <endif>
 <endif>
}

```



```

 <grammar.directDelegates:
 { g|<g:delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|,
<p:delegateName()>>, this);}; separator="\n">
 <grammar.delegators:
 { g|this.<g:delegateName()> = <g:delegateName()>; separator="\n">
 <last(grammar.delegators):{ g|gParent = <g:delegateName()>;}>
 }

 override public string GrammarFileName
 {
 get { return "<fileName>";}
 }

<if(filterMode)>
 <filteringNextToken()>
<endif>
 <rules; separator="\n\n">

 <synpreds:{ p | <lexerSynpred(p)>>

 <cyclicDFAs:{ dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">
 private void InitializeCyclicDFAs(<@debugInitializeCyclicDFAs(>)
 {
 <cyclicDFAs:{ dfa | this.dfa<dfa.decisionNumber> = new
 DFA<dfa.decisionNumber>(this<@debugAddition(>);}; separator="\n">
 <cyclicDFAs:{ dfa | <if(dfa.specialStateSTs)>this.dfa<dfa.decisionNumber>.specialStateTransitionHandler = new
 DFA.SpecialStateTransitionHandler(DFA<dfa.decisionNumber>_SpecialStateTransition);<endif>;};
 separator="\n">
 }

 <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

 }
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 *
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
override public IToken NextToken()
{
 while (true)
 {
 if (input.LA(1) == (int)CharStreamConstants.EOF)

```

```

 {
 return Token.EOF_TOKEN;
 }

 state.token = null;
state.channel = Token.DEFAULT_CHANNEL;
 state.tokenStartCharIndex = input.Index();
 state.tokenStartCharPositionInLine = input.CharPositionInLine;
 state.tokenStartLine = input.Line;
 state.text = null;
 try
 {
 int m = input.Mark();
 state.backtracking = 1; <! means we won't throw slow exception !>
 state.failed = false;
 mTokens();
 state.backtracking = 0;
<!
 mTokens backtracks with synpred at backtracking==2
 and we set the synpredgate to allow actions at level 1.
!>
 if (state.failed)
 {
 input.Rewind(m);
 input.Consume(); <! // advance one char and try again !>
 }
 else
 {
 Emit();
 return state.token;
 }
 }
 catch (RecognitionException re)
 {
 // shouldn't happen in backtracking mode, but...
 ReportError(re);
 Recover(re);
 }
}

override public void Memoize(IIntStream input, int ruleIndex, int ruleStartIndex)
{
 if (state.backtracking > 1)
 base.Memoize(input, ruleIndex, ruleStartIndex);
}

override public bool AlreadyParsedRule(IIntStream input, int ruleIndex)

```

```

{
if (state.backtracking>1)
return base.AlreadyParsedRule(input, ruleIndex);
return false;
}
>>

actionGate() ::= "(state.backtracking==0)"

filteringActionGate() ::= "(state.backtracking == 1)"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass, filterMode,
 ASTLabelType="object", labelType, members, rewriteElementType) ::= <<
public partial class <grammar.recognizerName> : <@superClassName><superClass><@end>
{
<if(grammar.grammarIsRoot)>
public static readonly string[] tokenNames = new string[]
{
 "\<invalid>",
 "\<EOR>",
 "\<DOWN>",
 "\<UP>",
 <tokenNames; separator=", \n">
};<\n>
<endif>

<tokens:{public const int <it.name> = <it.type>;}; separator="\n">

// delegates
<grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
// delegators
<grammar.delegators:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
<last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>

public <grammar.recognizerName>(<inputStreamType> input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>}>)
: this(input, new RecognizerSharedState(<grammar.delegators:{g|, <g.delegateName()>}>)) {
}

public <grammar.recognizerName>(<inputStreamType> input, RecognizerSharedState

```

```

state<grammar.delegates:{g| <g.recognizerName> <g.delegateName()>}>
: base(input, state) {
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegates):{p|,
<p.delegateName()>}>, this);}; separator="\n">
 <grammar.indirectDelegates:{g | <g.delegateName()> = <g.delegate.delegateName()>.<g.delegateName()>;};
separator="\n">
 <last(grammar.delegates):{g|gParent = <g.delegateName()>;}>
 }
 <@end>

 override public string[] TokenNames {
 get { return <grammar.composite.rootGrammar.recognizerName>.tokenNames; }
 }

 override public string GrammarFileName {
 get { return "<fileName>"; }
 }

 <members>

 <rules; separator="\n\n">

 <! generate rule/method definitions for imported rules so they
 appear to be defined in this recognizer. !>
 // Delegated rules
 <grammar.delegatedRules:{ruleDescriptor|
 public <returnType()> <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) //
 throws RecognitionException
 \{
 <if(ruleDescriptor.hasReturnValue)>return
 <endif><ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes:{a|<a.name>; separator=", ">;
 \}); separator="\n">

 <synpreds:{p | <synpred(p)>}>

 <cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">
 private void InitializeCyclicDFAs(<@debugInitializeCyclicDFAs()>)
 {
 <cyclicDFAs:{dfa | this.dfa<dfa.decisionNumber> = new
 DFA<dfa.decisionNumber>(this<@debugAddition()>);}; separator="\n">
 <cyclicDFAs:{dfa | <if(dfa.specialStateSTs)>this.dfa<dfa.decisionNumber>.specialStateTransitionHandler = new
 DFA.SpecialStateTransitionHandler(DFA<dfa.decisionNumber>_SpecialStateTransition);<endif>;};
 separator="\n">
 }

```

```

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
 words64=it.bits)>
}
>>

parserCtorBody() ::= <<
<@initializeCyclicDFAs>InitializeCyclicDFAs();<@end>
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo = new Hashtable[<length(grammar.allImportedRules)>+1];<\n> <! index from 1..n !>
<endif>
<endif>
<grammar.delegators:
{g|this.<g.delegateName()> = <g.delegateName()>; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType, superClass="Parser",
labelType="IToken", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ITokenStream", rewriteElementType="Token", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="object", superClass="TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start "<ruleName>"
public void <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) {
 <ruleLabelDefs()>
<if(trace)>
 TraceIn("<ruleName>_fragment", <ruleDescriptor.index>);
 try
 {

```

```

 <block>
 }
 finally
 {
 TraceOut("<ruleName>_fragment", <ruleDescriptor.index>);
 }
<else>
 <block>
<endif>
}
// $ANTLR end "<ruleName>"
>>

synpredDecls(name) ::= <<
SynPredPointer <name>;<\n>
>>

synpred(name) ::= <<
public bool <name>()
{
 state.backtracking++;
 <@start()>
 int start = input.Mark();
 try
 {
 <name>_fragment(); // can never throw exception
 }
 catch (RecognitionException re)
 {
 Console.Error.WriteLine("impossible: "+re);
 }
 bool success = !state.failed;
 input.Rewind(start);
 <@stop()>
 state.backtracking--;
 state.failed = false;
 return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ((state.backtracking > 0) && AlreadyParsedRule(input, <ruleDescriptor.index>))
{

```

```

return <ruleReturnValue(>;
}
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (state.failed) return <ruleReturnValue(>;<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking > 0) {state.failed = true; return <ruleReturnValue(>;}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
// <fileName>:<description>
public <returnType(> <ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) // throws
RecognitionException [1]
{
 <if(trace)>TraceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp(>
 <ruleDeclarations(>
 <ruleLabelDefs(>
 <ruleDescriptor.actions.init>
 <@preamble(>
 try
 {
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp(>
 <(ruleDescriptor.actions.after):execAction(>
 }
 <if(exceptions)>
 <exceptions: {e|<catch(decl=e.decl,action=e.action)><\n>}>
 <else>
 <if(!emptyRule)>
 <if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
 <else>
 catch (RecognitionException re)

```

```

{
 ReportError(re);
 Recover(input,re);
<@setErrorReturnValue()>
}
<\n>
<endif>
<endif>
<endif>
finally
{
 <if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
}
<@postamble()>
return <ruleReturnValue()>;
}
// $ANTLR end "<ruleName>"
>>

catch(decl,action) ::= <<
catch (<e.decl>)
{
 <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> retval = new <returnType()>();
retval.Start = input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.Index();
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.Push(new <it>_scope());}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.Push(new <it.name>_scope());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<

```



```

<ruleDescriptor.useScopes:{<it>_stack.Pop();}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_stack.Pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {<labelType> <it.label.text> = null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: {IList list_<it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: {I|<I:ruleLabelDef(label=it)> <I.label.text> = null;}; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<labelType> <it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.charLabels: {int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {IList list_<it.label.text> = null;}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
>>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.Stop = input.LT(-1);<\n>
<endif>
<endif>
>>

```

```

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking > 0)
{
Memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex);
}
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
public void m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) // throws
RecognitionException [2]
{
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<if(trace)>TraceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
try
{
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block><\n>
<else>
int _type = <ruleName>;
int _channel = DEFAULT_TOKEN_CHANNEL;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<ruleCleanUp()>
state.type = _type;
state.channel = _channel;
<(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally
{
<if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeCleanUp()>
}
}
}

```

```

 <memoize()>
 }
}
// $ANTLR end "<ruleName>"
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
override public void mTokens() // throws RecognitionException
{
 <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber> = <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>)
{
 <alts:altSwitchCase()>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber> = <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>)
{
 <alts:altSwitchCase()>
}
>>

```

```

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int cnt<decisionNumber> = 0;
<decls>
<@preloop()>
do
{
 int alt<decisionNumber> = <maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>)
 {
 <alts:altSwitchCase()>
 default:
 if (cnt<decisionNumber> >= 1) goto loop<decisionNumber>;
 <ruleBacktrackFailure()>
 EarlyExitException eee<decisionNumber> =
 new EarlyExitException(<decisionNumber>, input);
 <@earlyExitException()>
 throw eee<decisionNumber>;
 }
 cnt<decisionNumber>++;
} while (true);

loop<decisionNumber>:
// Stops C# compiler whining that label 'loop<decisionNumber>' has no statements
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/\*\* A (..)\* block with 1 or more alternatives \*/

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=

<<

// <fileName>:<description>

<decls>

<@preloop()>

do

{

int alt<decisionNumber> = <maxAlt>;

<@predecision()>

<decision>

<@postdecision()>

switch (alt<decisionNumber>)

{

<alts:altSwitchCase()>

default:

goto loop<decisionNumber>;

}

} while (true);

loop<decisionNumber>:

; // Stops C# compiler whining that label 'loop<decisionNumber>' has no statements

<@postloop()>

>>

closureBlockSingleAlt ::= closureBlock

/\*\* Optional blocks (x)? are translated to (x|) by before code generation

\* so we can just use the normal block template

\*/

optionalBlock ::= block

optionalBlockSingleAlt ::= block

/\*\* A case in a switch that jumps to an alternative given the alternative

\* number. A DFA predicts the alternative and then a simple switch

\* does the jump to the code that actually matches that alternative.

\*/

altSwitchCase() ::= <<

case <i> :

<@prealt()>

<it>

break;<\n>

>>

```

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
 <@declarations()>
 <elements:element()>
 <rew>
 <@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label>=<labelType><endif>Match(input,<token>,FOLLOW_<token>_in_<ruleName><elementIndex
>); <checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label> == null) list_<label> = new ArrayList();
list_<label>.Add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
Match(<char>); <checkRuleBacktrackFailure()>
>>

```

```

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchRange(<a>,); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>
<else>
<label> = (<labelType>)input.LT(1);<\n>
<endif>
<endif>
if (<s>)
{
input.Consume();
<postmatchCode>
<if(!LEXER)>
state.errorRecovery = false;
<endif>
<if(backtracking)>state.failed = false;<endif>
}
else
{
<ruleBacktrackFailure()>
MismatchedSetException mse = new MismatchedSetException(null,input);
<@mismatchedSetException()>
<if(LEXER)>
Recover(mse);
throw mse;
<else>
throw mse;
<! use following code to make it recover inline; remove throw mse;
RecoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
!>
<endif>
}<\n>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>

```

```

<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
int <label>Start = CharIndex;
Match(<string>); <checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start, CharIndex-1);
<else>
Match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

wildcard(label,elementIndex) ::= <<
<if(label)>
<label> = (<labelType>)input.LT(1);<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);

```



```

<if(label)>
<label> = <if(scope)><scope.delegateName()>.<endif><rule.name><(<args; separator=", ">);<\n>
<else>
<if(scope)><scope.delegateName()>.<endif><rule.name><(<args; separator=", ">);<\n>
<endif>
state.followingStackPointer--;
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
*
* The 'rule' argument was the target rule name, but now
* is type Rule, whose toString is same: the rule name.
* Now though you can access full rule descriptor stuff.
*/
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int <label>Start<elementIndex> = CharIndex;
<if(scope)><scope.delegateName()>.<endif>m<rule.name><(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, CharIndex-1);
<else>
<if(scope)><scope.delegateName()>.<endif>m<rule.name><(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = CharIndex;
Match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, EOF, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, CharIndex-1);
<else>

```

```

Match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1) == Token.DOWN)
{
 Match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 Match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>))
{
 <ruleBacktrackFailure()>
 throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
else
{
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 NoViableAltException nvae_d<decisionNumber>s<stateNumber> =
 new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <@noViableAltException()>

```

```

 throw nvae_d<decisionNumber>s<stateNumber>;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
{
 alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>;"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>) <endif>)
{
 <targetState>
}

```

```

>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>;
 break;
<else>
 <ruleBacktrackFailure()>
 NoViableAltException nvae_d<decisionNumber>s<stateNumber> =
 new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <@noViableAltException()>
 throw nvae_d<decisionNumber>s<stateNumber>;<\n>
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
 <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
 alt<decisionNumber> = <eotPredictsAlt>;
 break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{ case <it>:}; separator="\n">
{
 <targetState>

```

```

 }
 break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = dfa<decisionNumber>.Predict(input);
>>

/* Dump DFA tables.
*/
cyclicDFA(dfa) ::= <<
const string DFA<dfa.decisionNumber>_eotS =
 "<dfa.javaCompressedEOT; wrap="+\n \>";
const string DFA<dfa.decisionNumber>_eofS =
 "<dfa.javaCompressedEOF; wrap="+\n \>";
const string DFA<dfa.decisionNumber>_minS =
 "<dfa.javaCompressedMin; wrap="+\n \>";
const string DFA<dfa.decisionNumber>_maxS =
 "<dfa.javaCompressedMax; wrap="+\n \>";
const string DFA<dfa.decisionNumber>_acceptS =
 "<dfa.javaCompressedAccept; wrap="+\n \>";
const string DFA<dfa.decisionNumber>_specialS =
 "<dfa.javaCompressedSpecial; wrap="+\n \>}>";
static readonly string[] DFA<dfa.decisionNumber>_transitionS = {
 <dfa.javaCompressedTransition:{s|<s; wrap="+\n\>"; separator=",\n">
};

static readonly short[] DFA<dfa.decisionNumber>_eot =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eotS);
static readonly short[] DFA<dfa.decisionNumber>_eof =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eofS);
static readonly char[] DFA<dfa.decisionNumber>_min =
DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
static readonly char[] DFA<dfa.decisionNumber>_max =
DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
static readonly short[] DFA<dfa.decisionNumber>_accept =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
static readonly short[] DFA<dfa.decisionNumber>_special =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_specialS);
static readonly short[][] DFA<dfa.decisionNumber>_transition =
DFA.UnpackEncodedStringArray(DFA<dfa.decisionNumber>_transitionS);

```

```

protected class DFA<dfa.decisionNumber> : DFA
{
 <@debugMember()>
 public DFA<dfa.decisionNumber>(BaseRecognizer recognizer)
 {
 this.recognizer = recognizer;
 this.decisionNumber = <dfa.decisionNumber>;
 this.eot = DFA<dfa.decisionNumber>_eot;
 this.eof = DFA<dfa.decisionNumber>_eof;
 this.min = DFA<dfa.decisionNumber>_min;
 this.max = DFA<dfa.decisionNumber>_max;
 this.accept = DFA<dfa.decisionNumber>_accept;
 this.special = DFA<dfa.decisionNumber>_special;
 this.transition = DFA<dfa.decisionNumber>_transition;

 }
 <@dbgCtor()>

 override public string Description
 {
 get { return "<dfa.description>"; }
 }

 <@errorMethod()>
 }<\n>
 <if(dfa.specialStateSTs)>

protected internal int DFA<dfa.decisionNumber>_SpecialStateTransition(DFA dfa, int s, IIntStream _input)
//throws NoViableAltException
{
 <if(LEXER)>
 IIntStream input = _input;
 <endif>
 <if(PARSER)>
 ITokenStream input = (ITokenStream)_input;
 <endif>
 <if(TREE_PARSER)>
 ITreeNodeStream input = (ITreeNodeStream)_input;
 <endif>
 int _s = s;
 switch (s)
 {
 <dfa.specialStateSTs:{state |
 case <i0> : <! compressed special state numbers 0..n-1 !>
 <state>}; separator="\n">
 }
 <if(backtracking)>
 if (state.backtracking > 0) {state.failed = true; return -1;}<\n>

```

```

<endif>
 NoViableAltException nvae<dfa.decisionNumber> =
 new NoViableAltException(dfa.Description, <dfa.decisionNumber>, _s, input);
 dfa.Error(nvae<dfa.decisionNumber>);
 throw nvae<dfa.decisionNumber>;
}<\n>
<endif>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
int index<decisionNumber>_<stateNumber> = input.Index();
input.Rewind();<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.Seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if (s >= 0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>) <endif>) { s = <targetStateNumber>; }<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "(<left> && <right>)"

orPredicates(operands) ::= "(<first(operands)><rest(operands):{o || <o>>})"

```

```

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber> |>= <lower> && LA<decisionNumber>_<stateNumber> |<= <upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(input.LA(<k>) |>=
<lower> && input.LA(<k>) |<= <upper>)"

setTest(ranges) ::= "<ranges; separator=\\| \\>"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected class <scope.name>_scope
{
 <scope.attributes:{protected internal <it.decl>;}; separator="\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected class <scope.name>_scope
{
 <scope.attributes:{protected internal <it.decl>;}; separator="\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

returnStructName() ::= "<it.name>_return"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>

```



```

<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

```

```

/** Generate the C# type associated with a single or multiple return
* values.
*/

```

```

ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.grammar.recognizerName>.<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

```

```

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

```

```

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/

```

```

initValue(typeName) ::= <<
default(<typeName>)
>>

```

```

/** Define a rule label including default value */

```

```

ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

```

```

/** Define a return struct for a rule if the code needs to access its
* start/stop tokens, tree stuff, attributes, ... Leave a hole for
* subgroups to stick in members.
*/

```

```

returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>

```

```

public class <ruleDescriptor:returnStructName()> :
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope
{
 <scope.attributes:{public <it.decl>;}; separator="\n">
 <@ruleReturnMembers()>
};
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>;}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>;"

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack[<scope>_stack.Count-<negIndex>-1]).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack[<index>]).<attr.name>
<else>
((<scope>_scope)<scope>_stack.Peek()).<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack[<scope>_stack.Count-<negIndex>-1]).<attr.name> = <expr>;
<else>
<if(index)>
((<scope>_scope)<scope>_stack[<index>]).<attr.name> = <expr>;
<else>
((<scope>_scope)<scope>_stack.Peek()).<attr.name> = <expr>;
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<

```

```

<if(referencedRule.hasMultipleReturnValues)>
((<scope> != null) ? <scope>.<attr.name> : <initValue(attr.type)>)
<else>
<scope>
<endif>
>>

```

```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> = <expr>;
<else>
<attr.name> = <expr>;
<endif>
>>

```

```

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

```

```

// not sure the next are the right approach

```

```

tokenLabelPropertyRef_text(scope,attr) ::= "((<scope> != null) ? <scope>.Text : null)"
tokenLabelPropertyRef_type(scope,attr) ::= "((<scope> != null) ? <scope>.Type : 0)"
tokenLabelPropertyRef_line(scope,attr) ::= "((<scope> != null) ? <scope>.Line : 0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "((<scope> != null) ? <scope>.CharPositionInLine : 0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "((<scope> != null) ? <scope>.Channel : 0)"
tokenLabelPropertyRef_index(scope,attr) ::= "((<scope> != null) ? <scope>.TokenIndex : 0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(<scope>!=null?int.Parse(<scope>.Text):0)"

```

```

ruleLabelPropertyRef_start(scope,attr) ::= "((<scope> != null) ? ((<labelType>)<scope>.Start) : null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "((<scope> != null) ? ((<labelType>)<scope>.Stop) : null)"
ruleLabelPropertyRef_tree(scope,attr) ::= "((<scope> != null) ? ((<ASTLabelType>)<scope>.Tree) : null)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
((<scope> != null) ? input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(<scope>.Start),

```

```

input.TreeAdaptor.GetTokenStopIndex(<scope>.Start)) : null)
<else>
((<scope> != null) ? input.ToString((IToken)(<scope>.Start),(IToken)(<scope>.Stop)) : null)
<endif>
>>
ruleLabelPropertyRef_st(scope,attr) ::= "((<scope> != null) ? <scope>.ST : null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "((<scope> != null) ? <scope>.Type : 0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "((<scope> != null) ? <scope>.Line : 0)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "((<scope> != null) ? <scope>.CharPositionInLine : -1)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "((<scope> != null) ? <scope>.Channel : 0)"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "((<scope> != null) ? <scope>.TokenIndex : 0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "((<scope> != null) ? <scope>.Text : null)"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "(<scope>!=null?int.Parse(<scope>.Text):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "(<labelType>)retval.Start)"
rulePropertyRef_stop(scope,attr) ::= "(<labelType>)retval.Stop)"
rulePropertyRef_tree(scope,attr) ::= "(<ASTLabelType>)retval.Tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(retval.Start),
input.TreeAdaptor.GetTokenStopIndex(retval.Start))
<else>
input.ToString((IToken)retval.Start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.ST"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(CharIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int.Parse(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.Tree = <expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.ST = <expr>;"

```

```
/** How to execute an action (only when not backtracking) */
```

```
execAction(action) ::= <<
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
 <action>
}
<else>
<action>
<endif>
>>
```

```
/** How to always execute an action even when backtracking */
```

```
execForcedAction(action) ::= "<action>"
```

```
// M I S C (properties, etc...)
```

```
bitset(name, words64) ::= <<
```

```
public static readonly BitSet <name> = new BitSet(new ulong[] { <words64: { <it>UL }; separator="," > }); <\n>
>>
```

```
codeFileExtension() ::= ".cs"
```

```
true() ::= "true"
```

```
false() ::= "false"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp2/CSharp2.stg
```

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/*
```

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/ObjC/Dbg.stg

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\*/

/\*\* Template subgroup to add template rewrite output

```

* If debugging, then you'll also get STDbg.stg loaded.
*/
group ST;

@outputFile.imports() ::= <<
<@super.imports()>
using Antlr.StringTemplate;
using Antlr.StringTemplate.Language;
<if(!backtracking)>
using Hashtable = System.Collections.Hashtable;
<endif>

>>

/** Add this to each rule's return value struct */
@returnScope.ruleReturnMembers() ::= <<
private StringTemplate st;
public StringTemplate ST { get { return st; } set { st = value; } }
public override object Template { get { return st; } }
public override string ToString() { return (st == null) ? null : st.ToString(); }
>>

@genericParser.members() ::= <<
<@super.members()>
protected StringTemplateGroup templateLib =
new StringTemplateGroup("<name>Templates", typeof(AngleBracketTemplateLexer));

public StringTemplateGroup TemplateLib
{
get { return this.templateLib; }
set { this.templateLib = value; }
}

/// \<summary> Allows convenient multi-value initialization:
/// "new STAttrMap().Add(...).Add(...)"
/// \</summary>
protected class STAttrMap : Hashtable
{
public STAttrMap Add(string attrName, object value)
{
base.Add(attrName, value);
return this;
}
public STAttrMap Add(string attrName, int value)
{
base.Add(attrName, value);
return this;
}
}

```

```

}
>>

/** x+=rule when output=template */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Template",...)>
>>

rewriteTemplate(alts) ::= <<

// TEMPLATE REWRITE
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
}
<else>
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
<endif>
>>

replaceTextInLine() ::= <<
<if(TREE_PARSER)>
((TokenRewriteStream)input.TokenStream).Replace(
input.TreeAdaptor.GetTokenStartIndex(retval.Start),
input.TreeAdaptor.GetTokenStopIndex(retval.Start),
retval.ST);
<else>
((TokenRewriteStream)input).Replace(
((IToken)retval.Start).TokenIndex,
input.LT(-1).TokenIndex,
retval.ST);
<endif>
>>

rewriteTemplateAlt() ::= <<
// <it.description>
<if(it.pred)>
if (<it.pred>) {
 retval.ST = <it.alt>;
}<\n>
<else>
{
 retval.ST = <it.alt>;
}<\n>

```



```

<endif>
>>

rewriteEmptyTemplate(alts) ::= <<
null;
>>

/** Invoke a template with a set of attribute name/value pairs.
 * Set the value of the rule's template after having set
 * the attributes because the rule's template might be used as
 * an attribute to build a bigger template; you get a self-embedded
 * template.
 */
rewriteExternalTemplate(name,args) ::= <<
templateLib.GetInstanceOf("<name>"<if(args)>,
new STAttrMap()<args:{a | .Add("<a.name>", <a.value>)}>
<endif>)
>>

/** expr is a string expression that says what template to load */
rewriteIndirectTemplate(expr,args) ::= <<
templateLib.GetInstanceOf(<expr><if(args)>,
new STAttrMap()<args:{a | .Add("<a.name>", <a.value>)}>
<endif>)
>>

/** Invoke an inline template with a set of attribute name/value pairs */
rewriteInlineTemplate(args, template) ::= <<
new StringTemplate(templateLib, "<template>"<if(args)>,
new STAttrMap()<args:{a | .Add("<a.name>", <a.value>)}>
<endif>)
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
<action>
>>

/** An action has %st.attrName=expr; or % {st}.attrName=expr; */
actionSetAttribute(st,attrName,expr) ::= <<
(<st>).SetAttribute("<attrName>",<expr>);
>>

/** Translate % {stringExpr} */
actionStringConstructor(stringExpr) ::= <<
new StringTemplate(templateLib,<stringExpr>)
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp2/ST.stg

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp/ST.stg

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/DelphiTarget.java

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```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Java/ASTParser.stg
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/serialize.g
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Python/AST.stg
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Python/ST.stg
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/ActionScript/ASTParser.stg
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Python/ASTDbg.stg
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\*/

/\*

New style messages. This file contains the actual layout of the messages emitted by ANTLR.

The text itself is coming out of the languages/\*stg files, according to the chosen locale.

This file contains the default format ANTLR uses.

\*/

group antlr;

location(file, line, column) ::= "<file>(<line>,<column>)"

message(id, text) ::= "error <id> : <text>"

report(location, message, type) ::= "<location> : <type> <message.id> : <message.text>"

wantsSingleLineMessage() ::= "true"

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/templates/messages/formats/vs2005.stg

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```

*/
/** Template overrides to add debugging to normal Java output;
 * If ASTs are built, then you'll also get ASTDbg.stg loaded.
 */
group Dbg;

@outputFile.debugPreprocessor() ::= "#define ANTLR_DEBUG"

@outputFile.imports() ::= <<
<@super.imports()>
using Antlr.Runtime.Debug;
using IOException = System.IO.IOException;
>>

@genericParser.members() ::= <<
<if(grammar.grammarIsRoot)>
public static readonly string[] ruleNames = new string[] {
 "invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">
};<\n>
<endif>
<if(grammar.grammarIsRoot)> <! grammar imports other grammar(s) !>
 private int ruleLevel = 0;
 public int RuleLevel {
 get { return ruleLevel; }
 }
 public void IncRuleLevel() { ruleLevel++; }
 public void DecRuleLevel() { ruleLevel--; }
<endif(profile)>
 <ctorForProfilingRootGrammar()>
<else>
 <ctorForRootGrammar()>
<endif>
<ctorForPredefinedListener()>
<else> <! imported grammar !>
 public int RuleLevel {
 get { return <grammar.delegators:{g| <g.delegateName()>>}.RuleLevel; }
 }
 public void IncRuleLevel() { <grammar.delegators:{g| <g.delegateName()>>}.IncRuleLevel(); }
 public void DecRuleLevel() { <grammar.delegators:{g| <g.delegateName()>>}.DecRuleLevel(); }
 <ctorForDelegateGrammar()>
<endif>
<if(profile)>
override public bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
 ((Profiler)dbg).ExamineRuleMemoization(input, ruleIndex,
 <grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 return base.AlreadyParsedRule(input, ruleIndex);
}<\n>

```

```

override public void Memoize(IIntStream input,
 int ruleIndex,
 int ruleStartIndex)
{
 ((Profiler)dbg).Memoize(input, ruleIndex, ruleStartIndex,
<grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 base.Memoize(input, ruleIndex, ruleStartIndex);
}<\n>
<endif>
protected bool EvalPredicate(bool result, string predicate)
{
 dbg.SemanticPredicate(result, predicate);
 return result;
}<\n>
>>

ctorForRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<! Same except we add port number and profile stuff if root grammar !>
public <name>(<inputStreamType> input)
 : this(input, DebugEventSocketProxy.DEFAULT_DEBUGGER_PORT, new RecognizerSharedState()) {
}

public <name>(<inputStreamType> input, int port, RecognizerSharedState state)
 : base(input, state) {
 <parserCtorBody()>
 <createListenerAndHandshake()>
 <grammar.directDelegates:{g|<g.delegateName()> = new <g.recognizerName>(input, dbg, this.state,
this<grammar.delegators:{g|, <g.delegateName()>}>)}>; separator="\n">
 <@finally()>
}<\n>
>>

@parserCtorBody.initializeCyclicDFAs() ::= <<
InitializeCyclicDFAs(dbg);
>>

ctorForProfilingRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
public <name>(<inputStreamType> input) {
 this(input, new Profiler(null), new RecognizerSharedState());
}

public <name>(<inputStreamType> input, IDebugEventListener dbg, RecognizerSharedState state)
 : base(input, dbg, state) {
 Profiler p = (Profiler)dbg;
 p.setParser(this);
 <parserCtorBody()>

```

```

 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, dbg, this.state, this<grammar.delegates:{g|,
<g.delegateName()>}>);}; separator="\n">
 <@finally()>
 }
<\n>
>>

```

```

/** Basically we don't want to set any dbg listeners are root will have it. */
ctorForDelegateGrammar() ::= <<
public <name>(<inputStreamType> input, IDebugEventListener dbg, RecognizerSharedState
state<grammar.delegates:{g|, <g.recognizerName> <g.delegateName()>}>)
: base(input, dbg, state) {
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, this, this.state<grammar.delegates:{g|,
<g.delegateName()>}>);}; separator="\n">
 }<\n>
}>>

```

```

ctorForPredefinedListener() ::= <<
public <name>(<inputStreamType> input, IDebugEventListener dbg)
: <@superClassRef>base(input, dbg, new RecognizerSharedState())<@end> {
<if(profile)>
 Profiler p = (Profiler)dbg;
 p.setParser(this);
<endif>
 <parserCtorBody()>
 <grammar.directDelegates:{g|<g.delegateName()> = new <g.recognizerName>(input, dbg, this.state,
this<grammar.delegates:{g|, <g.delegateName()>}>);}; separator="\n">
 <@finally()>
}<\n>
}>>

```

```

createListenerAndHandshake() ::= <<
<if(TREE_PARSER)>
DebugEventSocketProxy proxy = new DebugEventSocketProxy(this, port, input.TreeAdaptor);
<else>
DebugEventSocketProxy proxy = new DebugEventSocketProxy(this, port, null);
<endif>
DebugListener = proxy;
try
{
 proxy.Handshake();
}
catch (IOException ioe)
{

```

```

 ReportError(ioe);
}
>>

@genericParser.superClassName() ::= "Debug<@super.superClassName()>"

@rule.preamble() ::= <<
try {
 dbg.EnterRule(GrammarFileName, "<ruleName>");
 if (RuleLevel==0) {dbg.Commence();}
 IncRuleLevel();
 dbg.Location(<ruleDescriptor.tree.line>, <ruleDescriptor.tree.column>);<\n>
}
>>

@lexer.debugInitializeCyclicDFAs() ::= "IDebugEventListener dbg"

@lexer.debugAddition() ::= ", dbg"

@genericParser.debugInitializeCyclicDFAs() ::= "IDebugEventListener dbg"

@genericParser.debugAddition() ::= ", dbg"

@rule.postamble() ::= <<
dbg.Location(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.column>);<\n>
}
finally {
 dbg.ExitRule(GrammarFileName, "<ruleName>");
 DecRuleLevel();
 if (RuleLevel==0) {dbg.Terminate();}
}
}
>>

@synpred.start() ::= "dbg.BeginBacktrack(state.backtracking);"

@synpred.stop() ::= "dbg.EndBacktrack(state.backtracking, success);"

// Common debug event triggers used by region overrides below

enterSubRule() ::=
 "try { dbg.EnterSubRule(<decisionNumber>);<\n>"

exitSubRule() ::=
 "} finally { dbg.ExitSubRule(<decisionNumber>); }<\n>"

enterDecision() ::=
 "try { dbg.EnterDecision(<decisionNumber>);<\n>"

exitDecision() ::=

```



```

 } finally { dbg.ExitDecision(<decisionNumber>); }<\n>"

enterAlt(n) ::= "dbg.EnterAlt(<n>);<\n>"

// Region overrides that tell various constructs to add debugging triggers

@block.predecision() ::= "<enterSubRule()><enterDecision()>"

@block.postdecision() ::= "<exitDecision()>"

@block.postbranch() ::= "<exitSubRule()>"

@ruleBlock.predecision() ::= "<enterDecision()>"

@ruleBlock.postdecision() ::= "<exitDecision()>"

@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@blockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@positiveClosureBlock.preloop() ::= "<enterSubRule()>"

@positiveClosureBlock.postloop() ::= "<exitSubRule()>"

@positiveClosureBlock.predecision() ::= "<enterDecision()>"

@positiveClosureBlock.postdecision() ::= "<exitDecision()>"

@positiveClosureBlock.earlyExitException() ::=
 "dbg.RecognitionException(eee<decisionNumber>);<\n>"

@closureBlock.preloop() ::= "<enterSubRule()>"

@closureBlock.postloop() ::= "<exitSubRule()>"

@closureBlock.predecision() ::= "<enterDecision()>"

@closureBlock.postdecision() ::= "<exitDecision()>"

@altSwitchCase.prealt() ::= "<enterAlt(n=i)>"

@element.prematch() ::=
 "dbg.Location(<it.line>,<it.pos>);"

@matchSet.mismatchedSetException() ::=
 "dbg.RecognitionException(mse);"

@dfaState.noViableAltException() ::= "dbg.RecognitionException(nvae_d<decisionNumber>s<stateNumber>);"

```

```
@dfaStateSwitch.noViableAltException() ::=
"dbg.RecognitionException(nvae_d<decisionNumber>s<stateNumber>);"
```

```
dfaDecision(decisionNumber,description) ::= <<
try
{
 isCyclicDecision = true;
 <super.dfaDecision(...)>
}
catch (NoViableAltException nvae)
{
 dbg.RecognitionException(nvae);
 throw nvae;
}
>>
```

```
@cyclicDFA.dbgCtor() ::= <<
 public DFA<dfa.decisionNumber>(BaseRecognizer recognizer, IDebugEventListener dbg) : this(recognizer)
 {
 this.dbg = dbg;
 }
>>
```

```
@cyclicDFA.debugMember() ::= <<
IDebugEventListener dbg;

>>
```

```
@cyclicDFA.errorMethod() ::= <<
public override void Error(NoViableAltException nvae)
{
 dbg.RecognitionException(nvae);
}
>>
```

```
/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
EvalPredicate(<pred>,"<description>")
>>
```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp/Dbg.stg

No license file was found, but licenses were detected in source scan.

/\*

\* [The "BSD licence"]

```

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*/

```

```

group CSharp3 implements ANTLRCore;

```

```

csharpVisibilityMap ::= [
 "private":"private",
 "protected":"protected",
 "public":"public",
 "fragment":"private",
 default:"private"
]

```

```

/** The overall file structure of a recognizer; stores methods for rules
* and cyclic DFAs plus support code.
*/

```

```

outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,

```

```

 scopes, superClass, literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

// The variable 'variable' is assigned but its value is never used.
#pragma warning disable 219
// Unreachable code detected.
#pragma warning disable 162

<actions.(actionScope).header>

<@imports>
using System.Collections.Generic;
using Antlr.Runtime;
<if(TREE_PARSER)>
using Antlr.Runtime.Tree;
using RewriteRuleITokenStream = Antlr.Runtime.Tree.RewriteRuleTokenStream;
<endif>
using Stack = System.Collections.Generic.Stack<object>;
using List = System.Collections.IList;
using ArrayList = System.Collections.Generic.List<object>;
<if(backtracking)>
using Map = System.Collections.IDictionary;
using HashMap = System.Collections.Generic.Dictionary<object, object>;
<endif>
<@end>

<if(actions.(actionScope).namespace)>
namespace <actions.(actionScope).namespace>
{
<endif>

<docComment>
<recognizer>
<if(actions.(actionScope).namespace)>

} // namespace <actions.(actionScope).namespace>

<endif>
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="IToken",
 filterMode, superClass="Lexer") ::= <<
public partial class <grammar.recognizerName> : <@superClassName><superClass><@end>
{
 <tokens:{ public const int <it.name>=<it.type>; }; separator="\n">
 <scopes:{ <if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>>>
 <actions.lexer.members>

```

```

// delegates
<grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>; separator="\n">
// delegators
<grammar.delegators:
 {g|public <g.recognizerName> <g.delegateName()>; separator="\n">
<last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

public <grammar.recognizerName>() {}<! needed by subclasses !>
public <grammar.recognizerName>(ICharStream input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>>)
 : this(input, new RecognizerSharedState()<grammar.delegators:{g|, <g.delegateName()>>)
 {
 }
public <grammar.recognizerName>(ICharStream input, RecognizerSharedState state<grammar.delegators:{g|,
<g.recognizerName> <g.delegateName()>>)
 : base(input, state)
 {
<if(memoize)>
<if(grammar.grammarIsRoot)>
 state.ruleMemo = new System.Collections.Generic.Dictionary<int, int>[<numRules>+1];<\n><! index from 1..n !>
<endif>
<endif>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|, <p.delegateName()>>,
this);}; separator="\n">
 <grammar.delegators:
 {g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
 <last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
 }
public override string GrammarFileName { get { return "<fileName>"; } }

<if(filterMode)>
<filteringNextToken()>
<endif>
<rules; separator="\n\n">

<synpreds:{p | <lexerSynpred(p)>>}>

#region DFA
<cyclicDFAs:{dfa | DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">

protected override void InitDFAs()
{
 base.InitDFAs();
 <cyclicDFAs:{dfa | dfa<dfa.decisionNumber> = new DFA<dfa.decisionNumber>(this<if(dfa.specialStateSTs)>,
new SpecialStateTransitionHandler(specialStateTransition<dfa.decisionNumber>)<endif>);}; separator="\n">

```

```

}

<cyclicDFAs:cyclicDFA>< ! dump tables for all DFA !>
#endregion

}
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
public override IToken NextToken()
{
for (; ;)
{
if (input.LA(1)==CharStreamConstants.EOF)
{
return TokenConstants.EOF_TOKEN;
}
state.token = null;
state.channel = TokenConstants.DEFAULT_CHANNEL;
state.tokenStartCharIndex = input.Index;
state.tokenStartCharPositionInLine = input.CharPositionInLine;
state.tokenStartLine = input.Line;
state.text = null;
try
{
int m = input.Mark();
state.backtracking=1;<! means we won't throw slow exception !>
state.failed=false;
mTokens();
state.backtracking=0;
<! mTokens backtracks with synpred at backtracking==2
and we set the synpredgate to allow actions at level 1. !>
if (state.failed)
{
input.Rewind(m);
input.Consume(); <! advance one char and try again !>
}
else
{
Emit();
return state.token;
}
}
}

```

```

 }
 catch (RecognitionException re)
 {
 // shouldn't happen in backtracking mode, but...
 ReportError(re);
 Recover(re);
 }
}

public override void Memoize(IIntStream input, int ruleIndex, int ruleStartIndex)
{
 if (state.backtracking > 1)
 base.Memoize(input, ruleIndex, ruleStartIndex);
}

public override bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
 if (state.backtracking > 1)
 return base.AlreadyParsedRule(input, ruleIndex);

 return false;
}
>>

actionGate() ::= "state.backtracking == 0"

filteringActionGate() ::= "state.backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass,
 ASTLabelType="object", labelType, members, rewriteElementType,
 filterMode) ::= <<
public partial class <grammar.recognizerName> : <@superClassName><superClass><@end>
{
<if(grammar.grammarIsRoot)>
 public static readonly string[] tokenNames = new string[] {
 "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
 };<\n>
<endif>
 <tokens:{ public const int <it.name>=<it.type>;}; separator="\n">

 // delegates
 <grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 // delegators
 <grammar.delegators:

```

```

 { g|public <g.recognizerName> <g.delegateName(>);}; separator="\n">
<last(grammar.delegators):{ g|public <g.recognizerName> gParent;}>

<scopes:{ <if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>>
<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
public <grammar.recognizerName>(<inputStreamType> input<grammar.delegators:{ g|, <g.recognizerName>
<g.delegateName(>}>)
: this(input, new RecognizerSharedState(<grammar.delegators:{ g|, <g.delegateName(>}>)
{
}
public <grammar.recognizerName>(<inputStreamType> input, RecognizerSharedState
state<grammar.delegators:{ g|, <g.recognizerName> <g.delegateName(>}>)
: base(input, state)
{
<parserCtorBody(>
<grammar.directDelegates:
{ g|<g.delegateName(> = new <g.recognizerName>(input, state<trunc(g.delegators):{ p|, <p.delegateName(>}>,
this);}; separator="\n">
<grammar.indirectDelegates:{ g | <g.delegateName(> = <g.delegateName(>.delegateName(>.<g.delegateName(>};
separator="\n">
<last(grammar.delegators):{ g|gParent = <g.delegateName(>};}>
}
<@end>

public override string[] GetTokenNames() { return
<grammar.composite.rootGrammar.recognizerName>.tokenNames; }
public override string GrammarFileName { get { return "<fileName>"; } }

<members>

#region Rules
<rules; separator="\n\n">
#endregion

<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
// Delegated rules
<grammar.delegatedRules:{ ruleDescriptor|
public <returnType(> <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
<!throws RecognitionException !>{ <if(ruleDescriptor.hasReturnValue)>return
<endif><ruleDescriptor.grammar:delegateName(>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes:
{ a|<a.name>}; separator=", ">); \} }; separator="\n">

#region Synpreds
<synpreds:{ p | <synpred(p)>}>
#endregion

```



```

#region DFA
<cyclicDFAs:{ dfa | DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">

protected override void InitDFAs()
{
 base.InitDFAs();
 <cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = new DFA<dfa.decisionNumber>(this<if(dfa.specialStateSTs)>,
new SpecialStateTransitionHandler(specialStateTransition<dfa.decisionNumber>)<endif>);}; separator="\n">
}

<cyclicDFAs:cyclicDFA()><! dump tables for all DFA !>
#endregion

#region Follow Sets
public static class Follow
{
 <bitsets:bitset(name={ _<it.name>_in_<it.inName><it.tokenIndex>},
 words64=it.bits)>
}
#endregion
}
>>

parserCtorBody() ::= <<
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo = new System.Collections.Generic.Dictionary<int,
int>[<length(grammar.allImportedRules)>+1];<\n><! index from 1..n !>
<endif>
<endif>
<grammar.delegators:
{g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets,
 ASTLabelType="object", superClass="Parser", labelType="IToken",
 members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ITokenStream", rewriteElementType="IToken", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
 numRules, bitsets, labelType={<ASTLabelType>}, ASTLabelType="object",
superClass={<if(filterMode)><if(buildAST)>TreeRewriter<else>TreeFilter<endif><else>TreeParser<endif>},
members={<actions.treeparser.members>},
filterMode) ::= <<

```

```

<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
public <!final !>void <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>><! throws
RecognitionException!>
{
<ruleLabelDefs()>
<if(trace)>
traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
try
{
<block>
}
finally
{
traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
}
<else>
<block>
<endif>
}
// $ANTLR end <ruleName>
>>

synpred(name) ::= <<
public <!final !>bool <name>()
{
state.backtracking++;
<@start()>
int start = input.Mark();
try
{
<name>_fragment(); // can never throw exception
}
catch (RecognitionException re)
{
System.Console.Error.WriteLine("impossible: "+re);
}
}

```

```

bool success = !state.failed;
input.Rewind(start);
<@stop()>
state.backtracking--;
state.failed=false;
return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if (state.backtracking>0 && AlreadyParsedRule(input, <ruleDescriptor.index>)) { return <ruleReturnValue()>; }
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (state.failed) return <ruleReturnValue()>;<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (state.backtracking>0) { state.failed=true; return <ruleReturnValue()>;}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
// <fileName>:<description>
<csharpVisibilityMap.(ruleDescriptor.modifier)> <returnType()> <ruleName>(
<ruleDescriptor.parameterScope:parameterScope(scope=it)>)<! throws RecognitionException!>
{
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
<ruleLabelDefs()>
<ruleDescriptor.actions.init>
<@preamble()>
try

```

```

{
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>
 }
<if(exceptions)>
 <exceptions: {e|<catch(decl=e.decl,action=e.action)><\n> }>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
<else>
 catch (RecognitionException re)
 {
 ReportError(re);
 Recover(input,re);
 <@setErrorReturnValue()>
 }<\n>
<endif>
<endif>
<endif>
 finally
 {
 <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
 }
 <@postamble()>
 return <ruleReturnValue()>;
}
// $ANTLR end "<ruleName>"
>>

```

```

catch(decl,action) ::= <<
catch (<e.decl>)
{
 <e.action>
}
>>

```

```

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> retval = new <returnType()>();
retval.start = input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |

```

```

<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.Index;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{<it>_scope.PushScope(this);}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_scope.PushScope(this);}; separator="\n">
>>

ruleScopeCleanup() ::= <<
<ruleDescriptor.useScopes:{<it>_scope.PopScope(this);}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_scope.PopScope(this);}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {<labelType> <it.label.text>=null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: {List list_<it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels:ruleLabelDef(label=it); separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<labelType> <it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.charLabels:{int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {List list_<it.label.text>=null;}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>

```

```

<else>
retval
<endif>
<endif>
<endif>
>>

ruleCleanUp() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop = input.LT(-1);<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking>0) { Memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
<csharpVisibilityMap.(ruleDescriptor.modifier)> void
m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
{
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
try
{
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block><\n>
<else>
int _type = <ruleName>;
int _channel = DEFAULT_TOKEN_CHANNEL;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>

```

```

<ruleCleanup()>
state.type = _type;
state.channel = _channel;
<(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally
{
<if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeCleanup()>
<memoize()>
}
}
// $ANTLR end "<ruleName>"
>>

```

```

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */

```

```

tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
public override void mTokens()<! throws RecognitionException!>
{
<block><\n>
}
>>

```

```

// S U B R U L E S

```

```

/** A (...) subrule with multiple alternatives */

```

```

block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>)
{
<alts:altSwitchCase()>
}
<@postbranch()>
>>

```

```

/** A rule block with multiple alternatives */

```

```

ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int alt<decisionNumber>=<maxAlt>;

```

```

<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:altSwitchCase()>
}
>>

```

```

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

```

```

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

```

```

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int cnt<decisionNumber>=0;
<decls>
<@preloop()>
for (; ;)
{
int alt<decisionNumber>=<maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:altSwitchCase()>
default:
if (cnt<decisionNumber> >= 1)
goto loop<decisionNumber>;

<ruleBacktrackFailure()>

```



```

EarlyExitException eee<decisionNumber> = new EarlyExitException(<decisionNumber>, input);
<@earlyExitException()>
throw eee<decisionNumber>;
}
cnt<decisionNumber>++;
}
loop<decisionNumber>:
;

<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// <fileName>:<description>
<decls>
<@preloop()>
for (; ;)
{
int alt<decisionNumber>=<maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:altSwitchCase()>
default:
goto loop<decisionNumber>;
}
}

loop<decisionNumber>:
;

<@postloop()>
>>

```

closureBlockSingleAlt ::= closureBlock

```

/** Optional blocks (x)? are translated to (x|) by before code generation
* so we can just use the normal block template
*/

```

optionalBlock ::= block

optionalBlockSingleAlt ::= block

```

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
case <i>:
 <@prealt(>
 <it>
 break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
 <@declarations(>
 <elements:element(>
 <rew>
 <@cleanup(>
 }
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch(>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label>=<labelType><endif>Match(input,<token>,Follow._<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new ArrayList();
list_<label>.Add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
Match(<char>); <checkRuleBacktrackFailure()>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchRange(<a>,); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>
<else>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
<endif>
if (<s>)
{
input.Consume();
<postmatchCode>
<if(!LEXER)>
state.errorRecovery=false;
<endif>
<if(backtracking)>state.failed=false;<endif>
}
else
{
<ruleBacktrackFailure()>
MismatchedSetException mse = new MismatchedSetException(null,input);
<@mismatchedSetException()>
<if(LEXER)>
Recover(mse);
throw mse;
<else>

```

```

throw mse;
<! use following code to make it recover inline; remove throw mse;
recoverFromMismatchedSet(input,mse,Follow._set_in_<ruleName><elementIndex>);
!>
<endif>
}<\n>
>>

```

```

matchSetUnchecked(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>
<else>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
<endif>
input.Consume();
<postmatchCode>
<if(!LEXER)>
state.errorRecovery=false;
<endif>
<if(backtracking)>state.failed=false;<endif>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
int <label>Start = GetCharIndex();
Match(<string>); <checkRuleBacktrackFailure()>
<label> = new CommonToken(input, TokenConstants.INVALID_TOKEN_TYPE,
TokenConstants.DEFAULT_CHANNEL, <label>Start, GetCharIndex()-1);
<else>
Match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>

```

```
>>
```

```
wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>
```

```
/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure(>
>>
```

```
wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>
```

```
/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(Follow._<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope:delegateName(>.<endif><rule.name>(<args; separator=", ">);<\n>
state._fsp--;
<checkRuleBacktrackFailure(>
>>
```

```
/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>
```

```
/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int <label>Start<elementIndex> = GetCharIndex();
```

```

<if(scope)><scope:delegateName().<endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<label> = new CommonToken(input, TokenConstants.INVALID_TOKEN_TYPE,
TokenConstants.DEFAULT_CHANNEL, <label>Start<elementIndex>, GetCharIndex()-1);
<else>
<if(scope)><scope:delegateName().<endif>m<rule.name>(<args; separator=", ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = GetCharIndex();
Match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, EOF, TokenConstants.DEFAULT_CHANNEL,
<label>Start<elementIndex>, GetCharIndex()-1);
<else>
Match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==TokenConstants.DOWN)
{
Match(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is

```

```

* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)
{
<ruleBacktrackFailure()>
throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
else
{
<if(eotPredictsAlt)>
alt<decisionNumber>=<eotPredictsAlt>;
<else>
<ruleBacktrackFailure()>
NoViableAltException nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>,
input);<\n>
<@noViableAltException()>
throw nvae;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
* for the bypass alternative. It delays error detection but this
* is faster, smaller, and more what people expect. For (X)? people
* expect "if (LA(1)==X) match(X);" and that's it.
*/
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
* loop. If end-of-token (EOT) predicts any of the targets then it
* should act like a default clause (i.e., no error can be generated).
* This is used only in the lexer so that for ('a')* on the end of a rule
* anything other than 'a' predicts exiting.
*/
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>

```

```

<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
{
alt<decisionNumber>=<eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>;"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>)
{
<targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
alt<decisionNumber>=<eotPredictsAlt>;
break;<\n>
<else>
{
<ruleBacktrackFailure()>
NoViableAltException nvae = new NoViableAltException("<description>", <decisionNumber>, <stateNumber>,
input);<\n>
<@noViableAltException()>
throw nvae;
}<\n>
<endif>

```



```
}<\n>
```

```
>>
```

```
dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)
```

```
{
```

```
<edges; separator="\n">
```

```
}<\n>
```

```
>>
```

```
dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)
```

```
{
```

```
<edges; separator="\n"><\n>
```

```
<if(eotPredictsAlt)>
```

```
default:
```

```
alt<decisionNumber>=<eotPredictsAlt>;
```

```
break;<\n>
```

```
<endif>
```

```
}<\n>
```

```
>>
```

```
dfaEdgeSwitch(labels, targetState) ::= <<
```

```
<labels: { case <it>: }; separator="\n">
```

```
{
```

```
<targetState>
```

```
}
```

```
break;
```

```
>>
```

```
// C y c l i c D F A
```

```
/** The code to initiate execution of a cyclic DFA; this is used
```

```
* in the rule to predict an alt just like the fixed DFA case.
```

```
* The <name> attribute is inherited via the parser, lexer, ...
```

```
*/
```

```
dfaDecision(decisionNumber,description) ::= <<
```

```
alt<decisionNumber> = dfa<decisionNumber>.Predict(input);
```

```
>>
```

```
/* Dump DFA tables as run-length-encoded Strings of octal values.
```

```
* Can't use hex as compiler translates them before compilation.
```

```
* These strings are split into multiple, concatenated strings.
```

```
* Java puts them back together at compile time thankfully.
```

```
* Java cannot handle large static arrays, so we're stuck with this
```

```
* encode/decode approach. See analysis and runtime DFA for
```

```
* the encoding methods.
```

```
*/
```

```

cyclicDFA(dfa) ::= <<
class DFA<dfa.decisionNumber> : DFA
{

const string DFA<dfa.decisionNumber>_eotS =
"<dfa.javaCompressedEOT; wrap="\n\t\>";
const string DFA<dfa.decisionNumber>_eofS =
"<dfa.javaCompressedEOF; wrap="\n\t\>";
const string DFA<dfa.decisionNumber>_minS =
"<dfa.javaCompressedMin; wrap="\n\t\>";
const string DFA<dfa.decisionNumber>_maxS =
"<dfa.javaCompressedMax; wrap="\n\t\>";
const string DFA<dfa.decisionNumber>_acceptS =
"<dfa.javaCompressedAccept; wrap="\n\t\>";
const string DFA<dfa.decisionNumber>_specialS =
"<dfa.javaCompressedSpecial; wrap="\n\t\>>";
static readonly string[] DFA<dfa.decisionNumber>_transitionS =
{
<dfa.javaCompressedTransition:{s|<s; wrap="\n\>"; separator=",\n">
};

static readonly short[] DFA<dfa.decisionNumber>_eot =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eotS);
static readonly short[] DFA<dfa.decisionNumber>_eof =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eofS);
static readonly char[] DFA<dfa.decisionNumber>_min =
DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
static readonly char[] DFA<dfa.decisionNumber>_max =
DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
static readonly short[] DFA<dfa.decisionNumber>_accept =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
static readonly short[] DFA<dfa.decisionNumber>_special =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_specialS);
static readonly short[][] DFA<dfa.decisionNumber>_transition;

static DFA<dfa.decisionNumber>()
{
int numStates = DFA<dfa.decisionNumber>_transitionS.Length;
DFA<dfa.decisionNumber>_transition = new short[numStates][];
for (int i=0; i < numStates; i++)
{
DFA<dfa.decisionNumber>_transition[i] =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_transitionS[i]);
}
}

public DFA<dfa.decisionNumber>(BaseRecognizer recognizer<if(dfa.specialStateSTs)>,
SpecialStateTransitionHandler specialStateTransition<endif>)

```

```

<if(dfa.specialStateSTs)>
 : base(specialStateTransition)
<endif>
{
 this.recognizer = recognizer;
 this.decisionNumber = <dfa.decisionNumber>;
 this.eot = DFA<dfa.decisionNumber>_eot;
 this.eof = DFA<dfa.decisionNumber>_eof;
 this.min = DFA<dfa.decisionNumber>_min;
 this.max = DFA<dfa.decisionNumber>_max;
 this.accept = DFA<dfa.decisionNumber>_accept;
 this.special = DFA<dfa.decisionNumber>_special;
 this.transition = DFA<dfa.decisionNumber>_transition;
}
public override string GetDescription()
{
 return "<dfa.description>";
}
<@errorMethod()>
}<\n>
<if(dfa.specialStateSTs)>
int specialStateTransition<dfa.decisionNumber>(DFA dfa, int s, IInputStream _input)<! throws
NoViableAltException!>
{
 <if(LEXER)>
 IInputStream input = _input;
 <endif>
 <if(PARSER)>
 ITokenStream input = (ITokenStream)_input;
 <endif>
 <if(TREE_PARSER)>
 ITreeNodeStream input = (ITreeNodeStream)_input;
 <endif>
 int _s = s;
 switch (s)
 {
 <dfa.specialStateSTs:{state |
 case <i0><:! compressed special state numbers 0..n-1 !>
 <state>}; separator="\n">
 }
 <if(backtracking)>
 if (state.backtracking>0) {state.failed=true; return -1;}<\n>
 <endif>
 NoViableAltException nvae = new NoViableAltException(dfa.GetDescription(), <dfa.decisionNumber>, _s, input);
 dfa.Error(nvae);
 throw nvae;
}<\n>
<endif>

```

```

>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(1);<\n>
<if(semPredState)><<! get next lookahead symbol to test edges, then rewind !>
int index<decisionNumber>_<stateNumber> = input.Index;
input.Rewind();<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)><<! return input cursor to state before we rewound !>
input.Seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if (s>=0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) { s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands) ::= "<first(operands)><rest(operands):{ o | ||<o> }>"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>===<atom>"

```

```

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber>)\>=<lower> && LA<decisionNumber>_<stateNumber>\<=<upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(input.LA(<k>)\>=<lower>
&& input.LA(<k>)\<=<upper>)"

setTest(ranges) ::= "<ranges; separator=\\\"\\\">"

// A T T R I B U T E S

attributeScope(scope) ::= <<
<if(scope.attributes)>
protected class <scope.name>_scope
{
<if(scope.actions.scopeinit)>
public <scope.name>_scope()
{
<scope.actions.scopeinit>
}<\n>
<endif>
<if(scope.actions.scopeafter)>
void CleanUpScope()
{
<scope.actions.scopeafter>
}<\n>
<endif>
public static void PushScope(<scope.grammar.recognizerName> grammar)
{
grammar.<scope.name>_stack.Push(new <scope.name>_scope());
}
public static void PopScope(<scope.grammar.recognizerName> grammar)
{
grammar.<scope.name>_stack.Pop(<if(scope.actions.scopeafter)>.CleanUpScope(<endif>);
}

<scope.attributes:{ public <it.decl>;}; separator="\n">
}
protected Stack\<<scope.name>_scope\> <scope.name>_stack = new Stack\<<scope.name>_scope\>();<\n>
<endif>
>>

```

```

globalAttributeScope(scope) ::= <<
<attributeScope(...)>
>>

ruleAttributeScope(scope) ::= <<
<attributeScope(...)>
>>

returnStructName() ::= "<it.name>_return"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

/** Generate the C# type associated with a single or multiple return
* values.
*/
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.grammar.recognizerName>.<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
* must be an object, default value is "null".
*/
initValue(typeName) ::= <<
default(<typeName>)
>>

```

```

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public <!static !>class <ruleDescriptor:returnStructName()> :
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope
{
<scope.attributes:{ public <it.decl>; }; separator="\n">
<@ruleReturnMembers()>
}
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name>
<else>
((<scope>_scope)<scope>_stack.Peek()).<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name> =<expr>;
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name> =<expr>;
<else>
((<scope>_scope)<scope>_stack.Peek()).<attr.name> =<expr>;

```

```

<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?<scope>.<attr.name>:<initValue(attr.type)>)
<else>
<scope>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>;
<else>
<attr.name> =<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(<scope>!=null?<scope>.Text:null)"
tokenLabelPropertyRef_type(scope,attr) ::= "(<scope>!=null?<scope>.Type:0)"
tokenLabelPropertyRef_line(scope,attr) ::= "(<scope>!=null?<scope>.Line:0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(<scope>!=null?<scope>.CharPositionInLine:0)"

```



```

tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>!=null?<scope>.Channel:0)"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>!=null?<scope>.TokenIndex:0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "<scope>!=null?Integer.valueOf(<scope>.Text):0)"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>!=null?((<labelType><scope>.start):null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>!=null?((<labelType><scope>.stop):null)"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>!=null?((<ASTLabelType><scope>.tree):null)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(<scope>!=null?(input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(<scope>.start),
input.TreeAdaptor.GetTokenStopIndex(<scope>.start))):null)
<else>
(<scope>!=null?input.ToString(<scope>.start,<scope>.stop):null)
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>!=null?<scope>.st:null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
"<scope>!=null?<scope>.Type:0)"

lexerRuleLabelPropertyRef_line(scope,attr) ::=
"<scope>!=null?<scope>.Line:0)"

lexerRuleLabelPropertyRef_pos(scope,attr) ::=
"<scope>!=null?<scope>.CharPositionInLine:-1)"

lexerRuleLabelPropertyRef_channel(scope,attr) ::=
"<scope>!=null?<scope>.Channel:0)"

lexerRuleLabelPropertyRef_index(scope,attr) ::=
"<scope>!=null?<scope>.TokenIndex:0)"

lexerRuleLabelPropertyRef_text(scope,attr) ::=
"<scope>!=null?<scope>.Text:null)"

lexerRuleLabelPropertyRef_int(scope,attr) ::=
"<scope>!=null?Integer.valueOf(<scope>.Text):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "((<labelType>)retval.start)"
rulePropertyRef_stop(scope,attr) ::= "((<labelType>)retval.stop)"
rulePropertyRef_tree(scope,attr) ::= "((<ASTLabelType>)retval.tree)"

```

```

rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(retval.start),
input.TreeAdaptor.GetTokenStopIndex(retval.start))
<else>
input.ToString(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(GetCharIndex()-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int.Parse(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>";
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>";

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
<action>
}
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static readonly BitSet <name> = new BitSet(new ulong[] { <words64: {<it>UL}; separator=","> }); <\n>
>>

codeFileExtension() ::= ".cs"

```

```
true() ::= "true"
false() ::= "false"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp3/CSharp3.stg
```

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```
*/
```

```
group AST;
```

```
@outputFile.imports() ::= <<
```

```
<@super.imports()>
```

```
<if(!TREE_PARSER)><! tree parser would already have imported !>
```

```
using Antlr.Runtime.Tree;<\n>
```

```
<endif>
```

```
>>
```

```
@genericParser.members() ::= <<
```

```

<@super.members()>
<parserMembers()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
protected ITreeAdaptor adaptor = new CommonTreeAdaptor();<\n>
public ITreeAdaptor TreeAdaptor
{
 get { return this.adaptor; }
 set {
this.adaptor = value;
<grammar.directDelegates:{g|<g:delegateName()>.TreeAdaptor = this.adaptor;}>
 }
}
>>

@returnScope.ruleReturnMembers() ::= <<
private <ASTLabelType> tree;
override public object Tree
{
 get { return tree; }
 set { tree = (<ASTLabelType>) value; }
}
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> root_0 = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,
 ruleDescriptor.wildcardTreeListLabels]:{<ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.tokenListLabels:{<ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
 :{RewriteRule<rewriteElementType>Stream stream_<it> = new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
 :{RewriteRuleSubtreeStream stream_<it> = new RewriteRuleSubtreeStream(adaptor,"rule <it>");};
separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative

```

```

* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType>)adaptor.GetNilNode();<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.Add(<label>.Tree);
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<

```

```

<ruleRefTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.Add(<label>.Tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {<n>
<endif>
<prevRuleRootRef().Tree = root_0;
<rewriteCodeLabels()>
root_0 = (<ASTLabelType>)adaptor.GetNilNode();
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef().Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);

```

```

input.ReplaceChildren(adaptor.GetParent(retval.Start),
 adaptor.GetChildIndex(retval.Start),
 adaptor.GetChildIndex(_last),
 retval.Tree);
<endif>
<endif>
<! if parser or rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.Tree = root_0;
<endif>
<if(!rewriteMode)>
<prevRuleRootRef(>.Tree = root_0;
<endif>
<if(backtracking)>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
 :{RewriteRule<rewriteElementType>Stream stream_<it> = new
RewriteRule<rewriteElementType>Stream(adaptor, "token <it>", <it>);};
 separator="\n"
>
<referencedTokenListLabels
 :{RewriteRule<rewriteElementType>Stream stream_<it> = new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>", list_<it>);};
 separator="\n"
>
<referencedWildcardLabels
 :{RewriteRuleSubtreeStream stream_<it> = new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>);};
 separator="\n"
>
<referencedWildcardListLabels
 :{RewriteRuleSubtreeStream stream_<it> = new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>);};
 separator="\n"
>
<referencedRuleLabels
 :{RewriteRuleSubtreeStream stream_<it> = new RewriteRuleSubtreeStream(adaptor, "rule <it>", <it>!=null ?
<it>.Tree : null);};
 separator="\n"
>
<referencedRuleListLabels
 :{RewriteRuleSubtreeStream stream_<it> = new RewriteRuleSubtreeStream(adaptor, "token <it>", list_<it>);};
 separator="\n"
>
>>

```

```

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
if (<referencedElementsDeep:{el | stream_<el>.HasNext()}; separator=" || ">)
{
 <alt>
}
<referencedElementsDeep:{el | stream_<el>.Reset();<\n>}>
>>

rewriteClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
while (<referencedElements:{el | stream_<el>.HasNext()}; separator=" || ">)
{
 <alt>
}
<referencedElements:{el | stream_<el>.Reset();<\n>}>
>>

rewritePositiveClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.HasNext()}; separator=" || ">)) {
 throw new RewriteEarlyExitException();
}
while (<referencedElements:{el | stream_<el>.HasNext()}; separator=" || ">)
{
 <alt>
}
<referencedElements:{el | stream_<el>.Reset();<\n>}>
>>

rewriteAlt(a) ::= <<

```



```

// <a.description>
<if(a.pred)>
if (<a.pred>)
{
 <a.alt>
}<\n>
<else>
{
 <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
 <ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.GetNilNode();
 <root:rewriteElement()>
 <children:rewriteElement()>
 adaptor.AddChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
adaptor.AddChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

```

```

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>);<\n>
>>

rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>);<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.Tree.
*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<rule>.NextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<rule>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteNodeAction(action) ::= <<
adaptor.AddChild(root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<

```

```

root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<action>, root_<treeLevel>);<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>
new <hetero>(<tokenType><if(args)>, <args; separator=","><endif>)
<else>
(<ASTLabelType>)adaptor.Create(<tokenType>, <args; separator=","><if(!args)>"<tokenType>"<endif>)
<endif>
>>

createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
new <hetero>(stream_<token>.NextToken(<if(args)>, <args; separator=","><endif>)
<else>
<if(args)> <! must create new node from old !>
adaptor.Create(<token>, <args; separator=",">)
<else>
stream_<token>.NextNode()
<endif>
<endif>
>>

```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp2/AST.stg
```

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp/AST.stg
```

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(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
*/
```

```
/* in sync with Java/Java.stg revision 107 */
```

```
group Python implements ANTLRCore;
```

```
/** The overall file structure of a recognizer; stores methods for rules
* and cyclic DFAs plus support code.
```

```
*/
```

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
docComment, recognizer,
name, tokens, tokenNames, rules, cyclicDFAs,
bitsets, buildTemplate, buildAST, rewriteMode, profile,
backtracking, synpreds, memoize, numRules,
fileName, ANTLRVersion, generatedTimestamp, trace,
```

```

scopes, superClass, literals) ::=
<<
$ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<@imports>
import sys
from antlr3 import *
<if(TREE_PARSER)>
from antlr3.tree import *<\n>
<endif>
from antlr3.compat import set, frozenset
<@end>

<actions.(actionScope).header>

<! <docComment> !>

for convenience in actions
HIDDEN = BaseRecognizer.HIDDEN

token types
<tokens:{<it.name>=<it.type>}; separator="\n">

<recognizer>

<if(actions.(actionScope).main)>
<actions.(actionScope).main>
<else>
def main(argv, stdin=sys.stdin, stdout=sys.stdout, stderr=sys.stderr):
<if(LEXER)>
 from antlr3.main import LexerMain
 main = LexerMain(<recognizer.name>)<\n>
<endif>
<if(PARSER)>
 from antlr3.main import ParserMain
 main = ParserMain("<recognizer.grammar.name>Lexer", <recognizer.name>)<\n>
<endif>
<if(TREE_PARSER)>
 from antlr3.main import WalkerMain
 main = WalkerMain(<recognizer.name>)<\n>
<endif>
 main.stdin = stdin
 main.stdout = stdout
 main.stderr = stderr
 main.execute(argv)<\n>
<endif>

<actions.(actionScope).footer>

```

```

if __name__ == '__main__':
 main(sys.argv)

>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
 filterMode, superClass="Lexer") ::= <<
<grammar.directDelegates:
{g|from <g.recognizerName> import <g.recognizerName>; separator="\n">

class <grammar.recognizerName>(<@superClassName><superClass><@end>):
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>

 grammarFileName = "<fileName>"
 antlr_version = version_str_to_tuple("<ANTLRVersion>")
 antlr_version_str = "<ANTLRVersion>"

 def __init__(self<grammar.delegates:{g|, <g.delegateName()>}>, input=None, state=None):
 if state is None:
 state = RecognizerSharedState()
 super(<grammar.recognizerName>, self).__init__(input, state)

<if(memoize)>
<if(grammar.grammarIsRoot)>
 self._state.ruleMemo = {}
<endif>
<endif>

 <grammar.directDelegates:
 {g|self.<g.delegateName()> = <g.recognizerName>(<trunc(g.delegates):{p|<p.delegateName()>, }>self, input,
state)}; separator="\n">
 <grammar.delegates:
 {g|self.<g.delegateName()> = <g.delegateName()>; separator="\n">
 <last(grammar.delegates):
 {g|self.gParent = <g.delegateName()>; separator="\n">

 <cyclicDFAs:{dfa | <cyclicDFAInit(dfa)>}; separator="\n">

 <actions.lexer.init>

 <actions.lexer.members>

<if(filterMode)>
 <filteringNextToken()>
<endif>

```

```
<rules; separator="\n\n">
```

```
<synpreds:{p | <lexerSynpred(p)>}>
```

```
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
```

```
>>
```

```
/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
```

```
filteringNextToken() ::= <<
```

```
def nextToken(self):
```

```
 while True:
```

```
 if self.input.LA(1) == EOF:
```

```
 return EOF_TOKEN
```

```
 self._state.token = None
```

```
 self._state.channel = DEFAULT_CHANNEL
```

```
 self._state.tokenStartCharIndex = self.input.index()
```

```
 self._state.tokenStartCharPositionInLine = self.input.charPositionInLine
```

```
 self._state.tokenStartLine = self.input.line
```

```
 self._state._text = None
```

```
 try:
```

```
 m = self.input.mark()
```

```
 try:
```

```
 # means we won't throw slow exception
```

```
 self._state.backtracking = 1
```

```
 try:
```

```
 self.mTokens()
```

```
 finally:
```

```
 self._state.backtracking = 0
```

```
 except BacktrackingFailed:
```

```
 # mTokens backtracks with synpred at backtracking==2
```

```
 # and we set the synpredgate to allow actions at level 1.
```

```
 self.input.rewind(m)
```

```
 self.input.consume() # advance one char and try again
```

```
 else:
```

```
 self.emit()
```

```
 return self._state.token
```

```
 except RecognitionException, re:
```

```

 # shouldn't happen in backtracking mode, but...
 self.reportError(re)
 self.recover(re)

def memoize(self, input, ruleIndex, ruleStartIndex, success):
 if self._state.backtracking > 1:
 # is Lexer always superclass?
 <@superClassName><superClass><@end>.memoize(self, input, ruleIndex, ruleStartIndex, success)

def alreadyParsedRule(self, input, ruleIndex):
 if self._state.backtracking > 1:
 return <@superClassName><superClass><@end>.alreadyParsedRule(self, input, ruleIndex)
 return False

>>

actionGate() ::= "self._state.backtracking == 0"

filteringActionGate() ::= "self._state.backtracking == 1"

/** How to generate a parser */

genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass, filterMode,
 ASTLabelType="Object", labelType, members, rewriteElementType,
 init) ::= <<
<if(grammar.grammarIsRoot)>
token names
tokenNames = [
 "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>",
 <tokenNames; wrap, separator=", ">
]<\n>
<else>
from <grammar.composite.rootGrammar.recognizerName> import tokenNames<\n>
<endif>
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeClass(scope=it)><endif>}>

<grammar.directDelegates:
{g|from <g.recognizerName> import <g.recognizerName>; separator="\n">

<rules:{<ruleAttributeScopeClass(scope=it.ruleDescriptor.ruleScope)>}>

class <grammar.recognizerName>(<@superClassName><superClass><@end>):
 grammarFileName = "<fileName>"
 antlr_version = version_str_to_tuple("<ANTLRVersion>")

```



```

antlr_version_str = "<ANTLRVersion>"
tokenNames = tokenNames

def __init__(self<grammar.delegators:{g| <g:delegateName()>}>, input, state=None, *args, **kwargs):
 if state is None:
 state = RecognizerSharedState()

 <@args()>
 super(<grammar.recognizerName>, self).__init__(input, state, *args, **kwargs)

<if(memoize)>
<if(grammar.grammarIsRoot)>
 self._state.ruleMemo = {}
<endif>
<endif>

 <cyclicDFAs:{dfa | <cyclicDFAInit(dfa)>}; separator="\n">

 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeStack(scope=it)><endif>}>
 <rules:{<ruleAttributeScopeStack(scope=it.ruleDescriptor.ruleScope)>}>

 <init>

 <grammar.delegators:
 {g|self.<g:delegateName()> = <g:delegateName()>}; separator="\n">
 <grammar.directDelegates:
 {g|self.<g:delegateName()> = <g.recognizerName>(<trunc(g.delegators):{p|<p:delegateName()>, }>self, input,
state)); separator="\n">
 <!grammar.directDelegates:
 {g|self.<g:delegateName()> = <g.recognizerName>(self<grammar.delegators:{g| <g:delegateName()>}>,
input, state)); separator="\n"!>
 <last(grammar.delegators):
 {g|self.gParent = self.<g:delegateName()>}; separator="\n">

 <@init>
 <@end>

 <@members>
 <@end>

 <members>

 <rules; separator="\n\n">

 <! generate rule/method definitions for imported rules so they
 appear to be defined in this recognizer. !>
 # Delegated rules

```

```

<grammar.delegatedRules:{ruleDescriptor| <delegateRule(ruleDescriptor)> }; separator="\n">

<synpreds:{p | <synpred(p)>}>

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

<bitsets:{FOLLOW_<it.name>_in_<it.inName><it.tokenIndex> = frozenset([<it.tokenTypes:{<it>}separator=",
">])<n>}>

>>

delegateRule(ruleDescriptor) ::= <<
def <ruleDescriptor.name>(self, <ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<\> <if(ruleDescriptor.hasReturnValue)>return
<endif>self.<ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes: {a|<a.name>} ; separator=", ">)

>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType="object",
superClass="Parser", labelType="Token", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="TokenStream", rewriteElementType="Token", init={<actions.parser.init>}, ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="Object", superClass="TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="TreeNodeStream", rewriteElementType="Node",
init={<actions.treeparser.init>}, ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
$ANTLR start "<ruleName>"
def <ruleName>_fragment(self, <ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<if(trace)>
 self.traceIn("<ruleName>_fragment", <ruleDescriptor.index>)

```

```

try:
 <block>

finally:
 self.traceOut("<ruleName>_fragment", <ruleDescriptor.index>)

<else>
 <block>
<endif>
$ANTLR end "<ruleName>"

>>

synpred(name) ::= <<
def <name>(self):
 self._state.backtracking += 1
 <@start()>
 start = self.input.mark()
 try:
 self.<name>_fragment()
 except BacktrackingFailed:
 success = False
 else:
 success = True
 self.input.rewind(start)
 <@stop()>
 self._state.backtracking -= 1
 return success

>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if self._state.backtracking > 0 and self.alreadyParsedRule(self.input, <ruleDescriptor.index>):
 # for cached failed rules, alreadyParsedRule will raise an exception
 success = True
 return <ruleReturnValue()>

<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */

```

```

ruleBacktrackFailure() ::= <<
<if(backtracking)>
if self._state.backtracking > 0:
 raise BacktrackingFailed

<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<returnScope(scope=ruleDescriptor.returnScope)>

$ANTLR start "<ruleName>"
<fileName>:<description>
<ruleDescriptor.actions.decorate>
def <ruleName>(self, <ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<if(trace)>
 self.traceIn("<ruleName>", <ruleDescriptor.index>)\n
<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleDescriptor.actions.init>
 <@preamble()>
 <@body><ruleBody()><@end>
 <@postamble()>
 return <ruleReturnValue()>

$ANTLR end "<ruleName>"
>>

ruleBody() ::= <<
<if(memoize)>
<if(backtracking)>
success = False\n
<endif>
<endif>
try:
 try:
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>

<if(memoize)>
<if(backtracking)>

```

```

 success = True<\n>
<endif>
<endif>
<if(exceptions)>
 <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
<else>
 except RecognitionException, re:
 self.reportError(re)
 self.recover(self.input, re)
 <@setErrorReturnValue()>

<endif>
<else>
 finally:
 pass

<endif>
<endif>
finally:
<if(trace)>
 self.traceOut("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
 pass
>>

catch(decl,action) ::= <<
except <e.decl>:
 <e.action>

>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval = self.<ruleDescriptor.name>_return()
retval.start = self.input.LT(1)<\n>
<else>
<ruleDescriptor.returnScope.attributes:{ a |
<a.name> = <if(a.initValue)><a.initValue><else>None<endif>
}>
<endif>
<if(memoize)>

```

```

<ruleDescriptor.name>_startIndex = self.input.index()
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{self.<it>_stack.append(<it>_scope()); separator="\n">
<ruleDescriptor.ruleScope:{self.<it.name>_stack.append(<it.name>_scope()); separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{self.<it>_stack.pop(); separator="\n">
<ruleDescriptor.ruleScope:{self.<it.name>_stack.pop(); separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {<it.label.text> = None }; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,
ruleDescriptor.wildcardTreeListLabels]
: {list_<it.label.text> = None }; separator="\n"
>
<[ruleDescriptor.ruleLabels,ruleDescriptor.ruleListLabels]
: ruleLabelDef(label=it); separator="\n"
>
<ruleDescriptor.ruleListLabels: {<it.label.text> = None }; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<it.label.text> = None }; separator="\n"
>
<ruleDescriptor.charLabels: {<it.label.text> = None }; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {list_<it.label.text> = None }; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>

```

```

retval
<endif>
<endif>
<endif>
>>

ruleCleanUp() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop = self.input.LT(-1)<\n>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if self._state.backtracking > 0:
 self.memoize(self.input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex, success)

<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
$ANTLR start "<ruleName>"
def m<ruleName>(self, <ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<if(trace)>
 self.traceIn("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
<if(memoize)>
<if(backtracking)>
 success = False<\n>
<endif>
<endif>
 try:
<if(nakedBlock)>
 <ruleMemoization(name=ruleName)>
 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block><\n>
<else>
 _type = <ruleName>

```

```

_channel = DEFAULT_CHANNEL

<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<ruleCleanUp()>
self._state.type = _type
self._state.channel = _channel
<(ruleDescriptor.actions.after):execAction()>
<endif>
<if(memoize)>
<if(backtracking)>
 success = True<\n>
<endif>
<endif>

 finally:
<if(trace)>
 self.traceOut("<ruleName>", <ruleDescriptor.index>)<\n>
<endif>
<ruleScopeCleanUp()>
 <memoize()>
 pass

$ANTLR end "<ruleName>"

>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
def mTokens(self):
 <block><\n>

>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
<fileName>:<description>
alt<decisionNumber> = <maxAlt>
<decls>
<@body><blockBody()><@end>

```



>>

```
blockBody() ::= <<
<@predecision(>
<@decision><decision><@end>
<@postdecision(>
<@prebranch(>
<alts:altSwitchCase(); separator="\nel">
<@postbranch(>
>>
```

*/\*\* A rule block with multiple alternatives \*/*

```
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
<fileName>:<description>
alt<decisionNumber> = <maxAlt>
<decls>
<@predecision(>
<@decision><decision><@end>
<@postdecision(>
<alts:altSwitchCase(); separator="\nel">
>>
```

*ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<*

```
<fileName>:<description>
<decls>
<@prealt(>
<alts>
<@postalt(>
>>
```

*/\*\* A special case of a (...) subrule with a single alternative \*/*

```
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
<fileName>:<description>
<decls>
<@prealt(>
<alts>
<@postalt(>
>>
```

*/\*\* A (..)+ block with 1 or more alternatives \*/*

```
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
<fileName>:<description>
cnt<decisionNumber> = 0
<decls>
<@preloop(>
<@loopBody>
<positiveClosureBlockLoop(>
```

```
<@end>
<@postloop()>
>>
```

```
positiveClosureBlockLoop() ::= <<
while True: #loop<decisionNumber>
 alt<decisionNumber> = <maxAlt>
 <@predecision()>
 <@decisionBody><decision><@end>
 <@postdecision()>
 <alts:altSwitchCase(); separator="\nel">
 else:
 if cnt<decisionNumber> >= 1:
 break #loop<decisionNumber>

 <ruleBacktrackFailure()>
 eee = EarlyExitException(<decisionNumber>, self.input)
 <@earlyExitException()>
 raise eee

 cnt<decisionNumber> += 1
>>
```

```
positiveClosureBlockSingleAlt ::= positiveClosureBlock
```

```
/** A (..)* block with 1 or more alternatives */
```

```
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
<fileName>:<description>
<decls>
<@preloop()>
<@loopBody>
<closureBlockLoop()>
<@end>
<@postloop()>
>>
```

```
closureBlockLoop() ::= <<
while True: #loop<decisionNumber>
 alt<decisionNumber> = <maxAlt>
 <@predecision()>
 <@decisionBody><decision><@end>
 <@postdecision()>
 <alts:altSwitchCase(); separator="\nel">
 else:
 break #loop<decisionNumber>
>>
```

```

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
if alt<decisionNumber> == <i>:
 <@prealt()>
 <it>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt, treeLevel,rew) ::= <<
<fileName>:<description>
pass <! so empty alternatives are a valid block !>
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label>=<endif>self.match(self.input, <token>,
self.FOLLOW_<token>_in_<ruleName><elementIndex>)
>>

```

```

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

listLabel(label, elem) ::= <<
if list_<label> is None:
 list_<label> = []
list_<label>.append(<elem>)<\n>
>>

```

```

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.match(<char>)
>>

```

```

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.matchRange(<a>,)
>>

```

```

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
if <s>:
 self.input.consume()
 <postmatchCode>
<if(!LEXER)>
 self._state.errorRecovery = False<\n>
<endif>

```

```

else:
 <ruleBacktrackFailure()>
 mse = MismatchedSetException(None, self.input)
 <@mismatchedSetException()>
<if(LEXER)>
 self.recover(mse)
 raise mse
<else>

```

```

 raise mse
 <! use following code to make it recover inline; remove throw mse;
 self.recoverFromMismatchedSet(
 self.input, mse, self.FOLLOW_set_in_<ruleName><elementIndex>
)
 !>
<endif>
<\n>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
<label>Start = self.getCharIndex()
self.match(<string>)
<label> = CommonToken(input=self.input, type=INVALID_TOKEN_TYPE, channel=DEFAULT_CHANNEL,
start=<label>Start, stop=self.getCharIndex()-1)
<else>
self.match(<string>)
<endif>
>>

wildcard(label,elementIndex) ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
self.matchAny(self.input)
>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = self.input.LA(1)<\n>
<endif>
self.matchAny()
>>

```

```

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
self._state.following.append(self.FOLLOW_<rule.name>_in_<ruleName><elementIndex>)
<if(label)><label> = <endif>self.<if(scope)><scope.delegateName()>.<endif><rule.name>(<args; separator=",
">)<\n>
self._state.following.pop()
>>

/** ids+=rule */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
<label>Start<elementIndex> = self.getCharIndex()
self.<if(scope)><scope.delegateName()>.<endif>m<rule.name>(<args; separator=", ">)
<label> = CommonToken(
 input=self.input,
 type=INVALID_TOKEN_TYPE,
 channel=DEFAULT_CHANNEL,
 start=<label>Start<elementIndex>,
 stop=self.getCharIndex()-1
)
<else>
self.<if(scope)><scope.delegateName()>.<endif>m<rule.name>(<args; separator=", ">)
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<

```

```

<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
<label>Start<elementIndex> = self.getCharIndex()
self.match(EOF)
<label> = CommonToken(input=self.input, type=EOF, channel=DEFAULT_CHANNEL,
start=<label>Start<elementIndex>, stop=self.getCharIndex()-1)
<else>
self.match(EOF)
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if self.input.LA(1) == DOWN:
self.match(self.input, DOWN, None)
<children:element()>
self.match(self.input, UP, None)

<else>
self.match(self.input, DOWN, None)
<children:element()>
self.match(self.input, UP, None)
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if not (<evalPredicate(...)>):
<ruleBacktrackFailure()>
raise FailedPredicateException(self.input, "<ruleName>", "<description>")

>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>

```

```

<edges; separator="\n">
else:
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>
<else>
 <ruleBacktrackFailure()>
 nvae = NoViableAltException("<description>", <decisionNumber>, <stateNumber>, self.input)<\n>
 <@noViableAltException()>
 raise nvae<\n>
<endif>
>>

```

```

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\n">
>>

```

```

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = self.input.LA(<k>)<\n>
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber> = <eotPredictsAlt> <! if no edges, don't gen ELSE !>
<else>
else:
 alt<decisionNumber> = <eotPredictsAlt>
<\n>
<endif>
<endif>
>>

```

```

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>"

```

```

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.

```



```

*/
dfaEdge(labelExpr, targetState, predicates) ::= <<
if (<labelExpr>) <if(predicates)>and (<predicates>)<endif>:
 <targetState>
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
<!
 FIXME: this is one of the few occasion, where I miss a switch statement
 in Python. ATM this is implemented as a list of if .. elif ..
 This may be replaced by faster a dictionary lookup, when I find a solution
 for the cases when an edge is not a plain dfaAcceptState.
!>
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\n" >
else:
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>
<else>
 <ruleBacktrackFailure()>
 nvae = NoViableAltException("<description>", <decisionNumber>, <stateNumber>, self.input)<\n>
 <@noViableAltException()>
 raise nvae<\n>
<endif>

>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\n" >
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
LA<decisionNumber> = self.input.LA(<k>)
<edges; separator="\n" >
<if(eotPredictsAlt)>
else:
 alt<decisionNumber> = <eotPredictsAlt>
<endif>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
if <labels: {LA<decisionNumber> == <it>} ; separator=" or ">:

```

```

 <targetState>
 >>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = self.dfa<decisionNumber>.predict(self.input)
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
 * Can't use hex as compiler translates them before compilation.
 * These strings are split into multiple, concatenated strings.
 * Java puts them back together at compile time thankfully.
 * Java cannot handle large static arrays, so we're stuck with this
 * encode/decode approach. See analysis and runtime DFA for
 * the encoding methods.
 */
cyclicDFA(dfa) ::= <<
lookup tables for DFA #<dfa.decisionNumber>

DFA<dfa.decisionNumber>_eot = DFA.unpack(
 u"<dfa.javaCompressedEOT; wrap=""\n u\>"
)

DFA<dfa.decisionNumber>_eof = DFA.unpack(
 u"<dfa.javaCompressedEOF; wrap=""\n u\>"
)

DFA<dfa.decisionNumber>_min = DFA.unpack(
 u"<dfa.javaCompressedMin; wrap=""\n u\>"
)

DFA<dfa.decisionNumber>_max = DFA.unpack(
 u"<dfa.javaCompressedMax; wrap=""\n u\>"
)

DFA<dfa.decisionNumber>_accept = DFA.unpack(
 u"<dfa.javaCompressedAccept; wrap=""\n u\>"
)

DFA<dfa.decisionNumber>_special = DFA.unpack(
 u"<dfa.javaCompressedSpecial; wrap=""\n u\>"
)

```

```

DFA<dfa.decisionNumber>_transition = [
 <dfa.javaCompressedTransition:{s|DFA.unpack(u"<s; wrap="\nu\ "">"); separator=",\n">
]

class definition for DFA #<dfa.decisionNumber>

class DFA<dfa.decisionNumber>(DFA):
 pass

 <@errorMethod()>

 <if(dfa.specialStateSTs)>
 def specialStateTransition(self_, s, input):
 # convince pylint that my self_ magic is ok ;)
 # pylint: disable-msg=E0213

 # pretend we are a member of the recognizer
 # thus semantic predicates can be evaluated
 self = self_.recognizer

 _s = s

 <dfa.specialStateSTs:{state |
if s == <i0>: <! compressed special state numbers 0..n-1 !>
 <state>}; separator="\nel">

 <if(backtracking)>
 if self._state.backtracking >0:
 raise BacktrackingFailed

 <endif>
 nvae = NoViableAltException(self_.getDescription(), <dfa.decisionNumber>, _s, input)
 self_.error(nvae)
 raise nvae<\n>
 <endif>

 >>

 cyclicDFAInit(dfa) ::= <<
self.dfa<dfa.decisionNumber> = self.DFA<dfa.decisionNumber>(
 self, <dfa.decisionNumber>,
 eot = self.DFA<dfa.decisionNumber>_eot,
 eof = self.DFA<dfa.decisionNumber>_eof,
 min = self.DFA<dfa.decisionNumber>_min,
 max = self.DFA<dfa.decisionNumber>_max,
 accept = self.DFA<dfa.decisionNumber>_accept,
 special = self.DFA<dfa.decisionNumber>_special,

```

```

 transition = self.DFA<dfa.decisionNumber>_transition
)<\n>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
LA<decisionNumber>_<stateNumber> = input.LA(1)<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
index<decisionNumber>_<stateNumber> = input.index()
input.rewind()<\n>
<endif>
s = -1
<edges; separator="\n!">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>)<\n>
<endif>
if s >= 0:
 return s
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if (<labelExpr>)<if(predicates)> and (<predicates>)<endif>:
 s = <targetStateNumber><\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
se:
 s = <targetStateNumber><\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "((<left>) and (<right>))"

orPredicates(operands) ::= "(<first(operands)><rest(operands):{ o | or <o> }>)"

notPredicate(pred) ::= "not (<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "(<pred>)"

```

```

evalSynPredicate(pred,description) ::= "self.<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "self.input.LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(<lower> \<= LA<decisionNumber>_<stateNumber> \<= <upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(<lower> \<=
self.input.LA(<k>) \<= <upper>)"

setTest(ranges) ::= "<ranges; separator=\\\" or \\\">"

// A T T R I B U T E S

globalAttributeScopeClass(scope) ::= <<
<if(scope.attributes)>
class <scope.name>_scope(object):
 def __init__(self):
 <scope.attributes:{self.<it.decl> = None }; separator=\\\"n\">

<endif>
>>

globalAttributeScopeStack(scope) ::= <<
<if(scope.attributes)>
self.<scope.name>_stack = []<n>
<endif>
>>

ruleAttributeScopeClass(scope) ::= <<
<if(scope.attributes)>
class <scope.name>_scope(object):
 def __init__(self):
 <scope.attributes:{self.<it.decl> = None }; separator=\\\"n\">

<endif>
>>

ruleAttributeScopeStack(scope) ::= <<
<if(scope.attributes)>
self.<scope.name>_stack = []<n>

```

```

<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<label.label.text> = None<\n>
>>

returnStructName() ::= "<it.name>_return"

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
class <ruleDescriptor:returnStructName()><(if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope):
 def __init__(self):
 super(<grammar.recognizerName>.<ruleDescriptor:returnStructName()>, self).__init__()

 <scope.attributes:{self.<it.decl> = None }; separator="\n">
 <@ruleReturnInit()>

 <@ruleReturnMembers()>

<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>"

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
self.<scope>_stack[-<negIndex>].<attr.name>
<else>
<if(index)>
self.<scope>_stack[<index>].<attr.name>
<else>
self.<scope>_stack[-1].<attr.name>

```

```

<endif>
<endif>
>>

/* not applying patch because of bug in action parser!

<if(negIndex)>
((len(self.<scope>_stack) - <negIndex> - 1) >= 0 and [self.<scope>_stack[-<negIndex>].<attr.name>] or [None])[0]
<else>
<if(index)>
((<index> \< len(self.<scope>_stack)) and [self.<scope>_stack[<index>].<attr.name>] or [None])[0]
<else>
((len(self.<scope>_stack) > 0) and [self.<scope>_stack[-1].<attr.name>] or [None])[0]
<endif>
<endif>

*/

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
<!FIXME: this seems not to be used by ActionTranslator...!>
self.<scope>_stack[-<negIndex>].<attr.name> = <expr>
<else>
<if(index)>
<!FIXME: this seems not to be used by ActionTranslator...!>
self.<scope>_stack[<index>].<attr.name> = <expr>
<else>
self.<scope>_stack[-1].<attr.name> = <expr>
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "self.<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
((<scope> is not None) and [<scope>.<attr.name>] or [None])[0]
<else>
<scope>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <<

```

```

<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> = <expr>
<else>
<attr.name> = <expr>
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach; and they are evaluated early;
// they cannot see TREE_PARSER or PARSER attributes for example. :(

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>.text"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>.type"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>.line"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>.charPositionInLine"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>.channel"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>.index"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>.tree"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
((<scope> is not None) and [self.input.getTokenStream().toString(
 self.input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
 self.input.getTreeAdaptor().getTokenStopIndex(<scope>.start)
)] or [None])[0]
<else>
((<scope> is not None) and [self.input.toString(<scope>.start,<scope>.stop)] or [None])[0]
<endif>
>>
ruleLabelPropertyRef_st(scope,attr) ::= "((<scope> is not None) and [<scope>.st] or [None])[0]"

```



```
/** Isolated $RULE ref ok in lexer as it's a Token */
```

```
lexerRuleLabel(label) ::= "<label>"
```

```
lexerRuleLabelPropertyRef_type(scope,attr) ::= "((<scope> is not None) and [<scope>.type] or [0])[0]"
```

```
lexerRuleLabelPropertyRef_line(scope,attr) ::= "((<scope> is not None) and [<scope>.line] or [0])[0]"
```

```
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "((<scope> is not None) and [<scope>.charPositionInLine] or [0])[0]"
```

```
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "((<scope> is not None) and [<scope>.channel] or [0])[0]"
```

```
lexerRuleLabelPropertyRef_index(scope,attr) ::= "((<scope> is not None) and [<scope>.index] or [0])[0]"
```

```
lexerRuleLabelPropertyRef_text(scope,attr) ::= "((<scope> is not None) and [<scope>.text] or [None])[0]"
```

```
lexerRuleLabelPropertyRef_int(scope,attr) ::= "((<scope> is not None) and [int(<scope>.text)] or [0])[0]"
```

```
// Somebody may ref $template or $tree or $stop within a rule:
```

```
rulePropertyRef_start(scope,attr) ::= "retval.start"
```

```
rulePropertyRef_stop(scope,attr) ::= "retval.stop" //mmm... or input.LT(-1)??
```

```
rulePropertyRef_tree(scope,attr) ::= "retval.tree"
```

```
rulePropertyRef_text(scope,attr) ::= "self.input.toString(retval.start, self.input.LT(-1))"
```

```
rulePropertyRef_st(scope,attr) ::= "retval.st"
```

```
lexerRulePropertyRef_text(scope,attr) ::= "self.text"
```

```
lexerRulePropertyRef_type(scope,attr) ::= "_type"
```

```
lexerRulePropertyRef_line(scope,attr) ::= "self._state.tokenStartLine"
```

```
lexerRulePropertyRef_pos(scope,attr) ::= "self._state.tokenStartCharPositionInLine"
```

```
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
```

```
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
```

```
lexerRulePropertyRef_start(scope,attr) ::= "self._state.tokenStartCharIndex"
```

```
lexerRulePropertyRef_stop(scope,attr) ::= "(self.getCharIndex()-1)"
```

```
lexerRulePropertyRef_int(scope,attr) ::= "int(<scope>.text)"
```

```
// setting $st and $tree is allowed in local rule. everything else
```

```
// is flagged as error
```

```
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>"
```

```
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>"
```

```
/** How to execute an action (only when not backtracking) */
```

```
execAction(action) ::= <<
```

```
<if(backtracking)>
```

```
<if(actions.(actionScope).synpredgate)>
```

```
if <actions.(actionScope).synpredgate>:
```

```
<action>
```

```
<else>
```

```
if <actions.(actionScope).synpredgate>:
```

```
<action>
```

```
<endif>
```

```
<else>
```

```

#action start
<action>
#action end
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

codeFileExtension() ::= ".py"

true() ::= "True"
false() ::= "False"

Found in path(s):
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Python/Python.stg
No license file was found, but licenses were detected in source scan.

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```

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\*/

group AST;

/\*\* Add an adaptor property that knows how to build trees \*/

@headerFile.members() ::= <<

/\* @headerFile.members() \*/

pANTLR3\_BASE\_TREE\_ADAPTOR adaptor;

pANTLR3\_VECTOR\_FACTORY vectors;

/\* End @headerFile.members() \*/

>>

/\*\* Install the tree adaptor interface pointer and anything else that

\* tree parsers and producers require.

\*/

@genericParser.apifuncs() ::= <<

<if(PARSER)>

ADAPTOR = ANTLR3\_TREE\_ADAPTORNew(instream->tstream->tokenSource->strFactory);<\n>

<endif>

ctx->vectors = antlr3VectorFactoryNew(0);

>>

@genericParser.cleanup() ::= <<

ctx->vectors->close(ctx->vectors);

<if(PARSER)>

/\* We created the adaptor so we must free it

\*/

ADAPTOR->free(ADAPTOR);

<endif>

>>

@returnScope.ruleReturnMembers() ::= <<

<super.ASTLabelType()> tree;

>>

/\*\* Add a variable to track rule's return AST \*/

ruleDeclarations() ::= <<

<super.ruleDeclarations()>

<ASTLabelType> root\_0;<\n>

>>

ruleInitializations() ::= <<

<super.ruleInitializations()>

root\_0 = NULL;<\n>

```
>>
```

```
ruleLabelDefs() ::= <<
<super.ruleLabelDefs(>
<ruleDescriptor.tokenLabels:{<ASTLabelType> <it.label.text>_tree;}; separator="\n">
<ruleDescriptor.tokenListLabels:{<ASTLabelType> <it.label.text>_tree;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
 :{pANTLR3_REWRITE_RULE_<rewriteElementType>_STREAM stream_<it>;}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
 :{pANTLR3_REWRITE_RULE_SUBTREE_STREAM stream_<it>;}; separator="\n">
>>
```

```
/* Note that we defer the actual creation of any rewrite streams we need here and just initialize
* them to NULL. This saves creating huge numbers of rewrite streams that cannot be used as only
* one alt will be taken in a rule, but we are declaring all the streams here. So we define
* a macro that contains the create code, then use this macro later to check if the stream
* has been created yet. Checking for NULL is almost free in C.
*/
```

```
ruleLabelInitializations() ::= <<
<super.ruleLabelInitializations(>
<ruleDescriptor.tokenLabels:{<it.label.text>_tree = NULL;}; separator="\n">
<ruleDescriptor.tokenListLabels:{<it.label.text>_tree = NULL;}; separator="\n">

<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {stream_<it> = NULL;
#define CREATE_stream_<it> if (stream_<it> == NULL) {stream_<it> =
antlr3RewriteRule<rewriteElementType>StreamNewAE(ADAPTOR, RECOGNIZER, (pANTLR3_UINT8)"token
<it>"); } }; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {stream_<it> = NULL;
#define CREATE_stream_<it> if (stream_<it> == NULL) {stream_<it> =
antlr3RewriteRuleSubtreeStreamNewAE(ADAPTOR, RECOGNIZER, (pANTLR3_UINT8)"rule <it>"); } };
separator="\n">

<if(ruleDescriptor.hasMultipleReturnValues)>
retval.tree = NULL;
<endif>
>>
```

```
/** a rule label including default value */
```

```
ruleLabelInitVal(label) ::= <<
<super.ruleLabelInitVal(...)>
<label.label.text>.tree = <initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>
```

```
/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative
```

```

* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<endif>
<endif>
>>

@alt.initializations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements
//
/** ID but track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) { <endif>CREATE_stream_<token>;
stream_<token>->add(stream_<token>, <label>, NULL);<if(backtracking)> }<endif><\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>CREATE_stream_<token>; stream_<token>-
>add(stream_<token>, <label>, NULL);<if(backtracking)> }<endif><\n>
>>

wildcardTrack(label,elementIndex) ::= <<
<super.wildcard(...)>
>>

```

```

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) { <endif>CREATE_stream_<rule.name>;
stream_<rule.name>->add(stream_<rule.name>, <label>.tree, NULL);<if(backtracking)> }<endif>
>>

```

```

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabelTrack(...)>
>>

```

```

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) { <endif>CREATE_stream_<rule.name>;
stream_<rule.name>->add(stream_<rule.name>, <label>.tree, NULL);<if(backtracking)> }<endif>
>>

```

```

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabelAST(...)>
>>

```

// RULE REF AST

```

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

```

/\* How to accumulate lists when we are doing rewrite tracking...

```

*/
listLabelTrack(label) ::= <<
/* listLabelTrack(label)
*/
if (list_<label> == NULL)
{
list_<label>=ctx->vectors->newVector(ctx->vectors);
}
list_<label>->add(list_<label>, <label>.tree, NULL);

```

>>

```
/* How to accumulate lists of rule outputs (only allowed with AST
 * option but if the user is going to walk the tree, they will want
 * all their custom elements from rule returns.
 *
 * Normally, we use inline structures (which the compiler lays down
 * code to copy from heap allocations. However, here we want to accumulate copies
 * of the returned structures because we are adding them to a list. This only makes sense if the
 * grammar is not rewriting the tree as a tree rewrite only preserves the tree, not the object/structure
 * returned from the rule. The rewrite will extract the tree pointer. However, if we are not going to
 * do a tree re-write, then the user may wish to iterate the structures returned by the rule in
 * action code and will expect the user defined returns[] elements to be available when they do this.
 * Hence we cannot just preserve the tree that was returned. So, we must copy the local structure and provide
 * a function that can free the allocated space. We cannot know how to free user allocated elements and
 * presume that the user will know to do this using their own factories for the structures they allocate.
 */
```

```
listLabelAST(label) ::= <<
if (list_<label> == NULL)
{
 list_<label>=ctx->vectors->newVector(ctx->vectors);
}
{
 RETURN_TYPE_<label> * tcopy;

 tcopy = ANTLR3_MALLOC(sizeof(RETURN_TYPE_<label>)); /* Note no memory allocation checks! */
 ANTLR3_MEMCPY((void *)tcopy, (const void *)&<label>, sizeof(RETURN_TYPE_<label>));
 list_<label>->add(list_<label>, tcopy, freeScope); /* Add whatever the return type is */<n>
}
>>
```

// R e w r i t e

```
rewriteCode(
 alts,
 description,
 referencedElementsDeep, // ALL referenced elements to right of ->
 referencedTokenLabels,
 referencedTokenListLabels,
 referencedRuleLabels,
 referencedRuleListLabels,
 referencedWildcardLabels,
 referencedWildcardListLabels,
 rewriteBlockLevel,
 enclosingTreeLevel,
 treeLevel) ::=
<<
```

```

/* AST REWRITE
* elements : <referencedElementsDeep; separator=", ">
* token labels : <referencedTokenLabels; separator=", ">
* rule labels : <referencedRuleLabels; separator=", ">
* token list labels : <referencedTokenListLabels; separator=", ">
* rule list labels : <referencedRuleListLabels; separator=", ">
*/
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) <\n>
<endif>
{
<rewriteCodeLabelsDecl()>
<rewriteCodeLabelsInit()>
root_0 = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));
<prevRuleRootRef()>.tree = root_0;
<alts:rewriteAlt(); separator="else ">
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef()>.tree = (<ASTLabelType>)(ADAPTOR->rulePostProcessing(ADAPTOR, root_0));
INPUT->replaceChildren(INPUT, ADAPTOR->getParent(ADAPTOR, retval.start),
ADAPTOR->getChildIndex(ADAPTOR, retval.start),
ADAPTOR->getChildIndex(ADAPTOR, _last),
retval.tree);
<endif>
<endif>
<prevRuleRootRef()>.tree = root_0; // set result root
<rewriteCodeLabelsFree()>
}
>>

rewriteCodeLabelsDecl() ::= <<
<referencedTokenLabels
: {pANTLR3_REWRITE_RULE_<rewriteElementType>_STREAM stream_<it>;};
separator="\n"
>
<referencedTokenListLabels
: {pANTLR3_REWRITE_RULE_<rewriteElementType>_STREAM stream_<it>;};
separator="\n"
>
<referencedRuleLabels
: {pANTLR3_REWRITE_RULE_SUBTREE_STREAM stream_<it>;};
separator="\n"
>
<referencedRuleListLabels
: {pANTLR3_REWRITE_RULE_SUBTREE_STREAM stream_<it>;};
separator="\n"
>

```



```

>>

rewriteCodeLabelsInit() ::= <<
<referencedTokenLabels
:{ stream_<it>=antlr3RewriteRule<rewriteElementType>StreamNewAEE(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", <it>)};
separator="\n"
>
<referencedTokenListLabels
:{ stream_<it>=antlr3RewriteRule<rewriteElementType>StreamNewAEV(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", list_<it>)};
separator="\n"
>
<referencedRuleLabels
:{ stream_<it>=antlr3RewriteRuleSubtreeStreamNewAEE(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", <it>.tree != NULL ? <it>.tree : NULL)};
separator="\n"
>
<referencedRuleListLabels
:{ stream_<it>=antlr3RewriteRuleSubtreeStreamNewAEV(ADAPTOR, RECOGNIZER,
(pANTLR3_UINT8)"token <it>", list_<it>)};
separator="\n"
>
>>
rewriteCodeLabelsFree() ::= <<
<referencedTokenLabels
:{ if (stream_<it> != NULL) stream_<it>->free(stream_<it>)};
separator="\n"
>
<referencedTokenListLabels
:{ if (stream_<it> != NULL) stream_<it>->free(stream_<it>)};
separator="\n"
>
<referencedRuleLabels
:{ if (stream_<it> != NULL) stream_<it>->free(stream_<it>)};
separator="\n"
>
<referencedRuleListLabels
:{ if (stream_<it> != NULL) stream_<it>->free(stream_<it>)};
separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
alt,

```

```

rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
{
if (<referencedElementsDeep:{el | (stream_<el> != NULL && stream_<el>->hasNext(stream_<el>)) } ;
separator="|| ">)
{
<alt>
}
<referencedElementsDeep:{el | if (stream_<el> != NULL) stream_<el>->reset(stream_<el>);<n>}>
}<n>
}>

rewriteClosureBlock(
alt,
rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>
{
while (<referencedElements:{el | (stream_<el> != NULL && stream_<el>->hasNext(stream_<el>)) } ; separator="||
">)
{
<alt>
}
<referencedElements:{el | if (stream_<el> != NULL) stream_<el>->reset(stream_<el>);<n>}>
}<n>
}>

RewriteEarlyExitException() ::=
<<
CONSTRUCTEX();
EXCEPTION->type = ANTLR3_REWRITE_EARLY_EXCEPTION;
EXCEPTION->name = (void *)ANTLR3_REWRITE_EARLY_EXCEPTION_NAME;
}>

rewritePositiveClosureBlock(
alt,
rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
if (<referencedElements:{el | (stream_<el> == NULL || !stream_<el>->hasNext(stream_<el>)) } ; separator="|| ">)
{

```

```

 <RewriteEarlyExitException()>
}
else
{
while (<referencedElements:{el | (stream_<el>->hasNext(stream_<el>)) }; separator="|| ">) {
 <alt>
}
<referencedElements:{el | stream_<el>->reset(stream_<el>);<\n>}>
}
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>)
{
 <a.alt>
}<\n>
<else>
{
 <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = NULL; /* \<-- rewriteEmptyAlt() */"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
 <ASTLabelType> root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));
 <root:rewriteElement()>
 <children:rewriteElement()>
 ADAPTOR->addChild(ADAPTOR, root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>

```

```

<endif>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextNode(stream_<label>));<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextNode(stream_<label>));<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRootToken(ADAPTOR, stream_<label> == NULL ?
NULL : stream_<label>->nextToken(stream_<label>), root_<treeLevel>));<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR,
<createRewriteNodeFromElement(...)>, root_<treeLevel>));<\n>
>>

rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR,
<createImaginaryNode(tokenType=token, ...)>, root_<treeLevel>));<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.

```

```

*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule,dup) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<rule> == NULL ? NULL : stream_<rule>-
>nextTree(stream_<rule>));<\n>
>>

rewriteRuleRefRoot(rule,dup) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, stream_<rule> == NULL ? NULL
: stream_<rule>->nextNode(stream_<rule>), root_<treeLevel>));<\n>
>>

rewriteNodeAction(action) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = (<ASLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <action>, root_<treeLevel>));<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextTree(stream_<label>));<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, stream_<label> == NULL ? NULL : stream_<label>-
>nextTree(stream_<label>));<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, stream_<label> == NULL ? NULL
: stream_<label>->nextNode(stream_<label>), root_<treeLevel>));<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->becomeRoot((<ASTLabelType>)(stream_<label> == NULL
? NULL : stream_<label>->nextNode(stream_<label>), root_<treeLevel>));<\n>
>>

createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>

```

```

<hetero>New(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
<if(args)>

#if <length(args)> == 2
(<ASTLabelType>)ADAPTOR->createTypeTokenText(ADAPTOR, <tokenType>, TOKTEXT(<args; separator=",
">))
#else
(<ASTLabelType>)ADAPTOR->createTypeText(ADAPTOR, <tokenType>, (pANTLR3_UINT8)<args;
separator=", ">)
#endif

<else>
(<ASTLabelType>)ADAPTOR->createTypeText(ADAPTOR, <tokenType>, (pANTLR3_UINT8)"<tokenType>")
<endif>
<endif>
>>

createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
<hetero>New(stream_<token>->nextToken(stream_<token>)<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>

#if <length(args)> == 2
ADAPTOR->createTypeTokenText(ADAPTOR, <token>->getType(<token>, TOKTEXT(<token>, <args;
separator=", ">)) /* JIMI */
#else
ADAPTOR->createTypeToken(ADAPTOR, <token>->getType(<token>, <token>, <args; separator=", ">)
#endif

<else>
stream_<token> == NULL ? NULL : stream_<token>->nextNode(stream_<token>)
<endif>
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/C/AST.stg  
No license file was found, but licenses were detected in source scan.

/\*

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\*/

/\*\* Templates for building ASTs during tree parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* Each combination has its own template except that label/no label

\* is combined into tokenRef, ruleRef, ...

\*/

group ASTTreeParser;

finishedBacktracking(block) ::= <<

<if(backtracking)>

if <actions.(actionScope).synpredgate>:

<block>

<else>

<block>

<endif>

>>

/\*\* Add a variable to track last element matched \*/

ruleDeclarations() ::= <<

<super.ruleDeclarations()>

\_first\_0 = None

\_last = None<\n>

>>

```
/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
```

```
*/
```

```
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
```

```
<finishedBacktracking({
```

```
<if(rewriteMode)>
```

```
retval.tree = _first_0
```

```
if self._adaptor.getParent(retval.tree) is not None and self._adaptor.isNil(self._adaptor.getParent(retval.tree)):
```

```
 retval.tree = self._adaptor.getParent(retval.tree)
```

```
<endif>
```

```
})>
```

```
>>
```

```
/** match ^(root children) in tree parser; override here to
```

```
* add tree construction actions.
```

```
*/
```

```
tree(root, actionsAfterRoot, children, nullableChildList,
```

```
 enclosingTreeLevel, treeLevel) ::= <<
```

```
_last = self.input.LT(1)
```

```
_save_last_<treeLevel> = _last
```

```
first<treeLevel> = None
```

```
<if(!rewriteMode)>
```

```
root_<treeLevel> = self._adaptor.nil()<\n>
```

```
<endif>
```

```
<root:element()>
```

```
<if(rewriteMode)>
```

```
<finishedBacktracking({
```

```
<if(root.el.rule)>
```

```
if _first_<enclosingTreeLevel> is None:
```

```
 first<enclosingTreeLevel> = <root.el.label>.tree<\n>
```

```
<else>
```

```
if _first_<enclosingTreeLevel> is None:
```

```
 first<enclosingTreeLevel> = <root.el.label><\n>
```

```
<endif>
```

```
})>
```

```
<endif>
```

```
<actionsAfterRoot:element()>
```

```
<if(nullableChildList)>
```

```
if self.input.LA(1) == DOWN:
```

```
 self.match(self.input, DOWN, None)
```

```
 <children:element()>
```

```
 self.match(self.input, UP, None)
```

```
<else>
```

```
self.match(self.input, DOWN, None)
```

```
<children:element()>
```



```

self.match(self.input, UP, None)<\n>
<endif>
<if(!rewriteMode)>
self._adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>)<\n>
<endif>
_last = _save_last_<treeLevel>

>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_last = self.input.LT(1)
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
_last = self.input.LT(1)
<super.tokenRef(...)>
<if(!rewriteMode)>
<finishedBacktracking({
<if(hetero)>
<label>_tree = <hetero>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<else> <! rewrite mode !>
<finishedBacktracking({
if _first_<treeLevel> is None:
first<treeLevel> = <label><\n>
})>
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<

```

```

_last = self.input.LT(1)
<super.tokenRef(...)>
<if(!rewriteMode)>
<finishedBacktracking({
<if(hetero)>
<label>_tree = <hetero>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
root_<treeLevel> = self._adaptor.becomeRoot(<label>_tree, root_<treeLevel>)
})>
<endif>
>>

```

```

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,hetero) ::= <<
_last = self.input.LT(1)
<super.wildcard(...)>
<if(!rewriteMode)>
<finishedBacktracking({
<label>_tree = self._adaptor.dupTree(<label>)
self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<else> <! rewrite mode !>
<finishedBacktracking({
if _first_<treeLevel> is None:
first<treeLevel> = <label>
})>
<endif>
>>

```

```

// SET AST
matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_last = self.input.LT(1)
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<finishedBacktracking({
<if(hetero)>
<label>_tree = <hetero>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>

```

```

self._adaptor.addChild(root_<treeLevel>, <label>_tree)
})>
<endif>
})>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_last = self.input.LT(1)
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<finishedBacktracking({
<if(hetero)>
<label>_tree = <hetero>(<label>)
<else>
<label>_tree = self._adaptor.dupNode(<label>)
<endif><\n>
root_<treeLevel> = self._adaptor.becomeRoot(<label>_tree, root_<treeLevel>)
})>
<endif>
})>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRef(...)>
<finishedBacktracking({
<if(!rewriteMode)>
self._adaptor.addChild(root_<treeLevel>, <label>.tree)
<else> <! rewrite mode !>
if _first_<treeLevel> is None:
first<treeLevel> = <label>.tree<\n>
<endif>
})>
>>

/** x+=rule auto construct */

```

```

ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".tree",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRef(...)>
<if(!rewriteMode)>
<finishedBacktracking({
root_<treeLevel> = self._adaptor.becomeRoot(<label>.tree, root_<treeLevel>)
})>
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".tree",...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRefRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = self.input.LT(1)
<super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
* change nextToken to nextNode.

```

```

*/
createRewriteNodeFromElement(token,hetero,scope) ::= <<
<if(hetero)>
<hetero>(stream_<token>.nextNode())
<else>
stream_<token>.nextNode()
<endif>
>>

```

```

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(!rewriteMode)>
<finishedBacktracking({
retval.tree = self._adaptor.rulePostProcessing(root_0)
})>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Python/ASTTreeParser.stg

```

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```

/*

```

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```
*/
group ASTTreeParser;

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
{
 <ASTLabelType> root_<treeLevel> = [treeAdapator newEmptyTree];
 <root:element()>
 <actionsAfterRoot:element()>
 <if(nullableChildList)>
 if ([input LA:1] == ANTLRTokenTypeDOWN) {
 [self match:input tokenType:ANTLRTokenTypeDOWN follow:nil]; <checkRuleBacktrackFailure()>
 <children:element()>
 [self match:input tokenType:ANTLRTokenTypeUP follow:nil]; <checkRuleBacktrackFailure()>
 }
 <else>
 [self match:input tokenType:ANTLRTokenTypeDOWN follow:nil]; <checkRuleBacktrackFailure()>
 <children:element()>
 [self match:input tokenType:ANTLRTokenTypeUP follow:nil]; <checkRuleBacktrackFailure()>
 <endif>
 [root_<treeLevel> release];
}<\n>
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(rewriteMode)>retval.tree = (<ASTLabelType>)retval.start;<endif>
>>

// TOKEN AST STUFF

/** ID auto construct */
tokenRef(token,label,elementIndex) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex) ::= <<
```

```

<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (state.backtracking==0) <endif>adaptor.addChild(root_<treeLevel>, <label>.getTree());
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (state.backtracking==0) <endif>root_<treeLevel> =
(<ASTLabelType>)adaptor.becomeRoot(<label>.getTree(), root_<treeLevel>);
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** Streams for token refs are tree nodes now; override to
* change nextToken to nextNode.

```

```

*/
createRewriteNodeFromElement(token,hetero,scope) ::= <<
#error Heterogeneous tree support not implemented.
<if(hetero)>
new <hetero>(stream_<token>.nextNode())
<else>
stream_<token>.nextNode()
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/ObjC/ASTTreeParser.stg
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```

```

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```

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```

*/
group AST;

@outputFile.imports() ::= <<

```



```

<@super.imports(><if(!TREE_PARSER)><! tree parser would already have imported !>
Antlr.Runtime.Tree,<\n><endif>
>>

@genericParser.members() ::= <<
<@super.members(>
<parserMembers(>
>>

@genericParser.membersConstructor() ::= <<
<@super.membersConstructor(>
<parserMembersConstructor(>
>>

@genericParser.membersImplementation() ::= <<
<@super.membersImplementation(>
<parserMembersImplementation(>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
strict protected
 FAdaptor: ITreeAdaptor;
 procedure SetAdaptor(const Value: ITreeAdaptor);
 property Adaptor: ITreeAdaptor read FAdaptor;
public
 property TreeAdaptor: ITreeAdaptor read FAdaptor write SetAdaptor;

>>

parserMembersConstructor() ::= <<
FAdaptor := TCommonTreeAdaptor.Create;
>>

parserMembersImplementation() ::= <<
procedure T<grammar.recognizerName>.SetAdaptor(const Value: ITreeAdaptor);
begin
 FAdaptor := Value;
 <grammar.directDelegates:{g|<g:delegateName(>.TreeAdaptor := FAdaptor;}>
end;
>>

@returnScope.ruleReturnMembers() ::= <<
function T<grammar.recognizerName>.T<ruleDescriptor:returnStructName(>.GetTree: IANTLRInterface;
begin
 Result := FTree;
end;

```

```

procedure T<grammar.recognizerName>.T<ruleDescriptor:returnStructName()>.SetTree(const Value:
IANTLRInterface);
begin
 FTree := Value as I<ASTLabelType>;
end;
>>

@returnScopeDeclaration.ruleReturnMembers() ::= <<
strict private
 FTree: I<ASTLabelType>;
protected
 { IRuleReturnScope }
 function GetTree: IANTLRInterface; override;
 procedure SetTree(const Value: IANTLRInterface); override;
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
Root[0] := nil;<\n>
>>

ruleDeclarationVars() ::= <<
<super.ruleDeclarationVars()>
Root: array [0..63] of I<ASTLabelType>;
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<ruleDescriptor.tokenLabels: {<it.label.text>_tree := nil;}; separator="\n">
<ruleDescriptor.tokenListLabels: {<it.label.text>_tree := nil;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites: {Locals['Stream_<it>'] :=
TRewriteRule<rewriteElementType>Stream.Create(Adaptor,'token <it>');}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites: {Locals['Stream_<it>'] :=
TRewriteRuleSubtreeStream.Create(Adaptor,'rule <it>');}; separator="\n">
>>

ruleLabelDefVars() ::= <<
<super.ruleLabelDefVars()>
<ruleDescriptor.tokenLabels: {<it.label.text>_tree: I<ASTLabelType>;}; separator="\n">
<ruleDescriptor.tokenListLabels: {<it.label.text>_tree: I<ASTLabelType>;}; separator="\n">
>>
/** When doing auto AST construction, we must define some variables;
 * These should be turned off if doing rewrites. This must be a "mode"
 * as a rule could have both rewrite and AST within the same alternative
 * block.
 */
@alt.declarations() ::= <<

```

```

<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
Root[0] := Adaptor.GetNilNode as I<ASTLabelType>;
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<token>'] as
IRewriteRuleElementStream).Add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
* to the tracking list stream_ID for use in the rewrite.
*/
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<token>'] as
IRewriteRuleElementStream).Add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

wildcardTrack(label,elementIndex) ::= <<
<super.wildcard(...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<rule.name>'] as
IRewriteRuleElementStream).Add(<label>.Tree);<\n>

```

```

>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>(Locals['Stream_<rule>'] as
IRewriteRuleElementStream).Add(<label>.Tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
<prevRuleRootRef().Tree := Root[0];
<rewriteCodeLabels()>
Root[0] := Adaptor.GetNilNode as I<ASTLabelType>;

```

```

<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef().Tree = (<ASTLabelType>)adaptor.rulePostProcessing(root[0]);
input.ReplaceChildren(adaptor.GetParent(retval.Start),
 adaptor.GetChildIndex(retval.Start),
 adaptor.GetChildIndex(_last),
 retval.Tree);

<endif>
<endif>
<! if parser or rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef().Tree := Root[0];<\n>
<endif>
<if(!rewriteMode)>
<prevRuleRootRef().Tree := Root[0];<\n>
<endif>
<if(backtracking)>
end;
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {Locals['Stream_<it>'] := TRewriteRule<rewriteElementType>Stream.Create(Adaptor, 'token <it>', <it>);};
separator="\n"
>
<referencedTokenListLabels
: {Locals['Stream_<it>'] := TRewriteRule<rewriteElementType>Stream.Create(Adaptor, 'token <it>', list_<it>);};
separator="\n"
>
<referencedRuleLabels: {
if Assigned(<it>) then
Locals['Stream_<it>'] := TRewriteRuleSubtreeStream.Create(Adaptor, 'token <it>', <it>.Tree)
else
Locals['Stream_<it>'] := TRewriteRuleSubtreeStream.Create(Adaptor, 'token <it>', nil);}; separator="\n">
<referencedRuleListLabels
: {Locals['Stream_<it>'] := TRewriteRuleSubtreeStream.Create(Adaptor, 'token <it>', list_<it>);};
separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
* list rather shallow like other blocks.
*/
rewriteOptionalBlock(
alt,rewriteBlockLevel,

```

```

referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
(* <fileName>:<description> *)
if (<referencedElementsDeep:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator="
or ">) then
begin
<alt>
end;
<referencedElementsDeep:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).Reset;<\n>}>
>>

rewriteClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
(* <fileName>:<description> *)
while (<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator=" or
">) do
begin
<alt>
end;
<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).Reset();<\n>}>
>>

rewritePositiveClosureBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
if (not (<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator=" or
">)) then
raise ERewriteEarlyExitException.Create("");

while (<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).HasNext}; separator=" or
">) do
begin
<alt>
end;
<referencedElements:{el | (Locals['Stream_<el>'] as IRewriteRuleElementStream).Reset();<\n>}>
>>

rewriteAlt(a) ::= <<
(* <a.description> *)

```

```

<if(a.pred)>
if (<a.pred>) then
begin
 <a.alt>
end<\n>
<else>
begin
 <a.alt>
end;<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "Root[0] = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
(* <fileName>:<description> *)
begin
 Root[<treeLevel>] := Adaptor.GetNilNode as I<ASTLabelType>;
 <root:rewriteElement()>
 <children:rewriteElement()>
 Adaptor.AddChild(Root[<enclosingTreeLevel>], Root[<treeLevel>]);
end;<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
Adaptor.AddChild(Root[<treeLevel>], <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as
IRewriteRuleElementStream).NextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as IRewriteRuleElementStream).NextNode());<\n>
>>

```

```

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<label>'] as
IRewriteRuleElementStream).NextNode(), Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot(<createRewriteNodeFromElement(...)>, Root[<treeLevel>]) as
I<ASTLabelType>;<\n>
>>

rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<
Adaptor.AddChild(Root[<treeLevel>], <createImaginaryNode(tokenType=token, ...)>;<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot(<createImaginaryNode(tokenType=token, ...)>, Root[<treeLevel>]) as
I<ASTLabelType>;<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
Root[0] = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of Root[0] right
* before I set it during rewrites. The assign will be to retval.Tree.
*/
prevRuleRootRef() ::= "RetVal"

rewriteRuleRef(rule) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<rule>'] as IRewriteRuleElementStream).NextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<rule>'] as IRewriteRuleElementStream).NextNode,
Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

rewriteNodeAction(action) ::= <<
Adaptor.AddChild(Root[<treeLevel>], <action>;<\n>
>>

```



```

rewriteNodeActionRoot(action) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot(<action>, Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as IRewriteRuleElementStream).NextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
Adaptor.AddChild(Root[<treeLevel>], (Locals['Stream_<label>'] as IRewriteRuleElementStream).NextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<label>'] as IRewriteRuleElementStream).NextNode,
Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
Root[<treeLevel>] := Adaptor.BecomeRoot((Locals['Stream_<label>'] as IRewriteRuleElementStream).NextNode,
Root[<treeLevel>]) as I<ASTLabelType>;<\n>
>>

createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>
T<hetero>.Create(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
Adaptor.CreateNode(<tokenType>, <args; separator=", "><if(!args)>'<tokenType>'<endif>) as I<ASTLabelType>
<endif>
>>

createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
T<hetero>.Create((Locals['Stream_<token>'] as IRewriteRuleElementStream).NextToken<if(args)>, <args;
separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
Adaptor.Create(<token>, <args; separator=", ">)
<else>
(Locals['Stream_<token>'] as IRewriteRuleElementStream).NextNode
<endif>
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Delphi/AST.stg

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\*/

/\*\* Templates for building ASTs during tree parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* Each combination has its own template except that label/no label

\* is combined into tokenRef, ruleRef, ...

\*/

group ASTTreeParser;

/\*\* Add a variable to track last element matched \*/

```

ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> _first_0 = null;
<ASTLabelType> _last = null;<\n>
>>

/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(rewriteMode)>
retval.tree = (<ASTLabelType>)_first_0;
if (adaptor.getParent(retval.tree)!=null && adaptor.isNil(adaptor.getParent(retval.tree)))
 retval.tree = (<ASTLabelType>)adaptor.getParent(retval.tree);
<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)input.LA(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = null;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.nil();
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==Token.DOWN) {
 match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>

```

```

match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<

```

```

_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
<endif>
>>

```

```

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.dupTree(<label>);
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
<endif>
>>

```

```
// SET AST
```

```

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);

```

```

<if(backtracking)></endif>
<endif>
}
)>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)></endif>
<endif>
}
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>
<if(!rewriteMode)>
adaptor.addChild(root_<treeLevel>, <label>.getTree());
<else> <! rewrite mode !>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>.tree;
<endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<

```

```

<ruleRef(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_<treeLevel> =
 (<ASTLabelType>)adaptor.becomeRoot(<label>.getTree(), root_<treeLevel>);
 <endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRefRuleRoot(...)>
 <listLabel(elem=label+".getTree()",...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<

```

```

<if(hetero)>
new <hetero>(stream_<token>.nextNode())
<else>
stream_<token>.nextNode()
<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<n><endif>
retval.tree = (<ASTLabelType>)adaptor.rulePostProcessing(root_0);
<if(backtracking)>}<endif>
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Java/ASTTreeParser.stg

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```

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*/
```

```
/** Template overrides to add debugging to AST stuff. Dynamic inheritance
 * hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.
 */
```

```
group ASTDbg;
```

```
parserMembers() ::= <<
protected DebugTreeAdaptor adaptor;
public ITreeAdaptor TreeAdaptor
{
 get
 {
 return adaptor;
 }
 set
 {
<if(grammar.grammarIsRoot)>
 this.adaptor = new DebugTreeAdaptor(dbg,adaptor);
<else>
 this.adaptor = (DebugTreeAdaptor)adaptor; // delegator sends dbg adaptor
<endif><\n>
 <grammar.directDelegates: {g|<g:delegateName()>.TreeAdaptor = this.adaptor; }>
 }
}<\n>
>>
```

```
parserCtorBody() ::= <<
<super.parserCtorBody()>
>>
```

```
createListenerAndHandshake() ::= <<
DebugEventSocketProxy proxy = new DebugEventSocketProxy(this, port,
<if(TREE_PARSER)>input.TreeAdaptor<else>adaptor<endif>);
DebugListener = proxy;
<inputStreamType> = new Debug<inputStreamType>(input, proxy);
try
{
 proxy.Handshake();
}
catch (IOException ioe)
{
 ReportError(ioe);
}
>>
```

```
@ctorForRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
proxy.TreeAdaptor = adap;
>>
```

```
@ctorForProfilingRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
proxy.TreeAdaptor = adap;
>>
```

```
@ctorForPredefinedListener.superClassRef() ::= ": base(input, dbg)"
```

```
@ctorForPredefinedListener.finally() ::= <<
<if(grammar.grammarIsRoot)><! don't create new adaptor for delegates !>
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;<\n>
<endif>
>>
```

```
@rewriteElement.pregen() ::= "dbg.Location(<e.line>, <e.pos>);"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp3/ASTDbg.stg
```

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/*
```

```
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```

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\*/

/\*

New style messages. This file only contains the messages in English, but no information about which file, line, or column it occurred in.

The location and message ids are taken out of the formats directory.

Kay Roepke

\*/

group en\_US;

// TOOL ERRORS

// file errors

CANNOT\_WRITE\_FILE(arg,exception,stackTrace) ::= <<

cannot write file <arg>: <exception>

<stackTrace; separator="\n">

>>

CANNOT\_CLOSE\_FILE(arg,exception,stackTrace) ::= "cannot close file <arg>: <exception>"

CANNOT\_FIND\_TOKENS\_FILE(arg) ::= "cannot find tokens file <arg>"

ERROR\_READING\_TOKENS\_FILE(arg,exception,stackTrace) ::= <<

problem reading token vocabulary file <arg>: <exception>

<stackTrace; separator="\n">

>>

DIR\_NOT\_FOUND(arg,exception,stackTrace) ::= "directory not found: <arg>"

OUTPUT\_DIR\_IS\_FILE(arg,exception,stackTrace) ::= "output directory is a file: <arg>"

CANNOT\_OPEN\_FILE(arg,exception,stackTrace) ::= "cannot find or open file: <arg><if(exception)>; reason: <exception><endif>"

CIRCULAR\_DEPENDENCY() ::= "your grammars contain a circular dependency and cannot be sorted into a valid build order."

INTERNAL\_ERROR(arg,arg2,exception,stackTrace) ::= <<

internal error: <arg> <arg2><if(exception)>: <exception><endif>

<stackTrace; separator="\n">

>>

INTERNAL\_WARNING(arg) ::= "internal warning: <arg>"

ERROR\_CREATING\_ARTIFICIAL\_RULE(arg,exception,stackTrace) ::= <<

problems creating lexer rule listing all tokens: <exception>

<stackTrace; separator="\n">

>>

TOKENS\_FILE\_SYNTAX\_ERROR(arg,arg2) ::=

"problems parsing token vocabulary file <arg> on line <arg2>"

CANNOT\_GEN\_DOT\_FILE(arg,exception,stackTrace) ::=

"cannot write DFA DOT file <arg>: <exception>"

```

BAD_ACTION_AST_STRUCTURE(exception,stackTrace) ::=
 "bad internal tree structure for action '<arg>': <exception>"
BAD_AST_STRUCTURE(arg,exception,stackTrace) ::= <<
 bad internal tree structure '<arg>': <exception>
 <stackTrace; separator="\n">
>>
FILE_AND_GRAMMAR_NAME_DIFFER(arg,arg2) ::=
 "file <arg2> contains grammar <arg>; names must be identical"
FILENAME_EXTENSION_ERROR(arg) ::=
 "file <arg> must end in a file extension, normally .g"

// code gen errors
MISSING_CODE_GEN_TEMPLATES(arg) ::=
 "cannot find code generation templates <arg>.stg"
MISSING_CYCLIC_DFA_CODE_GEN_TEMPLATES() ::=
 "cannot find code generation cyclic DFA templates for language <arg>"
CODE_GEN_TEMPLATES_INCOMPLETE(arg) ::=
 "at least one code generation template missing for language <arg>"
CANNOT_CREATE_TARGET_GENERATOR(arg,exception,stackTrace) ::=
 "cannot create target <arg> code generator: <exception>"
CANNOT_COMPUTE_SAMPLE_INPUT_SEQ() ::=
 "cannot generate a sample input sequence from lookahead DFA"

// grammar interpretation errors
/*
NO_VIABLE_DFA_ALT(arg,arg2) ::=
 "no viable transition from state <arg> on <arg2> while interpreting DFA"
*/

// GRAMMAR ERRORS
SYNTAX_ERROR(arg) ::= "syntax error: <arg>"
RULE_REDEFINITION(arg) ::=
 "rule <arg> redefinition"
LEXER_RULES_NOT_ALLOWED(arg) ::=
 "lexer rule <arg> not allowed in parser"
PARSER_RULES_NOT_ALLOWED(arg) ::=
 "parser rule <arg> not allowed in lexer"
CANNOT_FIND_ATTRIBUTE_NAME_IN_DECL(arg) ::=
 "cannot find an attribute name in attribute declaration"
NO_TOKEN_DEFINITION(arg) ::=
 "no lexer rule corresponding to token: <arg>"
UNDEFINED_RULE_REF(arg) ::=
 "reference to undefined rule: <arg>"
LITERAL_NOT_ASSOCIATED_WITH_LEXER_RULE(arg) ::=
 "literal has no associated lexer rule: <arg>"
CANNOT_ALIAS_TOKENS_IN_LEXER(arg) ::=
 "literals are illegal in lexer tokens{ } section: <arg>"
ATTRIBUTE_REF_NOT_IN_RULE(arg,arg2) ::=

```

```

"reference to attribute outside of a rule: <arg><if(arg2)>.<arg2><endif>"
UNKNOWN_ATTRIBUTE_IN_SCOPE(arg,arg2) ::=
"unknown attribute for <arg>: <arg2>"
UNKNOWN_RULE_ATTRIBUTE(arg,arg2) ::=
"unknown attribute for rule <arg>: <arg2>"
UNKNOWN_SIMPLE_ATTRIBUTE(arg,args2) ::=
"attribute is not a token, parameter, or return value: <arg>"
ISOLATED_RULE_SCOPE(arg) ::=
"missing attribute access on rule scope: <arg>"
INVALID_RULE_PARAMETER_REF(arg,arg2) ::=
"cannot access rule <arg>'s parameter: <arg2>"
INVALID_RULE_SCOPE_ATTRIBUTE_REF(arg,arg2) ::=
"cannot access rule <arg>'s dynamically-scoped attribute: <arg2>"
SYMBOL_CONFLICTS_WITH_GLOBAL_SCOPE(arg) ::=
"symbol <arg> conflicts with global dynamic scope with same name"
WRITE_TO_READONLY_ATTR(arg,arg2,arg3) ::=
"cannot write to read only attribute: $<arg><if(arg2)>.<arg2><endif>"
LABEL_CONFLICTS_WITH_RULE(arg) ::=
"label <arg> conflicts with rule with same name"
LABEL_CONFLICTS_WITH_TOKEN(arg) ::=
"label <arg> conflicts with token with same name"
LABEL_CONFLICTS_WITH_RULE_SCOPE_ATTRIBUTE(arg,arg2) ::=
"label <arg> conflicts with rule <arg2>'s dynamically-scoped attribute with same name"
LABEL_CONFLICTS_WITH_RULE_ARG_RETVAL(arg,arg2) ::=
"label <arg> conflicts with rule <arg2>'s return value or parameter with same name"
ATTRIBUTE_CONFLICTS_WITH_RULE(arg,arg2) ::=
"rule <arg2>'s dynamically-scoped attribute <arg> conflicts with the rule name"
ATTRIBUTE_CONFLICTS_WITH_RULE_ARG_RETVAL(arg,arg2) ::=
"rule <arg2>'s dynamically-scoped attribute <arg> conflicts with <arg2>'s return value or parameter with same name"
LABEL_TYPE_CONFLICT(arg,arg2) ::=
"label <arg> type mismatch with previous definition: <arg2>"
ARG_RETVAL_CONFLICT(arg,arg2) ::=
"rule <arg2>'s argument <arg> conflicts a return value with same name"
NONUNIQUE_REF(arg) ::=
"<arg> is a non-unique reference"
FORWARD_ELEMENT_REF(arg) ::=
"illegal forward reference: <arg>"
MISSING_RULE_ARGS(arg) ::=
"missing parameter(s) on rule reference: <arg>"
RULE_HAS_NO_ARGS(arg) ::=
"rule <arg> has no defined parameters"
ARGS_ON_TOKEN_REF(arg) ::=
"token reference <arg> may not have parameters"
/*
NONCHAR_RANGE() ::=
"range operator can only be used in the lexer"
*/

```

ILLEGAL\_OPTION(arg) ::=  
 "illegal option <arg>"

LIST\_LABEL\_INVALID\_UNLESS\_RETVAL\_STRUCT(arg) ::=  
 "rule '+' list labels are not allowed w/o output option: <arg>"

UNDEFINED\_TOKEN\_REF\_IN\_REWRITE(arg) ::=  
 "reference to undefined token in rewrite rule: <arg>"

REWRITE\_ELEMENT\_NOT\_PRESENT\_ON\_LHS(arg) ::=  
 "reference to rewrite element <arg> without reference on left of ->"

UNDEFINED\_LABEL\_REF\_IN\_REWRITE(arg) ::=  
 "reference to undefined label in rewrite rule: \$<arg>"

NO\_GRAMMAR\_START\_RULE (arg) ::=  
 "grammar <arg>: no start rule (no rule can obviously be followed by EOF)"

EMPTY\_COMPLEMENT(arg) ::= <<  
 <if(arg)>  
 set complement ~<arg> is empty  
 <else>  
 set complement is empty  
 <endif>  
 >>

UNKNOWN\_DYNAMIC\_SCOPE(arg) ::=  
 "unknown dynamic scope: <arg>"

UNKNOWN\_DYNAMIC\_SCOPE\_ATTRIBUTE(arg,arg2) ::=  
 "unknown dynamically-scoped attribute for scope <arg>: <arg2>"

RULE\_REF\_AMBIG\_WITH\_RULE\_IN\_ALT(arg) ::=  
 "reference \$<arg> is ambiguous; rule <arg> is enclosing rule and referenced in the production (assuming enclosing rule)"

ISOLATED\_RULE\_ATTRIBUTE(arg) ::=  
 "reference to locally-defined rule scope attribute without rule name: <arg>"

INVALID\_ACTION\_SCOPE(arg,arg2) ::=  
 "unknown or invalid action scope for <arg2> grammar: <arg>"

ACTION\_REDEFINITION(arg) ::=  
 "redefinition of <arg> action"

DOUBLE\_QUOTES\_ILLEGAL(arg) ::=  
 "string literals must use single quotes (such as '\begin\'): <arg>"

INVALID\_TEMPLATE\_ACTION(arg) ::=  
 "invalid StringTemplate % shorthand syntax: '<arg>'"

MISSING\_ATTRIBUTE\_NAME() ::=  
 "missing attribute name on \$ reference"

ARG\_INIT\_VALUES\_ILLEGAL(arg) ::=  
 "rule parameters may not have init values: <arg>"

REWRITE\_OR\_OP\_WITH\_NO\_OUTPUT\_OPTION(arg) ::=  
 "<if(arg)>rule <arg> uses <endif>rewrite syntax or operator with no output option; setting output=AST"

AST\_OP\_WITH\_NON\_AST\_OUTPUT\_OPTION(arg) ::=  
 "AST operator with non-AST output option: <arg>"

NO\_RULES(arg) ::= "grammar file <arg> has no rules"

MISSING\_AST\_TYPE\_IN\_TREE\_GRAMMAR(arg) ::=  
 "tree grammar <arg> has no ASTLabelType option"

REWRITE\_FOR\_MULTI\_ELEMENT\_ALT(arg) ::=

```

"with rewrite=true, alt <arg> not simple node or obvious tree element; text attribute for rule not guaranteed to be
correct"
RULE_INVALID_SET(arg) ::=
"Cannot complement rule <arg>; not a simple set or element"
HETERO_ILLEGAL_IN_REWRITE_ALT(arg) ::=
"alts with rewrites can't use heterogeneous types left of ->"
NO_SUCH_GRAMMAR_SCOPE(arg,arg2) ::=
"reference to undefined grammar in rule reference: <arg>.<arg2>"
NO_SUCH_RULE_IN_SCOPE(arg,arg2) ::=
"rule <arg2> is not defined in grammar <arg>"
TOKEN_ALIAS_CONFLICT(arg,arg2) ::=
"cannot alias <arg>; string already assigned to <arg2>"
TOKEN_ALIAS_REASSIGNMENT(arg,arg2) ::=
"cannot alias <arg>; token name already assigned to <arg2>"
TOKEN_VOCAB_IN_DELEGATE(arg,arg2) ::=
"tokenVocab option ignored in imported grammar <arg>"
INVALID_IMPORT(arg,arg2) ::=
"<arg.grammarTypeString> grammar <arg.name> cannot import <arg2.grammarTypeString> grammar
<arg2.name>"
IMPORTED_TOKENS_RULE_EMPTY(arg,arg2) ::=
"no lexer rules contributed to <arg> from imported grammar <arg2>"
IMPORT_NAME_CLASH(arg,arg2) ::=
"combined grammar <arg.name> and imported <arg2.grammarTypeString> grammar <arg2.name> both generate
<arg2.recognizerName>; import ignored"
AST_OP_IN_ALT_WITH_REWRITE(arg,arg2) ::=
"rule <arg> alt <arg2> uses rewrite syntax and also an AST operator"
WILDCARD_AS_ROOT(arg) ::= "Wildcard invalid as root; wildcard can itself be a tree"
CONFLICTING_OPTION_IN_TREE_FILTER(arg,arg2) ::= "option <arg>=<arg2> conflicts with tree grammar
filter mode"

// GRAMMAR WARNINGS

GRAMMAR_NONDETERMINISM(input,conflictingAlts,paths,disabled,hasPredicateBlockedByAction) ::=
<<
<if(paths)>
Decision can match input such as "<input>" using multiple alternatives:
<paths:{ alt <it.alt> via NFA path <it.states; separator=","><\n}>
<else>
Decision can match input such as "<input>" using multiple alternatives: <conflictingAlts; separator="," >
<endif>
<if(disabled)><\n>As a result, alternative(s) <disabled; separator=","> were disabled for that
input<endif><if(hasPredicateBlockedByAction)><\n>Semantic predicates were present but were hidden by
actions.<endif>
>>

DANGLING_STATE(danglingAlts,input) ::= <<
the decision cannot distinguish between alternative(s) <danglingAlts; separator=","> for input such as "<input>"
>>

```

UNREACHABLE\_ALTS(alts) ::= <<

The following alternatives can never be matched: <alts; separator=","><\n>

>>

INSUFFICIENT\_PREDICATES(upon,altToLocations,hasPredicateBlockedByAction) ::= <<

Input such as "<upon>" is insufficiently covered with predicates at locations: <altToLocations.keys:{alt|alt <alt>:

<altToLocations.(alt){loc| line <loc.line>:<loc.column> at <loc.text>}; separator="," ">"; separator=",

"><if(hasPredicateBlockedByAction)><\n>Semantic predicates were present but were hidden by actions.<endif>

>>

DUPLICATE\_SET\_ENTRY(arg) ::=

"duplicate token type <arg> when collapsing subrule into set"

ANALYSIS\_ABORTED(enclosingRule) ::= <<

ANTLR could not analyze this decision in rule <enclosingRule>; often this is because of recursive rule references visible from the left edge of alternatives. ANTLR will re-analyze the decision with a fixed lookahead of k=1.

Consider using "options {k=1;}" for that decision and possibly adding a syntactic predicate.

>>

RECURSION\_OVERFLOW(alt,input,targetRules,callSiteStates) ::= <<

Alternative <alt>: after matching input such as <input> decision cannot predict what comes next due to recursion

overflow <targetRules,callSiteStates:{t,c|to <t> from <c:{s|<s.enclosingRule.name>};separator="," ">"; separator=" and ">

>>

LEFT\_RECURSION(targetRules,alt,callSiteStates) ::= <<

Alternative <alt> discovers infinite left-recursion <targetRules,callSiteStates:{t,c|to <t> from

<c:{s|<s.enclosingRule>};separator="," ">"; separator=" and ">

>>

UNREACHABLE\_TOKENS(tokens) ::= <<

The following token definitions can never be matched because prior tokens match the same input: <tokens;

separator="," ">

>>

TOKEN\_NONDETERMINISM(input,conflictingTokens,paths,disabled,hasPredicateBlockedByAction) ::=

<<

<if(paths>

Decision can match input such as "<input>" using multiple alternatives:

<paths:{ alt <it.alt> via NFA path <it.states; separator="," "><\n>}>

<else>

Multiple token rules can match input such as "<input>": <conflictingTokens; separator="," "><\n>

<endif>

<if(disabled)><\n>As a result, token(s) <disabled; separator="," "> were disabled for that

input<endif><if(hasPredicateBlockedByAction)><\n>Semantic predicates were present but were hidden by actions.<endif>

>>



```
LEFT_RECURSION_CYCLES(listOfCycles) ::= <<
```

```
The following sets of rules are mutually left-recursive <listOfCycles: {c| [<c: {r|<r.name>}]; separator=", ">]; separator=" and ">
```

```
>>
```

```
NONREGULAR_DECISION(ruleName,alts) ::= <<
```

```
[fatal] rule <ruleName> has non-LL(*) decision due to recursive rule invocations reachable from alts <alts; separator=", ">. Resolve by left-factoring or using syntactic predicates or using backtrack=true option.
```

```
>>
```

```
/* 110n for message levels */
```

```
warning() ::= "warning"
```

```
error() ::= "error"
```

```
Found in path(s):
```

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/templates/messages/languages/en.stg
```

```
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```

```
/*
```

```
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```

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```
*/
```

Found in path(s):

- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/ToolMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/ANTLRTreePrinterTokenTypes.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/PredicateLabel.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/LeftRecursionCyclesMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/RandomPhrase.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/AnalysisRecursionOverflowException.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/Message.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/ANTLRErrorListener.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/CodeGenTreeWalker.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarUnreachableAltsMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/LL1DFA.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/MultiMap.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/MutableInteger.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/ErrorMessageManager.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarAnalysisAbortedMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarInsufficientPredicatesMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/DefineGrammarItemsWalkerTokenTypes.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/Interpreter.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/AssignTokenTypesWalker.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarSyntaxMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/Grammar.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/AssignTokenTypesWalkerTokenTypes.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NonLLStarDecisionException.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/NameSpaceChecker.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarNonDeterminismMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarSanity.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarReport.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/NonRegularDecisionMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/RecursionOverflowMessage.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/FASerializer.java
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/RuleLabelScope.java

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/CodeGenTreeWalkerTokenTypes.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarSemanticsMessage.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/ANTLRLexer.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/DOTGenerator.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/ANTLRTokenTypes.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/AttributeScope.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/Attribute.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/TreeToNFAConverter.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/AssignTokenTypesBehavior.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/LL1Analyzer.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarDanglingStateMessage.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarAST.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/Barrier.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/ActionLabel.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/ANTLRParser.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/DefineGrammarItemsWalker.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NFAConversionThread.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/Rule.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/TreeToNFAConverterTokenTypes.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/Interp.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/grammar/v2/ANTLRTreePrinter.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/AnalysisTimeoutException.java

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\*/

/\*

New style messages. This file contains the actual layout of the messages emitted by ANTLR. The text itself is coming out of the languages/\*stg files, according to the chosen locale. This file contains the format that mimicks GCC output.

\*/

group gnu;

location(file, line, column) ::= "<file>:<line>:"

message(id, text) ::= "<text> (<id>)"

report(location, message, type) ::= "<location> <type>: <message>"

wantsSingleLineMessage() ::= "true"

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/templates/messages/formats/gnu.stg

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\*/

/\*\* Template overrides to add debugging to normal C output;

\* If ASTs are built, then you'll also get ASTDbg.stg loaded.

\*/

group Dbg;

@genericParser.members() ::= <<

<if(grammar.grammarIsRoot)>

const char \*

ruleNames[] =

{

"invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">

};<\n>

<endif>

<if(grammar.grammarIsRoot)> <! grammar imports other grammar(s) !>

static ANTLR3\_UINT32 ruleLevel = 0;

static ANTLR3\_UINT32 getRuleLevel()

{

return ruleLevel;

}

static void incRuleLevel()

{

ruleLevel++;

}

static void decRuleLevel()

{

ruleLevel--;

}

<else> <! imported grammar !>

static ANTLR3\_UINT32

```

getRuleLevel()
{
 return <grammar.delegators:{g| <g:delegateName(>}>->getRuleLevel();
}
static void incRuleLevel()
{
 <grammar.delegators:{g| <g:delegateName(>}>->incRuleLevel();
}
static void
decRuleLevel()
{
 <grammar.delegators:{g| <g:delegateName(>}>.decRuleLevel();
}
<endif>
<if(profile)>
// Profiling not yet implemented for C target
//
<endif>
<if(grammar.grammarIsRoot)>
<ctorForPredefinedListener(>
<else>
<ctorForDelegateGrammar(>
<endif>

static ANTLR3_BOOLEAN
evalPredicate(p<name> ctx, ANTLR3_BOOLEAN result, const char * predicate)
{
 DBG->semanticPredicate(DBG, result, predicate);
 return result;
}<\n>
>>

@genericParser.debugStuff() ::= <<
<if(grammar.grammarIsRoot)>
<createListenerAndHandshake(>
<endif>
>>

ctorForProfilingRootGrammar() ::= <<
>>

/** Basically we don't want to set any dbg listeners as root will have it. */
ctorForDelegateGrammar() ::= <<

>>

ctorForPredefinedListener() ::= <<

```

>>

```
createListenerAndHandshake() ::= <<
```

```
{
```

```
// DEBUG MODE code
```

```
//
```

```
pANTLR3_DEBUG_EVENT_LISTENER proxy;
```

```
proxy = antlr3DebugListenerNew();
```

```
proxy->grammarFileName = INPUT->tokenSource->strFactory->newStr8(INPUT->tokenSource->strFactory,
(pANTLR3_UINT8)ctx->getGrammarFileName());
```

```
<if(TREE_PARSER)>
```

```
proxy->adaptor = ADAPTOR;
```

```
<endif>
```

```
PARSER->setDebugListener(PARSER, proxy);
```

```
// Try to connect to the debugger (waits forever for a connection)
```

```
//
```

```
proxy->handshake(proxy);
```

```
// End DEBUG MODE code
```

```
//
```

```
}
```

>>

```
@rule.preamble() ::= <<
```

```
DBG->enterRule(DBG, getGrammarFileName(), (const char *)"<ruleName>");
```

```
if (getRuleLevel()==0)
```

```
{
```

```
DBG->commence(DBG);
```

```
}
```

```
incRuleLevel();
```

```
DBG->location(DBG, <ruleDescriptor.tree.line>, <ruleDescriptor.tree.column>);<\n>
```

>>

```
@rule.postamble() ::= <<
```

```
DBG->location(DBG, <ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.column>);<\n>
```

```
DBG->exitRule(DBG, getGrammarFileName(), (const char *)"<ruleName>");
```

```
decRuleLevel();
```

```
if (getRuleLevel()==0)
```

```
{
```

```
DBG->terminate(DBG);
```

```
}
```

```
<\n>
```

>>

```
@synpred.start() ::= "DBG->beginBacktrack(DBG, BACKTRACKING);"
```

```

@synpred.stop() ::= "DBG->endBacktrack(DBG, BACKTRACKING, success);"

// Common debug event triggers used by region overrides below

enterSubRule() ::=
 "DBG->enterSubRule(DBG, <decisionNumber>);<\n>"

exitSubRule() ::=
 "DBG->exitSubRule(DBG, <decisionNumber>);<\n>"

enterDecision() ::=
 "DBG->enterDecision(DBG, <decisionNumber>);<\n>"

exitDecision() ::=
 "DBG->exitDecision(DBG, <decisionNumber>);<\n>"

enterAlt(n) ::= "DBG->enterAlt(DBG, <n>);<\n>"

// Region overrides that tell various constructs to add debugging triggers

@block.predecision() ::= "<enterSubRule()><enterDecision()>"

@block.postdecision() ::= "<exitDecision()>"

@block.postbranch() ::= "<exitSubRule()>"

@ruleBlock.predecision() ::= "<enterDecision()>"

@ruleBlock.postdecision() ::= "<exitDecision()>"

@ruleBlockSingleAlt.preal() ::= "<enterAlt(n=\"1\")>"

@blockSingleAlt.preal() ::= "<enterAlt(n=\"1\")>"

@positiveClosureBlock.preloop() ::= "<enterSubRule()>"

@positiveClosureBlock.postloop() ::= "<exitSubRule()>"

@positiveClosureBlock.predecision() ::= "<enterDecision()>"

@positiveClosureBlock.postdecision() ::= "<exitDecision()>"

@positiveClosureBlock.earlyExitException() ::=
 "DBG->recognitionException(DBG, EXCEPTION);<\n>"

@closureBlock.preloop() ::= "<enterSubRule()>"

```



```

@closureBlock.postloop() ::= "<exitSubRule(>"

@closureBlock.predecision() ::= "<enterDecision(>"

@closureBlock.postdecision() ::= "<exitDecision(>"

@altSwitchCase.preal() ::= "<enterAlt(n=i)>"

@element.prematch() ::=
 "DBG->location(DBG, <it.line>, <it.pos>);"

@matchSet.mismatchedSetException() ::=
 "DBG->recognitionException(DBG, EXCEPTION);"

@newNVException.noViableAltException() ::= "DBG->recognitionException(DBG, EXCEPTION);"

dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = cdfa<decisionNumber>.predict(ctx, RECOGNIZER, ISTREAM,
&cdfa<decisionNumber>);
if (HASEXCEPTION())
{
 DBG->recognitionException(DBG, EXCEPTION);
 goto rule<ruleDescriptor.name>Ex;
}
<checkRuleBacktrackFailure(>
>>

@cyclicDFA.errorMethod() ::= <<
//static void
//dfaError(p<name> ctx)
//{{
// DBG->recognitionException(DBG, EXCEPTION);
//}}
>>

/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
evalPredicate(ctx, <pred>, (const char *)"<description>")
>>

```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/C/Dbg.stg
```

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\*/

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/ObjC/AST.stg

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*/

```

```

/** Templates for building ASTs during tree parsing.

```

```

*
* Deal with many combinations. Dimensions are:
* Auto build or rewrite
* no label, label, list label (label/no-label handled together)
* child, root
* token, set, rule, wildcard
*
* Each combination has its own template except that label/no label
* is combined into tokenRef, ruleRef, ...
*/

```

```

group ASTTreeParser;

```

```

/** Add a variable to track last element matched */

```

```

ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> _first_0 = null;
<ASTLabelType> _last = null;<\n>
>>

```

```

/** What to emit when there is no rewrite rule. For auto build

```

```

* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(rewriteMode)>
retval.tree = (<ASTLabelType>)_first_0;
if (adaptor.GetParent(retval.tree)!=null && adaptor.IsNil(adaptor.getParent(retval.tree)))
retval.tree = (<ASTLabelType>)adaptor.GetParent(retval.tree);
<endif>
<if(backtracking)>}<endif>
>>

```

```

/** match ^(root children) in tree parser; override here to

```

```

* add tree construction actions.

```

```

*/
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)input.LT(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = null;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.Nil();
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel>===null) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if (_first_<enclosingTreeLevel>===null) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==TokenConstants.DOWN) {
 Match(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 Match(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.AddChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
>>

```

```

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.tokenRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
 <if(hetero)>
 <label>_tree = new <hetero>(<label>);
 <else>
 <label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
 <endif><\n>
 adaptor.AddChild(root_<treeLevel>, <label>_tree);
 <if(backtracking)>}<endif>
 <else> <! rewrite mode !>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
 if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
 <endif>
 >>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
 <tokenRef(...)>
 <listLabel(elem=label,...)>
 >>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.tokenRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
 <if(hetero)>
 <label>_tree = new <hetero>(<label>);
 <else>
 <label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
 <endif><\n>
 root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
 <if(backtracking)>}<endif>
 <endif>
 >>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
 <tokenRefRuleRoot(...)>
 <listLabel(elem=label,...)>
 >>

/** Match . wildcard and auto dup the node/subtree */

```

```

wildcard(token,label,elementIndex,hetero) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.wildcard(>>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
 <label>_tree = (<ASTLabelType>)adaptor.DupTree(<label>);
 adaptor.AddChild(root_<treeLevel>, <label>_tree);
 <if(backtracking)>}<endif>
 <else><! rewrite mode !>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
 if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
 <endif>
 >>

// SET AST

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.matchSet(..., postmatchCode={
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
 <if(hetero)>
 <label>_tree = new <hetero>(<label>);
 <else>
 <label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
 <endif><\n>
 adaptor.AddChild(root_<treeLevel>, <label>_tree);
 <if(backtracking)>}<endif>
 <endif>
 }
)>
 >>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
 <matchSet(>>
 <noRewrite(>> <! set return tree !>
 >>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.matchSet(>>
 >>

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
 <super.matchSet(..., postmatchCode={
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
 <if(hetero)>

```

```

<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)><endif>
<endif>
}
)>
>>

```

```
// RULE REF AST
```

```

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRef(...)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>
 <if(!rewriteMode)>
 adaptor.AddChild(root_<treeLevel>, <label>.Tree);
 <else> <! rewrite mode !>
 if (_first_<treeLevel>==null) _first_<treeLevel> = <label>.tree;
 <endif>
 >>

```

```

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRef(...)>
 <listLabel(elem=label+".Tree",...)>
 >>

```

```

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_<treeLevel> =
 (<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_<treeLevel>);
 <endif>
 >>

```

```

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRefRuleRoot(...)>
 <listLabel(elem=label+".Tree",...)>
 >>

```

```

/** rule when output=AST and tracking for rewrite */

```

```

ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrack(>
 >>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrackAndListLabel(>
 >>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefRuleRootTrack(>
 >>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefRuleRootTrackAndListLabel(>
 >>

/** Streams for token refs are tree nodes now; override to
 * change NextToken to NextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<
 <if(hetero)>
 new <hetero>(stream_<token>.NextNode())
 <else>
 stream_<token>.NextNode()
 <endif>
 >>

ruleCleanUp() ::= <<
 <super.ruleCleanUp(>
 <if(!rewriteMode)>
 <if(backtracking)>if (<actions.(actionScope).synpredgate>) {<\n><endif>
 retval.tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
 <if(backtracking)>}<endif>
 <endif>
 >>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp3/ASTTreeParser.stg

```

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\*/

/\*\* Templates for building ASTs during tree parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* Each combination has its own template except that label/no label

\* is combined into tokenRef, ruleRef, ...

\*/

group ASTTreeParser;

/\*\* Add a variable to track last element matched \*/

ruleDeclarations() ::= <<

<super.ruleDeclarations()>

var \_first\_0:<ASTLabelType> = null;

var \_last:<ASTLabelType> = null;<\n>

>>

```

/** What to emit when there is no rewrite rule. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(rewriteMode)>
retval.tree = <ASTLabelType>(_first_0);
if (adaptor.getParent(retval.tree)!=null && adaptor.isNil(adaptor.getParent(retval.tree)))
 retval.tree = <ASTLabelType>(adaptor.getParent(retval.tree));
<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_last = <ASTLabelType>(input.LT(1));
{
var _save_last_<treeLevel>:<ASTLabelType> = _last;
var _first_<treeLevel>:<ASTLabelType> = null;
<if(!rewriteMode)>
var root_<treeLevel>:<ASTLabelType> = <ASTLabelType>(adaptor.nil());
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==TokenConstants.DOWN) {
 matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
}
<else>
matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);

```

```

<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);

```

```

<else>
<label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
<endif><\n>
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<label>_tree, root_<treeLevel>));
<if(backtracking)>}<endif>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.dupTree(<label>);
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
<endif>
>>

// SET AST

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<endif>
}
)>
>>

```

```

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = <ASTLabelType>(adaptor.dupNode(<label>));
<endif><\n>
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<label>_tree, root_<treeLevel>));
<if(backtracking)>}<endif>
<endif>
}
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>
<if(!rewriteMode)>
adaptor.addChild(root_<treeLevel>, <label>.tree);
<else> <! rewrite mode !>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>.tree;
<endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".tree",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<

```

```

_last = <ASTLabelType>(input.LT(1));
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_<treeLevel> =
<ASTLabelType>(adaptor.becomeRoot(<label>.tree, root_<treeLevel>));
<endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".tree",...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefRuleRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
_last = <ASTLabelType>(input.LT(1));
<super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<
<if(hetero)>
new <hetero>(stream_<token>.nextNode())
<else>
stream_<token>.nextNode()
<endif>
>>

```

```

ruleCleanup() ::= <<
<super.ruleCleanup()>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<n><endif>
retval.tree = <ASTLabelType>(adaptor.rulePostProcessing(root_0));
<if(backtracking)>}<endif>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/ActionScript/ASTTreeParser.stg
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```

```

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```

*/
group AST;

```

```

@outputFile.imports() ::= <<
<@super.imports()>
>>

```

```

@genericParser.members() ::= <<
<@super.members()>
<parserMembers()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
<!protected TreeAdaptor adaptor = new CommonTreeAdaptor();<\n>!>
setTreeAdaptor: function(adaptor) {
 this.adaptor = adaptor;
 <grammar.directDelegates: { g|<:g:delegateName()>.setTreeAdaptor(this.adaptor); }>
},
getTreeAdaptor: function() {
 return this.adaptor;
},
>>

@returnScope.ruleReturnMembers() ::= <<
getTree: function() { return this.tree; }
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
var root_0 = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<ruleDescriptor.tokenLabels: { var <it.label.text>_tree=null; }; separator="\n">
<ruleDescriptor.tokenListLabels: { var <it.label.text>_tree=null; }; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
 : { var stream_<it>=new org.antlr.runtime.tree.RewriteRuleTokenStream(this.adaptor,"token <it>"); };
separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
 : { var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"rule <it>"); };
separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
 * These should be turned off if doing rewrites. This must be a "mode"
 * as a rule could have both rewrite and AST within the same alternative
 * block.
 */
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>

```



```

root_0 = this.adaptor.nil();<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

wildcardTrack(label,elementIndex) ::= <<
<super.wildcard(...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.add(<label>.getTree());
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>
<listLabel(elem=label+".getTree()",...)>

```

```

>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.add(<label>.getTree());
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".getTree()",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {<\n>
<endif>
<prevRuleRootRef().tree = root_0;
<rewriteCodeLabels()>
root_0 = this.adaptor.nil();
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef().tree = this.adaptor.rulePostProcessing(root_0);
this.input.replaceChildren(this.adaptor.getParent(retval.start),
this.adaptor.getChildIndex(retval.start),
this.adaptor.getChildIndex(_last),

```

```

 retval.tree);
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>).tree = root_0;
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>).tree = root_0;
<endif>
<endif>
<endif>
<if(backtracking)>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
 :{var stream_<it>=new org.antlr.runtime.tree.RewriteRule<rewriteElementType>Stream(this.adaptor,"token
<it>",<it>)};
 separator="\n"
>
<referencedTokenListLabels
 :{var stream_<it>=new org.antlr.runtime.tree.RewriteRule<rewriteElementType>Stream(this.adaptor,"token
<it>",<list_<it>)};
 separator="\n"
>
<referencedRuleLabels
 :{var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"token
<it>",<it>!=null?<it>.tree:null)};
 separator="\n"
>
<referencedRuleListLabels
 :{var stream_<it>=new org.antlr.runtime.tree.RewriteRuleSubtreeStream(this.adaptor,"token <it>",<list_<it>)};
 separator="\n"
>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
alt,rewriteBlockLevel,
referencedElementsDeep, // all nested refs
referencedElements, // elements in immediately block; no nested blocks
description) ::=
<<
// <fileName>:<description>

```

```

if (<referencedElementsDeep:{el | stream_<el>.hasNext()}; separator="||">) {
 <alt>
}
<referencedElementsDeep:{el | stream_<el>.reset();<\n>}>
>>

```

```

rewriteClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
while (<referencedElements:{el | stream_<el>.hasNext()}; separator="||">) {
 <alt>
}
<referencedElements:{el | stream_<el>.reset();<\n>}>
>>

```

```

rewritePositiveClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.hasNext()}; separator="||">)) {
 throw new org.antlr.runtime.tree.RewriteEarlyExitException();
}
while (<referencedElements:{el | stream_<el>.hasNext()}; separator="||">) {
 <alt>
}
<referencedElements:{el | stream_<el>.reset();<\n>}>
>>

```

```

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>) {
 <a.alt>
}<\n>
<else>
{
 <a.alt>
}<\n>
<endif>
>>

```

```

/** For empty rewrites: "r : ... -> ;" */

```

```

rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
var root_<treeLevel> = this.adaptor.nil();
<root:rewriteElement()>
<children:rewriteElement()>
this.adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
this.adaptor.addChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(<createRewriteNodeFromElement(...)>, root_<treeLevel>);<\n>
>>

rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<

```

```

this.adaptor.addChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>;<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>);<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
 * let's us refer to $rule to mean previous value. I am reusing the
 * variable 'tree' sitting in retval struct to hold the value of root_0 right
 * before I set it during rewrites. The assign will be to retval.tree.
 */
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<rule>.nextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<rule>.nextNode(), root_<treeLevel>);<\n>
>>

rewriteNodeAction(action) ::= <<
this.adaptor.addChild(root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(<action>, root_<treeLevel>);<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
this.adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<

```

```
root_<treeLevel> = this.adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>
```

```
/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = this.adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>
```

```
createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>
new <hetero>(tokenType<if(args)>, <args; separator=", "><endif>)
<else>
this.adaptor.create(tokenType, <args; separator=", "><if(!args)>"<tokenType>"<endif>)
<endif>
>>
```

```
createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
new <hetero>(stream_<token>.nextToken()<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
this.adaptor.create(token, <args; separator=", ">)
<else>
stream_<token>.nextNode()
<endif>
<endif>
>>
```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/JavaScript/AST.stg

No license file was found, but licenses were detected in source scan.

/\*

[The "BSD licence"]

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\*/

/\*

\* This code generating template and the associated C runtime was produced by:

\* Jim Idle jim|hereisanat|idle|dotgoeshere|ws.

\* If it causes the destruction of the Universe, it will be pretty cool so long as

\* I am in a different one at the time.

\*/

group C implements ANTLRCore ;

cTypeInitMap ::= [

"int" : "0", // Integers start out being 0

"long" : "0", // Longs start out being 0

"float" : "0.0", // Floats start out being 0

"double" : "0.0", // Doubles start out being 0

"ANTLR3\_BOOLEAN" : "ANTLR3\_FALSE", // Booleans start out being Antlr C for false

"byte" : "0", // Bytes start out being 0

"short" : "0", // Shorts start out being 0

"char" : "0", // Chars start out being 0

default : "NULL" // Anything other than an atomic type (above) is a NULL (probably NULL pointer).

]

leadIn(type) ::=

<<

/\*\* \file

\* This <type> file was generated by \$ANTLR version <ANTLRVersion>

\*

\* - From the grammar source file : <fileName>

\* - On : <generatedTimestamp>

<if(LEXER)>

\* - for the lexer : <name>Lexer

<endif>

<if(PARSER)>



```

* - for the parser : <name>Parser
<endif>
<if(TREE_PARSER)>
* - for the tree parser : <name>TreeParser
<endif>
*
* Editing it, at least manually, is not wise.
*
* C language generator and runtime by Jim Idle, jimi|hereisanat|idle|dotgoeshere|ws.
*
*
>>

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile(LEXER,
 PARSEr,
 TREE_PARSER,
 actionScope,
 actions,
 docComment,
 recognizer,
 name,
 tokens,
 tokenNames,
 rules,
 cyclicDFAs,
 bitsets,
 buildTemplate,
 buildAST,
 rewriteMode,
 profile,
 backtracking,
 synpreds,
 memoize,
 numRules,
 fileName,
 ANTLRVersion,
 generatedTimestamp,
 trace,
 scopes,
 superClass,
 literals
) ::=
<<
<leadIn("C source")>
*/

```

```

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```

```
<if(actions.(actionScope).header)>
```

```
/* =====
```

```
* This is what the grammar programmer asked us to put at the top of every file.
```

```
*/
```

```
<actions.(actionScope).header>
```

```
/* End of Header action.
```

```
* =====
```

```
*/
```

```
<endif>
```

```
/* -----
```

```
* Include the ANTLR3 generated header file.
```

```
*/
```

```
#include "<name>.h"
```

```
<actions.(actionScope).postinclude>
```

```
/* ----- */
```

```
<docComment>
```

```

<if(literals)>
/** String literals used by <name> that we must do things like MATCHS() with.
 * C will normally just lay down 8 bit characters, and you can use L"xxx" to
 * get wchar_t, but wchar_t is 16 bits on Windows, which is not UTF32 and so
 * we perform this little trick of defining the literals as arrays of UINT32
 * and passing in the address of these.
 */
<literals:{static ANTLR3_UCHAR lit_<i>[] = <it>;}; separator="\n">

<endif>

/* MACROS that hide the C interface implementations from the
 * generated code, which makes it a little more understandable to the human eye.
 * I am very much against using C pre-processor macros for function calls and bits
 * of code as you cannot see what is happening when single stepping in debuggers
 * and so on. The exception (in my book at least) is for generated code, where you are
 * not maintaining it, but may wish to read and understand it. If you single step it, you know that input()
 * hides some indirect calls, but is always referring to the input stream. This is
 * probably more readable than ctx->input->istream->input(snarfle0->blarg) and allows me to rejig
 * the runtime interfaces without changing the generated code too often, without
 * confusing the reader of the generated output, who may not wish to know the gory
 * details of the interface inheritance.
 */

#define CTX ctx

/* Aids in accessing scopes for grammar programmers
 */
#undef SCOPE_TYPE
#undef SCOPE_STACK
#undef SCOPE_TOP
#define SCOPE_TYPE(scope) p<name>_##scope##_SCOPE
#define SCOPE_STACK(scope) p<name>_##scope##_Stack
#define SCOPE_TOP(scope) ctx->p<name>_##scope##_Top
#define SCOPE_SIZE(scope) (ctx->SCOPE_STACK(scope)->size(ctx->SCOPE_STACK(scope)))
#define SCOPE_INSTANCE(scope, i) (ctx->SCOPE_STACK(scope)->get(ctx->SCOPE_STACK(scope),i))

<if(LEXER)>

/* Macros for accessing things in a lexer
 */
#undef LEXER
#undef RECOGNIZER
#undef RULEMEMO

```

```

#undef GETCHARINDEX
#undef GETLINE
#undef GETCHARPOSITIONINLINE
#undef EMIT
#undef EMITNEW
#undef MATCHC
#undef MATCHS
#undef MATCHRANGE
#undef LTOKEN
#undef HASFAILED
#undef FAILEDFLAG
#undef INPUT
#undef STRSTREAM
#undef LA
#undef HASEXCEPTION
#undef EXCEPTION
#undef CONSTRUCTEX
#undef CONSUME
#undef LRECOVER
#undef MARK
#undef REWIND
#undef REWINDLAST
#undef BACKTRACKING
#undef MATCHANY
#undef MEMOIZE
#undef HAVEPARSEDRULE
#undef GETTEXT
#undef INDEX
#undef SEEK
#undef PUSHSTREAM
#undef POPSTREAM
#undef SETTEXT
#undef SETTEXT8

#define LEXER ctx->pLexer
#define RECOGNIZER LEXER->rec
#define LEXSTATE RECOGNIZER->state
#define TOKSOURCE LEXSTATE->tokSource
#define GETCHARINDEX() LEXER->getCharIndex(LEXER)
#define GETLINE() LEXER->getLine(LEXER)
#define GETTEXT() LEXER->getText(LEXER)
#define GETCHARPOSITIONINLINE() LEXER->getCharPositionInLine(LEXER)
#define EMIT() LEXSTATE->type = _type; LEXER->emit(LEXER)
#define EMITNEW(t) LEXER->emitNew(LEXER, t)
#define MATCHC(c) LEXER->matchc(LEXER, c)
#define MATCHS(s) LEXER->matchs(LEXER, s)
#define MATCHRANGE(c1,c2) LEXER->matchRange(LEXER, c1, c2)
#define MATCHANY() LEXER->matchAny(LEXER)

```

```

#define LTOKEN LEXSTATE->token
#define HASFAILED() (LEXSTATE->failed == ANTLR3_TRUE)
#define BACKTRACKING LEXSTATE->backtracking
#define FAILEDFLAG LEXSTATE->failed
#define INPUT LEXER->input
#define STRSTREAM INPUT
#define ISTREAM INPUT->istream
#define INDEX() ISTREAM->index(ISTREAM)
#define SEEK(n) ISTREAM->seek(ISTREAM, n)
#define EOF_TOKEN &(LEXSTATE->tokSource->eofToken)
#define HASEXCEPTION() (LEXSTATE->error == ANTLR3_TRUE)
#define EXCEPTION LEXSTATE->exception
#define CONSTRUCTEX() RECOGNIZER->exConstruct(RECOGNIZER)
#define LRECOVER() LEXER->recover(LEXER)
#define MARK() ISTREAM->mark(ISTREAM)
#define REWIND(m) ISTREAM->rewind(ISTREAM, m)
#define REWINDLAST() ISTREAM->rewindLast(ISTREAM)
#define MEMOIZE(ri,si) RECOGNIZER->memoize(RECOGNIZER, ri, si)
#define HAVEPARSEDRULE(r) RECOGNIZER->alreadyParsedRule(RECOGNIZER, r)
#define PUSHSTREAM(str) LEXER->pushCharStream(LEXER, str)
#define POPSTREAM() LEXER->popCharStream(LEXER)
#define SETTEXT(str) LEXSTATE->text = str
#define SKIP() LEXSTATE->token = &(TOKSOURCE->skipToken)
#define USER1 LEXSTATE->user1
#define USER2 LEXSTATE->user2
#define USER3 LEXSTATE->user3
#define CUSTOM LEXSTATE->custom
#define RULEMEMO LEXSTATE->ruleMemo
#define DBG RECOGNIZER->debugger

/* If we have been told we can rely on the standard 8 bit or 16 bit input
 * stream, then we can define our macros to use the direct pointers
 * in the input object, which is much faster than indirect calls. This
 * is really only significant to lexers with a lot of fragment rules (which
 * do not place LA(1) in a temporary at the moment) and even then
 * only if there is a lot of input (order of say 1M or so).
 */
#if defined(ANTLR3_INLINE_INPUT_ASCII) || defined(ANTLR3_INLINE_INPUT_UTF16)

ifdef ANTLR3_INLINE_INPUT_ASCII

/* 8 bit "ASCII" (actually any 8 bit character set) */

define NEXTCHAR ((pANTLR3_UINT8)(INPUT->nextChar))
define DATAP ((pANTLR3_UINT8)(INPUT->data))

else

```

```

define NEXTCHAR ((pANTLR3_UINT16)(INPUT->nextChar))
define DATAP ((pANTLR3_UINT16)(INPUT->data))

endif

define LA(n) ((NEXTCHAR + n) > (DATAP + INPUT->sizeBuf) ? ANTLR3_CHARSTREAM_EOF :
(ANTLR3_UCHAR)*(NEXTCHAR + n - 1))
define CONSUME() \
{ \
if (NEXTCHAR \< (DATAP + INPUT->sizeBuf)) \
{ \
INPUT->charPositionInLine++; \
if ((ANTLR3_UCHAR)*(NEXTCHAR) == INPUT->newlineChar) \
{ \
INPUT->line++; \
INPUT->charPositionInLine = 0; \
INPUT->currentLine = (void *) (NEXTCHAR + 1); \
} \
INPUT->nextChar = (void *) (NEXTCHAR + 1); \
} \
}

#else

// Pick up the input character by calling the input stream implementation.
//
#define CONSUME() INPUT->istream->consume(INPUT->istream)
#define LA(n) INPUT->istream->_LA(INPUT->istream, n)

#endif
<endif>

<if(PARSER)>
/* Macros for accessing things in the parser
*/

#undef PARSER
#undef RECOGNIZER
#undef HAVEPARSEDRULE
#undef MEMOIZE
#undef INPUT
#undef STRSTREAM
#undef HASEXCEPTION
#undef EXCEPTION
#undef MATCHT
#undef MATCHANYT
#undef FOLLOWSTACK
#undef FOLLOWPUSH

```

```

#undef FOLLOWPOP
#undef PRECOVER
#undef PREPORTERROR
#undef LA
#undef LT
#undef CONSTRUCTEX
#undef CONSUME
#undef MARK
#undef REWIND
#undef REWINDLAST
#undef PERRORRECOVERY
#undef HASFAILED
#undef FAILEDFLAG
#undef RECOVERFROMMISMATCHEDSET
#undef RECOVERFROMMISMATCHEDELEMENT
#undef INDEX
#undef ADAPTOR
#undef SEEK
#undef RULEMEMO
#undef DBG

#define PARSE ctx->pParser
#define RECOGNIZER PARSE->rec
#define PSRSTATE RECOGNIZER->state
#define HAVEPARSEDRULE(r) RECOGNIZER->alreadyParsedRule(RECOGNIZER, r)
#define MEMOIZE(ri,si) RECOGNIZER->memoize(RECOGNIZER, ri, si)
#define INPUT PARSE->tstream
#define STRSTREAM INPUT
#define ISTREAM INPUT->istream
#define INDEX() ISTREAM->index(INPUT->istream)
#define HASEXCEPTION() (PSRSTATE->error == ANTLR3_TRUE)
#define EXCEPTION PSRSTATE->exception
#define MATCH(t, fs) RECOGNIZER->match(RECOGNIZER, t, fs)
#define MATCHANYT() RECOGNIZER->matchAny(RECOGNIZER)
#define FOLLOWSTACK PSRSTATE->following
#define FOLLOWPUSH(x) FOLLOWSTACK->push(FOLLOWSTACK, ((void *)&(x)), NULL)
#define FOLLOWPOP() FOLLOWSTACK->pop(FOLLOWSTACK)
#define PRECOVER() RECOGNIZER->recover(RECOGNIZER)
#define PREPORTERROR() RECOGNIZER->reportError(RECOGNIZER)
#define LA(n) INPUT->istream->_LA(ISTREAM, n)
#define LT(n) INPUT->_LT(INPUT, n)
#define CONSTRUCTEX() RECOGNIZER->exConstruct(RECOGNIZER)
#define CONSUME() ISTREAM->consume(ISTREAM)
#define MARK() ISTREAM->mark(ISTREAM)
#define REWIND(m) ISTREAM->rewind(ISTREAM, m)
#define REWINDLAST() ISTREAM->rewindLast(ISTREAM)
#define SEEK(n) ISTREAM->seek(ISTREAM, n)
#define PERRORRECOVERY PSRSTATE->errorRecovery

```

```
#define FAILEDFLAG PSRSTATE->failed
#define HASFAILED() (FAILEDFLAG == ANTLR3_TRUE)
#define BACKTRACKING PSRSTATE->backtracking
#define RECOVERFROMMISMATCHEDSET(s) RECOGNIZER->recoverFromMismatchedSet(RECOGNIZER,
s)
#define RECOVERFROMMISMATCHEDELEMENT(e) RECOGNIZER-
>recoverFromMismatchedElement(RECOGNIZER, s)
#define ADAPTOR ctx->adaptor
#define RULEMEMO PSRSTATE->ruleMemo
#define DBG RECOGNIZER->debugger
```

```
<endif>
```

```
<if(TREE_PARSER)>
```

```
/* Macros for accessing things in the parser
```

```
*/
```

```
#undef PARSER
#undef RECOGNIZER
#undef HAVEPARSEDRULE
#undef INPUT
#undef STRSTREAM
#undef HASEXCEPTION
#undef EXCEPTION
#undef MATCHT
#undef MATCHANYT
#undef FOLLOWSTACK
#undef FOLLOWPUSH
#undef FOLLOWPOP
#undef PRECOVER
#undef PREPORTERROR
#undef LA
#undef LT
#undef CONSTRUCTEX
#undef CONSUME
#undef MARK
#undef REWIND
#undef REWINDLAST
#undef PERRORRECOVERY
#undef HASFAILED
#undef FAILEDFLAG
#undef RECOVERFROMMISMATCHEDSET
#undef RECOVERFROMMISMATCHEDELEMENT
#undef BACKTRACKING
#undef ADAPTOR
#undef RULEMEMO
#undef SEEK
#undef INDEX
```



```

#undef DBG

#define PARSE ctx->pTreeParser
#define RECOGNIZER PARSE->rec
#define PSRSTATE RECOGNIZER->state
#define HAVEPARSED(r) RECOGNIZER->alreadyParsedRule(RECOGNIZER, r)
#define INPUT PARSE->ctnstream
#define ISTREAM INPUT->tnstream->istream
#define STRSTREAM INPUT->tnstream
#define HASEXCEPTION() (PSRSTATE->error == ANTLR3_TRUE)
#define EXCEPTION PSRSTATE->exception
#define MATCHT(t, fs) RECOGNIZER->match(RECOGNIZER, t, fs)
#define MATCHANYT() RECOGNIZER->matchAny(RECOGNIZER)
#define FOLLOWSTACK PSRSTATE->following
#define FOLLOWPUSH(x) FOLLOWSTACK->push(FOLLOWSTACK, ((void *)&(x)), NULL)
#define FOLLOWPOP() FOLLOWSTACK->pop(FOLLOWSTACK)
#define PRECOVER() RECOGNIZER->recover(RECOGNIZER)
#define PREPORTERROR() RECOGNIZER->reportError(RECOGNIZER)
#define LA(n) ISTREAM->_LA(ISTREAM, n)
#define LT(n) INPUT->tnstream->_LT(INPUT->tnstream, n)
#define CONSTRUCTEX() RECOGNIZER->exConstruct(RECOGNIZER)
#define CONSUME() ISTREAM->consume(ISTREAM)
#define MARK() ISTREAM->mark(ISTREAM)
#define REWIND(m) ISTREAM->rewind(ISTREAM, m)
#define REWINDLAST() ISTREAM->rewindLast(ISTREAM)
#define PERRORRECOVERY PSRSTATE->errorRecovery
#define FAILEDFLAG PSRSTATE->failed
#define HASFAILED() (FAILEDFLAG == ANTLR3_TRUE)
#define BACKTRACKING PSRSTATE->backtracking
#define RECOVERFROMMISMATCHEDSET(s) RECOGNIZER->recoverFromMismatchedSet(RECOGNIZER,
s)
#define RECOVERFROMMISMATCHEDELEMENT(e) RECOGNIZER-
>recoverFromMismatchedElement(RECOGNIZER, s)
#define ADAPTOR INPUT->adaptor
#define RULEMEMO PSRSTATE->ruleMemo
#define SEEK(n) ISTREAM->seek(ISTREAM, n)
#define INDEX() ISTREAM->index(ISTREAM)
#define DBG RECOGNIZER->debugger

<endif>

#define TOKTEXT(tok, txt) tok, (pANTLR3_UINT8)txt

/* The 4 tokens defined below may well clash with your own #defines or token types. If so
* then for the present you must use different names for your defines as these are hard coded
* in the code generator. It would be better not to use such names internally, and maybe
* we can change this in a forthcoming release. I deliberately do not #undef these

```

```

* here as this will at least give you a redefined error somewhere if they clash.
*/
#define UP ANTLR3_TOKEN_UP
#define DOWN ANTLR3_TOKEN_DOWN
#define EOR ANTLR3_TOKEN_EOR
#define INVALID ANTLR3_TOKEN_INVALID

/* =====
* Functions to create and destroy scopes. First come the rule scopes, followed
* by the global declared scopes.
*/

<rules: {r |<if(r.ruleDescriptor.ruleScope)>
<ruleAttributeScopeFuncDecl(scope=r.ruleDescriptor.ruleScope)>
<ruleAttributeScopeFuncs(scope=r.ruleDescriptor.ruleScope)>
<endif>}>

<recognizer.scopes:{<if(it.isDynamicGlobalScope)>
<globalAttributeScopeFuncDecl(scope=it)>
<globalAttributeScopeFuncs(scope=it)>
<endif>}>

/* ===== */

/* =====
* Start of recognizer
*/

<recognizer>

/* End of code
* =====
*/

>>
headerFileExtension() ::= ".h"

headerFile(LEXER,
 PARSE,
 TREE_PARSER,
 actionScope,
 actions,
 docComment,
 recognizer,
 name,
 tokens,
 tokenNames,

```

```

 rules,
 cyclicDFAs,
 bitsets,
 buildTemplate,
 buildAST,
 rewriteMode,
 profile,
 backtracking,
 synpreds,
 memoize,
 numRules,
 fileName,
 ANTLRVersion,
 generatedTimestamp,
 trace,
 scopes,
 superClass,
 literals
) ::=
<<
<leadIn("C header")>
<if(PARSER)>
* The parser <mainName()>
<endif>
<if(LEXER)>
* The lexer <mainName()>
<endif>
<if(TREE_PARSER)>
* The tree parser <mainName()>
<endif>
has the callable functions (rules) shown below,
* which will invoke the code for the associated rule in the source grammar
* assuming that the input stream is pointing to a token/text stream that could begin
* this rule.
*
* For instance if you call the first (topmost) rule in a parser grammar, you will
* get the results of a full parse, but calling a rule half way through the grammar will
* allow you to pass part of a full token stream to the parser, such as for syntax checking
* in editors and so on.
*
* The parser entry points are called indirectly (by function pointer to function) via
* a parser context typedef p<name>, which is returned from a call to <name>New().
*
<if(LEXER)>
* As this is a generated lexer, it is unlikely you will call it 'manually'. However
* the methods are provided anyway.
*
<endif>

```

```

* The methods in p<name> are as follows:
*
* <rules: {r | <if(!r.ruleDescriptor.isSynPred)> - <headerReturnType(ruleDescriptor=r.ruleDescriptor,...)>
p<name>-><r.ruleDescriptor.name>(p<name><endif>); separator="\n * ">
*
* The return type for any particular rule is of course determined by the source
* grammar file.
*/
// [The "BSD licence"]
// Copyright (c) 2005-2009 Jim Idle, Temporal Wave LLC
// http://www.temporal-wave.com
// http://www.linkedin.com/in/jimidle
//
// All rights reserved.
//
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// IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
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// NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
// DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
// THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
// (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
// THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

#ifndef _<name>_H
#define _<name>_H
<actions.(actionScope).preincludes>
/* =====
* Standard antlr3 C runtime definitions
*/
#include \<antlr3.h>

/* End of standard antlr 3 runtime definitions
* =====
*/

```

```

<actions.(actionScope).includes>

#ifdef __cplusplus
extern "C" {
#endif

// Forward declare the context typedef so that we can use it before it is
// properly defined. Delegators and delegates (from import statements) are
// interdependent and their context structures contain pointers to each other
// C only allows such things to be declared if you pre-declare the typedef.
//
typedef struct <name>_Ctx_struct <name>, * p<name>;

<if(recognizer.grammar.delegates)>
// Include delegate definition header files
//
<recognizer.grammar.delegates: {g|#include \<<g.recognizerName>.h>}; separator="\n">

<endif>

<actions.(actionScope).header>

#ifdef ANTLR3_WINDOWS
// Disable: Unreferenced parameter, - Rules with parameters that are not used
// constant conditional, - ANTLR realizes that a prediction is always true (synpred usually)
// initialized but unused variable - tree rewrite variables declared but not needed
// Unreferenced local variable - lexer rule declares but does not always use _type
// potentially uninitialized variable used - retval always returned from a rule
// unreferenced local function has been removed - susually getTokenNames or freeScope, they can go without
warnigns
//
// These are only really displayed at warning level /W4 but that is the code ideal I am aiming at
// and the codegen must generate some of these warnings by necessity, apart from 4100, which is
// usually generated when a parser rule is given a parameter that it does not use. Mostly though
// this is a matter of orthogonality hence I disable that one.
//
#pragma warning(disable : 4100)
#pragma warning(disable : 4101)
#pragma warning(disable : 4127)
#pragma warning(disable : 4189)
#pragma warning(disable : 4505)
#pragma warning(disable : 4701)
#endif
<if(backtracking)>

/* =====
* BACKTRACKING IS ENABLED

```

```

* =====
*/
<endif>

<rules:{r |<headerReturnScope(ruleDescriptor=r.ruleDescriptor,...)>>

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeDecl(scope=it)><endif>>
<rules:{r |<ruleAttributeScopeDecl(scope=r.ruleDescriptor.ruleScope)>>
<if(recognizer.grammar.delegators)>
// Include delegator definition header files
//
<recognizer.grammar.delegators: {g#include \<<g.recognizerName>.h>; separator="\n">

<endif>

/** Context tracking structure for <mainName()>
*/
struct <name>_Ctx_struct
{
 /** Built in ANTLR3 context tracker contains all the generic elements
 * required for context tracking.
 */
<if(PARSER)>
 pANTLR3_PARSER pParser;
<endif>
<if(LEXER)>
 pANTLR3_LEXER pLexer;
<endif>
<if(TREE_PARSER)>
 pANTLR3_TREE_PARSER pTreeParser;
<endif>

<if(recognizer.grammar.delegates)>
<recognizer.grammar.delegates:
 {g|p<g.recognizerName> <g:delegateName(>;}; separator="\n">
<endif>
<if(recognizer.grammar.delegators)>
<recognizer.grammar.delegators:
 {g|p<g.recognizerName> <g:delegateName(>;}; separator="\n">
<endif>
<scopes:{<if(it.isDynamicGlobalScope)>
 <globalAttributeScopeDef(scope=it)>
<endif>}; separator="\n\n">
<rules: {r |<if(r.ruleDescriptor.ruleScope)>
 <ruleAttributeScopeDef(scope=r.ruleDescriptor.ruleScope)>
<endif>}>

<if(LEXER)>

```

```

 <rules:{r | <if(!r.ruleDescriptor.isSynPred)><headerReturnType(ruleDescriptor=r.ruleDescriptor)>
(*m<r.ruleDescriptor.name>) (struct <name>_Ctx_struct * ctx<if(r.ruleDescriptor.parameterScope)>,
<endif><r.ruleDescriptor.parameterScope:parameterScope(scope=it)>);<endif>}; separator="\n";>
<endif>
<if(!LEXER)>
 <rules:{r | <headerReturnType(ruleDescriptor=r.ruleDescriptor)> (*<r.ruleDescriptor.name>) (struct
<name>_Ctx_struct * ctx<if(r.ruleDescriptor.parameterScope)>,
<endif><r.ruleDescriptor.parameterScope:parameterScope(scope=it)>);}; separator="\n";>
<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
 // Delegated rules
<recognizer.grammar.delegatedRules:{ruleDescriptor|
 <headerReturnType(ruleDescriptor)> (*<ruleDescriptor.name>)(struct <name>_Ctx_struct *
ctx<if(ruleDescriptor.parameterScope)>, <endif><ruleDescriptor.parameterScope:parameterScope(scope=it)>);};
separator="\n";>
<endif>
 const char * (*getGrammarFileName());
 void (*free) (struct <name>_Ctx_struct * ctx);
 <@members>
 <@end>
 <actions.(actionScope).context>
};

// Function prototypes for the constructor functions that external translation units
// such as delegators and delegates may wish to call.
//
ANTLR3_API p<name> <name>New (<inputType()> instream<recognizer.grammar.delegators:{g|,
p<g.recognizerName> <g.delegateName()>}>);
ANTLR3_API p<name> <name>NewSSD (<inputType()> instream,
pANTLR3_RECOGNIZER_SHARED_STATE state<recognizer.grammar.delegators:{g|, p<g.recognizerName>
<g.delegateName()>}>);
<if(!recognizer.grammar.grammarIsRoot)>
extern pANTLR3_UINT8 <recognizer.grammar.composite.rootGrammar.recognizerName>TokenNames[];
<endif>

/** Symbolic definitions of all the tokens that the <grammarType()> will work with.
* \{
*
* Antlr will define EOF, but we can't use that as it is too common in
* in C header files and that would be confusing. There is no way to filter this out at the moment
* so we just undef it here for now. That isn't the value we get back from C recognizers
* anyway. We are looking for ANTLR3_TOKEN_EOF.
*/
#ifdef EOF
#undef EOF
#endif
#ifdef Tokens

```

```

#undef Tokens
#endif
<tokens:{#define <it.name> <it.type>}; separator="\n">
#ifdef EOF
#undef EOF
#define EOF ANTLR3_TOKEN_EOF
#endif

#ifndef TOKENSOURCE
#define TOKENSOURCE(lxr) lxr->pLexer->rec->state->tokSource
#endif

/* End of token definitions for <name>
* =====
*/
/** \} */

#ifdef __cplusplus
}
#endif

#endif

/* END - Note:Keep extra line feed to satisfy UNIX systems */

>>

inputType() ::= <<
<if(LEXER)>
pANTLR3_INPUT_STREAM
<endif>
<if(PARSER)>
pANTLR3_COMMON_TOKEN_STREAM
<endif>
<if(TREE_PARSER)>
pANTLR3_COMMON_TREE_NODE_STREAM
<endif>
>>

grammarType() ::= <<
<if(PARSER)>
parser
<endif>
<if(LEXER)>
lexer
<endif>
<if(TREE_PARSER)>
tree parser

```



```

<endif>
>>

mainName() ::= <<
<if(PARSER)>
<name>
<endif>
<if(LEXER)>
<name>
<endif>
<if(TREE_PARSER)>
<name>
<endif>
>>

headerReturnScope(ruleDescriptor) ::= "<returnScope(...)>"

headerReturnType(ruleDescriptor) ::= <<
<if(LEXER)>
<if(!r.ruleDescriptor.isSynPred)>
void
<else>
<ruleDescriptor:returnType()>
<endif>
<else>
<ruleDescriptor:returnType()>
<endif>
>>

// Produce the lexer output
//
lexer(grammar,
 name,
 tokens,
 scopes,
 rules,
 numRules,
 labelType="pANTLR3_COMMON_TOKEN",
 filterMode,
 superClass) ::= <<

<if(filterMode)>
/* Forward declare implementation function for ANTLR3_TOKEN_SOURCE interface when
 * this is a filter mode lexer.
 */
static pANTLR3_COMMON_TOKEN <name>NextToken (pANTLR3_TOKEN_SOURCE toksource);

/* Override the normal MEMOIZE and HAVEALREADYPARSED macros as this is a filtering

```

```

* lexer. In filter mode, the memoizing and backtracking are gated at BACKTRACKING > 1 rather
* than just BACKTRACKING. In some cases this might generate code akin to:
* if (BACKTRACKING) if (BACKTRACKING > 1) memoize.
* However, I assume that the C compilers/optimizers are smart enough to work this one out
* these days - Jim
*/
#undef MEMOIZE
#define MEMOIZE(ri,si) if (BACKTRACKING>1) { RECOGNIZER->memoize(RECOGNIZER, ri, si) }
#undef HAVEPARSEDRULE
#define HAVEPARSEDRULE(r) if (BACKTRACKING>1) { RECOGNIZER->alreadyParsedRule(RECOGNIZER,
r) }
<endif>

/* Forward declare the locally static matching functions we have generated and any predicate functions.
*/
<rules:{r | static ANTLR3_INLINE <headerReturnType(ruleDescriptor=r.ruleDescriptor)>
<if(!r.ruleDescriptor.isSynPred)>m<endif><r.ruleDescriptor.name> (p<name>
ctx<if(r.ruleDescriptor.parameterScope)>, <endif><r.ruleDescriptor.parameterScope:parameterScope(scope=it)>);};
separator="\n";>
static void <name>Free(p<name> ctx);

/* =====
* Lexer matching rules end.
* =====
*/

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>

<actions.lexer.members>

static void
<name>Free (p<name> ctx)
{
<if(memoize)>
if (RULEMEMO != NULL)
{
RULEMEMO->free(RULEMEMO);
RULEMEMO = NULL;
}
<endif>
<if(grammar.directDelegates)>
// Free the lexers that we delegated to
// functions to. NULL the state so we only free it once.
//
<grammar.directDelegates:
{g|ctx-><g:delegateName()->pLexer->rec->state = NULL;
ctx-><g:delegateName()->free(ctx-><g:delegateName()->);}; separator="\n">
<endif>

```

```

LEXER->free(LEXER);

ANTLR3_FREE(ctx);
}

/** \brief Name of the grammar file that generated this code
*/
static const char fileName[] = "<fileName>";

/** \brief Return the name of the grammar file that generated this code.
*/
static const char * getGrammarFileName()
{
 return fileName;
}

<if(filterMode)>
 <filteringNextToken()>
<endif>

/** \brief Create a new lexer called <name>
*
* \param[in] instream Pointer to an initialized input stream
* \return
* - Success p<name> initialized for the lex start
* - Fail NULL
*/
ANTLR3_API p<name> <name>New
(<inputType()> instream<grammar.delegators:{g|, p<g.recognizerName> <g.delegateName()>>>
{
 // See if we can create a new lexer with the standard constructor
 //
 return <name>NewSSD(instream, NULL<grammar.delegators:{g|, <g.delegateName()>>>);
}

/** \brief Create a new lexer called <name>
*
* \param[in] instream Pointer to an initialized input stream
* \param[state] state Previously created shared recognizer stat
* \return
* - Success p<name> initialized for the lex start
* - Fail NULL
*/
ANTLR3_API p<name> <name>NewSSD
(pANTLR3_INPUT_STREAM instream, pANTLR3_RECOGNIZER_SHARED_STATE
state<grammar.delegators:{g|, p<g.recognizerName> <g.delegateName()>>>
{
 p<name> ctx; // Context structure we will build and return

```

```

ctx = (p<name>) ANTLR3_CALLOC(1, sizeof(<name>));

if (ctx == NULL)
{
 // Failed to allocate memory for lexer context
 return NULL;
}

/* -----
 * Memory for basic structure is allocated, now to fill in
 * in base ANTLR3 structures. We initialize the function pointers
 * for the standard ANTLR3 lexer function set, but upon return
 * from here, the programmer may set the pointers to provide custom
 * implementations of each function.
 *
 * We don't use the macros defined in <name>.h here so you can get a sense
 * of what goes where.
 */

/* Create a base lexer, using the supplied input stream
 */
ctx->pLexer = antlr3LexerNewStream(ANTLR3_SIZE_HINT, instream, state);

/* Check that we allocated the memory correctly
 */
if (ctx->pLexer == NULL)
{
 ANTLR3_FREE(ctx);
 return NULL;
}
<if(memoize)>
<if(grammar.grammarIsRoot)>
 // Create a LIST for recording rule memos.
 //
 ctx->pLexer->rec->ruleMemo = antlr3IntTrieNew(15); /* 16 bit depth is enough for 32768 rules! */
<endif>
<endif>

/* Install the implementation of our <name> interface
 */
<rules:{r | <if(!r.ruleDescriptor.isSynPred)>ctx->m<r.ruleDescriptor.name> =
m<r.ruleDescriptor.name>;<endif>}; separator="\n";>

/** When the nextToken() call is made to this lexer's pANTLR3_TOKEN_SOURCE
 * it will call mTokens() in this generated code, and will pass it the ctx
 * pointer of this lexer, not the context of the base lexer, so store that now.
 */

```

```

ctx->pLexer->ctx = ctx;

/**Install the token matching function
 */
ctx->pLexer->mTokens = (void (*)(void *))(mTokens);

ctx->getGrammarFileName = getGrammarFileName;
ctx->free = <name>Free;

<if(grammar.directDelegates)>
// Initialize the lexers that we are going to delegate some
// functions to.
//
<grammar.directDelegates:
 {g|ctx-><g:delegateName()> = <g.recognizerName>NewSSD(instream, ctx->pLexer->rec->state,
ctx->grammar.delegators:{g|, <g:delegateName()>}>);}; separator="\n">
<endif>
<if(grammar.delegators)>
// Install the pointers back to lexers that will delegate us to perform certain functions
// for them.
//
<grammar.delegators:
 {g|ctx-><g:delegateName()> = <g:delegateName()>;}; separator="\n">
<endif>
<if(filterMode)>
/* We have filter mode turned on, so install the filtering nextToken function
 */
ctx->pLexer->rec->state->tokSource->nextToken = <name>NextToken;
<endif>
<actions.lexer.apifuncs>

/* Return the newly built lexer to the caller
 */
return ctx;
}
<if(cyclicDFAs)>

/* =====
 * DFA tables for the lexer
 */
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
/* =====
 * End of DFA tables for the lexer
 */
<endif>

/* =====
 * Functions to match the lexer grammar defined tokens from the input stream

```

```

*/

<rules; separator="\n\n">

/* =====
* Lexer matching rules end.
* =====
*/
<if(synpreds)>

/* =====
* Lexer syntactic predicates
*/
<synpreds:{p | <lexerSynpred(predname=p)>}>
/* =====
* Lexer syntactic predicates end.
* =====
*/
<endif>

/* End of Lexer code
* =====
* =====
*/
>>

```

```

filteringNextToken() ::= <<
/** An override of the lexer's nextToken() method that backtracks over mTokens() looking
* for matches in lexer filterMode. No error can be generated upon error; just rewind, consume
* a token and then try again. BACKTRACKING needs to be set as well.
* Make rule memoization happen only at levels above 1 as we start mTokens
* at BACKTRACKING==1.
*/

```

```

static pANTLR3_COMMON_TOKEN
<name>NextToken(pANTLR3_TOKEN_SOURCE toksource)
{
 pANTLR3_LEXER lexer;
 pANTLR3_RECOGNIZER_SHARED_STATE state;

```

```

 lexer = (pANTLR3_LEXER)(toksource->super);
 state = lexer->rec->state;

```

```

 /* Get rid of any previous token (token factory takes care of
 * any deallocation when this token is finally used up.
 */

```

```

 state ->token = NULL;

```

```

state ->error = ANTLR3_FALSE; /* Start out without an exception */
state ->failed = ANTLR3_FALSE;

/* Record the start of the token in our input stream.
*/
state->tokenStartCharIndex = lexer->input->istream->index(lexer->input->istream);
state->tokenStartCharPositionInLine = lexer->input->getCharPositionInLine(lexer->input);
state->tokenStartLine = lexer->input->getLine(lexer->input);
state->text = NULL;

/* Now call the matching rules and see if we can generate a new token
*/
for (;;)
{
if (lexer->input->istream->_LA(lexer->input->istream, 1) == ANTLR3_CHARSTREAM_EOF)
{
/* Reached the end of the stream, nothing more to do.
*/
pANTLR3_COMMON_TOKEN teof = &(toksource->eofToken);

teof->setStartIndex (teof, lexer->getCharIndex(lexer));
teof->setStopIndex (teof, lexer->getCharIndex(lexer));
teof->setLine (teof, lexer->getLine(lexer));
return teof;
}

state->token = NULL;
state->error = ANTLR3_FALSE; /* Start out without an exception */

{
ANTLR3_MARKER m;

m = lexer->input->istream->mark(lexer->input->istream);
state->backtracking = 1; /* No exceptions */
state->failed = ANTLR3_FALSE;

/* Call the generated lexer, see if it can get a new token together.
*/
lexer->mTokens(lexer->ctx);
state->backtracking = 0;

<! mTokens backtracks with synpred at BACKTRACKING==2
and we set the synpredgate to allow actions at level 1. !>

if (state->failed == ANTLR3_TRUE)
{
lexer->input->istream->rewind(lexer->input->istream, m);
lexer->input->istream->consume(lexer->input->istream); <! advance one char and try again !>
}
}

```

```

 }
 else
 {
 lexer->emit(lexer); /* Assemble the token and emit it to the stream */
 return state->token;
 }
}
}
}
}
>>

```

```

actionGate() ::= "BACKTRACKING==0"

```

```

filteringActionGate() ::= "BACKTRACKING==1"

```

```

/** How to generate a parser */

```

```

genericParser(grammar,
 name,
 scopes,
 tokens,
 tokenNames,
 rules,
 numRules,
 bitsets,
 inputStreamType,
 superClass,
 ASTLabelType="pANTLR3_BASE_TREE",
 labelType,
 members,
 rewriteElementType, filterMode
) ::= <<

```

```

<if(grammar.grammarIsRoot)>

```

```

/** \brief Table of all token names in symbolic order, mainly used for

```

```

* error reporting.

```

```

*/

```

```

pANTLR3_UINT8 <name>TokenNames[<length(tokenNames)>+4]

```

```

= {

```

```

 (pANTLR3_UINT8) "\<invalid>", /* String to print to indicate an invalid token */

```

```

 (pANTLR3_UINT8) "\<EOR>",

```

```

 (pANTLR3_UINT8) "\<DOWN>",

```

```

 (pANTLR3_UINT8) "\<UP>",

```

```

 <tokenNames:{(pANTLR3_UINT8) <it>}; separator=",\n">

```

```

};

```

```

<endif>

```

```

<@members>

```



```

 <@end>
<rules:{r | <ruleAttributeScopeFuncMacro(scope=r.ruleDescriptor.ruleScope)>}>
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeFuncMacro(scope=it)><endif>}>

// Forward declare the locally static matching functions we have generated.
//
<rules:{r | static <headerReturnType(ruleDescriptor=r.ruleDescriptor)> <r.ruleDescriptor.name> (p<name>
ctx<if(r.ruleDescriptor.parameterScope)>, <endif><r.ruleDescriptor.parameterScope:parameterScope(scope=it)>);};
separator="\n";>
static void <name>Free(p<name> ctx);
<if(!LEXER)>
<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
<if(recognizer.grammar.delegatedRules)>
// Delegated rules
//
<recognizer.grammar.delegatedRules:{ruleDescriptor|static <headerReturnType(ruleDescriptor)>
<ruleDescriptor.name>(p<name> ctx<if(ruleDescriptor.parameterScope)>,
<endif><r.ruleDescriptor.parameterScope:parameterScope(scope=it)>);}; separator="\n";>

<endif>
<endif>

/* For use in tree output where we are accumulating rule labels via label += ruleRef
* we need a function that knows how to free a return scope when the list is destroyed.
* We cannot just use ANTLR3_FREE because in debug tracking mode, this is a macro.
*/
static void ANTLR3_CDECL freeScope(void * scope)
{
 ANTLR3_FREE(scope);
}

/** \brief Name of the grammar file that generated this code
*/
static const char fileName[] = "<fileName>";

/** \brief Return the name of the grammar file that generated this code.
*/
static const char * getGrammarFileName()
{
 return fileName;
}

/** \brief Create a new <name> parser and return a context for it.
*
* \param[in] instream Pointer to an input stream interface.
*
* \return Pointer to new parser context upon success.

```

```

*/
ANTLR3_API p<name>
<name>New (<inputStreamType> instream<grammar.delegators:{g|, p<g.recognizerName>
<g.delegateName()>>>)
{
// See if we can create a new parser with the standard constructor
//
return <name>NewSSD(instream, NULL<grammar.delegators:{g|, <g.delegateName()>>>);
}

/** \brief Create a new <name> parser and return a context for it.
*
* \param[in] instream Pointer to an input stream interface.
*
* \return Pointer to new parser context upon success.
*/
ANTLR3_API p<name>
<name>NewSSD (<inputStreamType> instream, pANTLR3_RECOGNIZER_SHARED_STATE
state<grammar.delegators:{g|, p<g.recognizerName> <g.delegateName()>>>)
{
p<name> ctx; /* Context structure we will build and return */

ctx = (p<name>) ANTLR3_CALLOC(1, sizeof(<name>));

if (ctx == NULL)
{
// Failed to allocate memory for parser context
//
return NULL;
}

/* -----
* Memory for basic structure is allocated, now to fill in
* the base ANTLR3 structures. We initialize the function pointers
* for the standard ANTLR3 parser function set, but upon return
* from here, the programmer may set the pointers to provide custom
* implementations of each function.
*
* We don't use the macros defined in <name>.h here, in order that you can get a sense
* of what goes where.
*/

<if(PARSER)>
/* Create a base parser/recognizer, using the supplied token stream
*/
ctx->pParser = antlr3ParserNewStream(ANTLR3_SIZE_HINT, instream->tstream, state);
<endif>
<if(TREE_PARSER)>

```

```

/* Create a base Tree parser/recognizer, using the supplied tree node stream
*/
ctx->pTreeParser = antlr3TreeParserNewStream(ANTLR3_SIZE_HINT, instream, state);
<endif>

/* Install the implementation of our <name> interface
*/
<rules: {r | ctx-><r.ruleDescriptor.name> = <r.ruleDescriptor.name>;}; separator="\n";>
<if(grammar.delegatedRules)>
// Install the delegated methods so that they appear to be a part of this
// parser
//
<grammar.delegatedRules: {ruleDescriptor | ctx-><ruleDescriptor.name> = <ruleDescriptor.name>;};
separator="\n";>
<endif>

ctx->free = <name>Free;
ctx->getGrammarFileName = getGrammarFileName;

/* Install the scope pushing methods.
*/
<rules: {r | <if(r.ruleDescriptor.ruleScope)>
<ruleAttributeScope(scope=r.ruleDescriptor.ruleScope)><\n>
<endif>}>
<recognizer.scopes: {<if(it.isDynamicGlobalScope)>
<globalAttributeScope(scope=it)><\n>
<endif>}>
<@apifuncs>

<@end>
<if(grammar.directDelegates)>
// Initialize the parsers that we are going to delegate some
// functions to.
//
<grammar.directDelegates:
 {g|ctx-><g.delegateName()> = <g.recognizerName>NewSSD(instream, PSRSTATE,
ctx<grammar.delegators: {g, <g.delegateName()>}>);}; separator="\n">
<endif>
<if(grammar.delegators)>
// Install the pointers back to parsers that will delegate us to perform certain functions
// for them.
//
<grammar.delegators:
 {g|ctx-><g.delegateName()> = <g.delegateName()>;}; separator="\n">
<endif>
<actions.parser.apifuncs>
<actions.treeparser.apifuncs>
<if(memoize)>

```

```

<if(grammar.grammarIsRoot)>
 /* Create a LIST for recording rule memos.
 */
 RULEMEMO = antlr3IntTrieNew(15); /* 16 bit depth is enough for 32768 rules! */<\n>
<endif>
<endif>
 /* Install the token table
 */
 PSRSTATE->tokenNames = <grammar.composite.rootGrammar.recognizerName>TokenNames;

 <@debugStuff()>

 /* Return the newly built parser to the caller
 */
 return ctx;
}

/** Free the parser resources
*/
static void
<name>Free(p<name> ctx)
{
 /* Free any scope memory
 */
 <rules: {r
|if(r.ruleDescriptor.ruleScope)><ruleAttributeScopeFree(scope=r.ruleDescriptor.ruleScope)><\n><endif>}>
 <recognizer.scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeFree(scope=it)><\n><endif>}>

 <@cleanup>
 <@end>
 <if(grammar.directDelegates)>
 // Free the parsers that we delegated to
 // functions to.NULL the state so we only free it once.
 //
 <grammar.directDelegates:
 {g| ctx-><g:delegateName()-><if(TREE_PARSER)>pTreeParser<else>pParser<endif-->rec->state = NULL;
 ctx-><g:delegateName()->free(ctx-><g:delegateName()->);}; separator="\n">
 <endif>
 <if(memoize)>
 <if(grammar.grammarIsRoot)>
 if (RULEMEMO != NULL)
 {
 RULEMEMO->free(RULEMEMO);
 RULEMEMO = NULL;
 }
 <endif>
 <endif>
 // Free this parser

```

```

//
<if(TREE_PARSER)>
 ctx->pTreeParser->free(ctx->pTreeParser);<\n>
<else>
 ctx->pParser->free(ctx->pParser);<\n>
<endif>
 ANTLR3_FREE(ctx);

 /* Everything is released, so we can return
 */
 return;
}

/** Return token names used by this <grammarType()>
*
* The returned pointer is used as an index into the token names table (using the token
* number as the index).
*
* \return Pointer to first char * in the table.
*/
static pANTLR3_UINT8 *getTokenNames()
{
 return <grammar.composite.rootGrammar.recognizerName>TokenNames;
}

<members>

/* Declare the bitsets
*/
<bitsets:bitsetDeclare(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
 words64=it.bits)>

<if(cyclicDFAs)>

/* =====
* DFA tables for the parser
*/
<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
/* =====
* End of DFA tables for the parser
*/
<endif>

/* =====
* Parsing rules
*/
<rules; separator="\n\n">

```

```

<if(grammar.delegatedRules)>
 // Delegated methods that appear to be a part of this
 // parser
 //
 <grammar.delegatedRules:{ruleDescriptor|
 <returnType()> <ruleDescriptor.name>(p<name> ctx<if(ruleDescriptor.parameterScope.attributes)>,
 <endif><ruleDescriptor.parameterScope:parameterScope(scope=it)>)
 \{
 <if(ruleDescriptor.hasReturnValue)>return <endif>ctx-><ruleDescriptor.grammar:delegateName()>-
 ><ruleDescriptor.name>(ctx-
 ><ruleDescriptor.grammar:delegateName()><if(ruleDescriptor.parameterScope.attributes)>,
 <endif><ruleDescriptor.parameterScope.attributes:{a|<a.name>}; separator=", ">);
 \}); separator="\n">

 <endif>
 /* End of parsing rules
 * =====
 */

 /* =====
 * Syntactic predicates
 */
 <synpreds:{p | <synpred(predname=p)>}>
 /* End of syntactic predicates
 * =====
 */

 >>

 parser(grammar,
 name,
 scopes,
 tokens,
 tokenNames,
 rules,
 numRules,
 bitsets,
 ASTLabelType,
 superClass="Parser",
 labelType="pANTLR3_COMMON_TOKEN",
 members={<actions.parser.members>}
) ::= <<
 <genericParser(inputStreamType="pANTLR3_COMMON_TOKEN_STREAM", rewriteElementType="TOKEN",
 ...)>

```

```
>>
```

```
/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar,
 name,
 scopes,
 tokens,
 tokenNames,
 globalAction,
 rules,
 numRules,
 bitsets,
 labelType={<ASTLabelType>},
 ASTLabelType="pANTLR3_BASE_TREE",
 superClass="TreeParser",
 members={<actions.treeparser.members>}, filterMode
) ::= <<
<genericParser(inputStreamType="pANTLR3_COMMON_TREE_NODE_STREAM",
rewriteElementType="NODE", ...)>
>>
```

```
/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
static void <ruleName>_fragment(p<name> ctx <ruleDescriptor.parameterScope:parameterScope(scope=it)>)
{
 <ruleLabelDefs()>
 <ruleLabelInitializations()>
 <if(trace)>
 ANTLR3_PRINTF("enter <ruleName> %d failed = %d, backtracking = %d\n",LT(1),failed,BACKTRACKING);
 <block>
 ANTLR3_PRINTF("exit <ruleName> %d, failed = %d, backtracking = %d\n",LT(1),failed,BACKTRACKING);

 <else>
 <block>
 <endif>
 <ruleCleanUp()>
}
// $ANTLR end <ruleName>
```

>>

```
synpred(predname) ::= <<
static ANTLR3_BOOLEAN <predname>(p<name> ctx)
{
 ANTLR3_MARKER start;
 ANTLR3_BOOLEAN success;

 BACKTRACKING++;
 <@start()>
 start = MARK();
 <predname>_fragment(ctx); // can never throw exception
 success = !(FAILEDFLAG);
 REWIND(start);
 <@stop()>
 BACKTRACKING--;
 FAILEDFLAG = ANTLR3_FALSE;
 return success;
}<\n>
```

>>

```
lexerSynpred(predname) ::= <<
<synpred(predname)>
>>
```

```
ruleMemoization(rname) ::= <<
<if(memoize)>
if ((BACKTRACKING>0) && (HAVEPARSEDRULE(<ruleDescriptor.index>)))
{
 <if(ruleDescriptor.hasMultipleReturnValues)>
 <if(!ruleDescriptor.isSynPred)>
 retval.start = 0;
 <scopeClean()><\n>
 <endif>
 <endif>
 return <ruleReturnValue()>;
}
<endif>
>>
```

/\*\* How to test for failure and return from rule \*/

```
checkRuleBacktrackFailure() ::= <<
if (HASEXCEPTION())
{
 goto rule<ruleDescriptor.name>Ex;
}
<if(backtracking)>
if (HASFAILED())
```



```

{
 <scopeClean()>
 return <ruleReturnValue()>;
}
<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>
if (BACKTRACKING>0)
{
 FAILEDFLAG = <>true()>;
 <scopeClean()>
 return <ruleReturnValue()>;
}
<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
/**
 * $ANTLR start <ruleName>
 * <fileName>:<description>
 */
static <returnType()>
<ruleName>(p<name> ctx<if(ruleDescriptor.parameterScope)>,
<endif><ruleDescriptor.parameterScope:parameterScope(scope=it)>)
{
 <if(trace)>ANTLR3_PRINTF("enter <ruleName> %s failed=%d, backtracking=%d\n", LT(1),
BACKTRACKING);<endif>
 <ruleDeclarations()>
 <ruleDescriptor.actions.declarations>
 <ruleLabelDefs()>
 <ruleInitializations()>
 <ruleDescriptor.actions.init>
 <ruleMemoization(rname=ruleName)>
 <ruleLabelInitializations()>
 <@preamble()>
 {
 <block>
 }

 <ruleCleanup()>
 <if(exceptions)>
 if (HASEXCEPTION())

```

```

{
<exceptions: {e|<catch(decl=e.decl,action=e.action)><\n> }>
}
else
{
<(ruleDescriptor.actions.after):execAction(>
}
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
<else>
 if (HASEXCEPTION())
 {
 PREPORTERROR();
 PRECOVER();
 <@setErrorReturnValue(>
 }
<if(ruleDescriptor.actions.after)>
 else
 {
 <(ruleDescriptor.actions.after):execAction(>
 }<\n>
<endif>
<endif>
<endif>
<endif>
 <if(trace)>System.out.println("exit <ruleName> "+LT(1)+" failed="+failed+"
backtracking="+BACKTRACKING);<endif>
 <memoize(>
 <finally>
 <@postamble(>
 return <ruleReturnValue(>;
}
/* $ANTLR end <ruleName> */
>>

catch(decl,action) ::= <<
/* catch(decl,action)
*/
if ((HASEXCEPTION()) && (EXCEPTION->type == <e.decl>)
{
 <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>

```

```

<returnType()> retval;<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
ANTLR3_UINT32 <ruleDescriptor.name>_startIndex;
<endif>
>>

ruleInitializations() ::= <<
/* Initialize rule variables
*/
<if(memoize)>
<ruleDescriptor.name>_startIndex = INDEX();<\n>
<endif>
<ruleDescriptor.useScopes: {<scopeTop(sname=it)> = <scopePush(sname=it)>;}; separator="\n">
<ruleDescriptor.ruleScope: {<scopeTop(sname=it.name)> = <scopePush(sname=it.name)>;}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {<labelType> <it.label.text>;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {pANTLR3_VECTOR list_<it.label.text>;}; separator="\n"
>
<[ruleDescriptor.ruleLabels,ruleDescriptor.ruleListLabels]
: ruleLabelDef(label=it); separator="\n"
>
>>

ruleLabelInitializations() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {list_<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.ruleLabels,ruleDescriptor.ruleListLabels]
: ruleLabelInitVal(label=it); separator="\n"
>
>
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!ruleDescriptor.isSynPred)>
retval.start = LT(1); retval.stop = retval.start;<\n>
<endif>
<endif>

```

>>

```
lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<labelType> <it.label.text>;}; separator="\n"
>
<ruleDescriptor.charLabels: {ANTLR3_UINT32 <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {pANTLR3_INT_TRIE list_<it.label.text>;}; separator="\n"
>
>>
```

```
lexerRuleLabelInit() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {list_<it.label.text> = antlr3IntTrieNew(31);}; separator="\n"
>
>>
```

```
lexerRuleLabelFree() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<it.label.text> = NULL;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {list_<it.label.text>->free(list_<it.label.text>);}; separator="\n"
>
>>
```

```
ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
```

```

retval
<endif>
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (BACKTRACKING>0) { MEMOIZE(<ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

ruleCleanUp() ::= <<

// This is where rules clean up and exit
//
goto rule<ruleDescriptor.name>Ex; /* Prevent compiler warnings */
rule<ruleDescriptor.name>Ex; ;
<scopeClean()>
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
<if(!ruleDescriptor.isSynPred)>
retval.stop = LT(-1);<\n>
<endif>
<endif>
<endif>
>>

scopeClean() ::= <<
<ruleDescriptor.useScopes:{<scopePop(sname=it)>}; separator="\n">
<ruleDescriptor.ruleScope:{<scopePop(sname=it.name)>}; separator="\n">

>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules, which do not produce tokens.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// Comes from: <block.description>
/** \brief Lexer rule generated by ANTLR3
 *
 * $ANTLR start <ruleName>
 *
 * Looks to match the characters the constitute the token <ruleName>
 * from the attached input stream.
 *
 *

```

```

* \remark
* - lexer->error == ANTLR3_TRUE if an exception was thrown.
*/
static ANTLR3_INLINE
void m<ruleName>(p<name> ctx<if(ruleDescriptor.parameterScope)>,
<endif><ruleDescriptor.parameterScope:parameterScope(scope=it)>)
{
 ANTLR3_UINT32 _type;
 <ruleDeclarations()>
 <ruleDescriptor.actions.declarations>
 <lexerRuleLabelDefs()>
 <if(trace)>System.out.println("enter <ruleName> "+(char)LA(1)+"
line="+GETLINE()+": "+GETCHARPOSITIONINLINE()+" failed="+failed+"
backtracking="+BACKTRACKING);<endif>

 <if(nakedBlock)>
 <ruleMemoization(rname=ruleName)>
 <lexerRuleLabelInit()>
 <ruleDescriptor.actions.init>

 <block><\n>
 <else>
 <ruleMemoization(rname=ruleName)>
 <lexerRuleLabelInit()>
 _type = <ruleName>;

 <ruleDescriptor.actions.init>

 <block>
 LEXSTATE->type = _type;
 <endif>
 <if(trace)> ANTLR3_FPRINTF(stderr, "exit <ruleName> '%c' line=%d:%d failed = %d, backtracking
=%d\n",LA(1),GETLINE(),GETCHARPOSITIONINLINE(),failed,BACKTRACKING);<endif>
 <ruleCleanUp()>
 <lexerRuleLabelFree()>
 <(ruleDescriptor.actions.after):execAction()>
 <memoize>
}
// $ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
* that chooses between lexer rules.
*/
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
/** This is the entry point in to the lexer from an object that
* wants to generate the next token, such as a pCOMMON_TOKEN_STREAM
*/

```

```

static void
mTokens(p<name> ctx)
{
 <block><\n>

 goto ruleTokensEx; /* Prevent compiler warnings */
ruleTokensEx: ;
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

// <fileName>:<description>
{
 int alt<decisionNumber>=<maxAlt>;
 <decls>
 <@predecision()>
 <decision>
 <@postdecision()>
 <@prebranch()>
 switch (alt<decisionNumber>)
 {
 <alts:altSwitchCase()>
 }
 <@postbranch()>
}
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
{
 // <fileName>:<description>

 ANTLR3_UINT32 alt<decisionNumber>;

 alt<decisionNumber>=<maxAlt>;

 <decls>
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>)
 {
 <alts:altSwitchCase()>
 }
}

```

```

}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
{
 int cnt<decisionNumber>=0;
 <decls>
 <@preloop()>

 for (;;)
 {
 int alt<decisionNumber>=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>)
 {
 <alts:altSwitchCase()>
 default:

 if (cnt<decisionNumber> >= 1)
 {
 goto loop<decisionNumber>;
 }
 <ruleBacktrackFailure()>
 <earlyExitEx()>
 <@earlyExitException()>
 goto rule<ruleDescriptor.name>Ex;
 }
 }
}

```



```

}
cnt<decisionNumber>++;
}
loop<decisionNumber>; /* Jump to here if this rule does not match */
<@postloop()>
}
>>

earlyExitEx() ::= <<
/* mismatchedSetEx()
*/
CONSTRUCTEX();
EXCEPTION->type = ANTLR3_EARLY_EXIT_EXCEPTION;
EXCEPTION->name = (void *)ANTLR3_EARLY_EXIT_NAME;
<\n>
>>
positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<

// <fileName>:<description>
<decls>

<@preloop()>
for (;;)
{
int alt<decisionNumber>=<maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>)
{
<alts:altSwitchCase()>
default:
goto loop<decisionNumber>; /* break out of the loop */
break;
}
}
loop<decisionNumber>; /* Jump out to here if this rule does not match */
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by antlr before code generation
* so we can just use the normal block template

```

```

*/
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
case <i>:
 <@prealt()>
 <it>
 break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
 <@declarations()>
 <@initializations()>
 <elements:element()>
 <rew>
 <@cleanup()>
}
>>

// E L E M E N T S
/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label> = (<labelType>)<endif> MATCHT(<token>,
&FOLLOW_<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure()>
>>

/** ids+=ID */

```

```

tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

listLabel(label,elem) ::= <<
if (list_<label> == NULL)
{
 list_<label>=ctx->vectors->newVector(ctx->vectors);
}
list_<label>->add(list_<label>, <elem>, NULL);
>>

```

```

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = LA(1);<\n>
<endif>
MATCHC(<char>);
<checkRuleBacktrackFailure()>
>>

```

```

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = LA(1);<\n>
<endif>
MATCHRANGE(<a>,);
<checkRuleBacktrackFailure()>
>>

```

```

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= LA(1);<\n>
<else>
<label>=(<labelType>)LT(1);<\n>
<endif>
<endif>
if (<s>)
{
 CONSUME();
 <postmatchCode>
<if(!LEXER)>
 PERRORRECOVERY=ANTLR3_FALSE;
<endif>

```

```

 <if(backtracking)>FAILEDFLAG=ANTLR3_FALSE;<\n><endif>
}
else
{
 <ruleBacktrackFailure()>
 <mismatchedSetEx()>
 <@mismatchedSetException()>
<if(LEXER)>
 LRECOVER();
<else>
 RECOVERFROMMISMATCHEDSET(&FOLLOW_set_in_<ruleName><elementIndex>);
<endif>
 goto rule<ruleDescriptor.name>Ex;
}<\n>
>>

mismatchedSetEx() ::= <<
CONSTRUCTEX();
EXCEPTION->type = ANTLR3_MISMATCHED_SET_EXCEPTION;
EXCEPTION->name = (void *)ANTLR3_MISMATCHED_SET_NAME;
<if(PARSER)>
EXCEPTION->expectingSet = &FOLLOW_set_in_<ruleName><elementIndex>;
<endif>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
<label>Start = GETCHARINDEX();
MATCHS(<string>);
<checkRuleBacktrackFailure()>
<label> = LEXSTATE->tokFactory->newToken(LEXSTATE->tokFactory);
<label>->setType(<label>, ANTLR3_TOKEN_INVALID);
<label>->setStartIndex(<label>, <label>Start);
<label>->setStopIndex(<label>, GETCHARINDEX()-1);
<label>->input = INPUT->tstream->istream;
<else>
MATCHS(<string>);
<checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label>=(<labelType>)LT(1);<\n>
<endif>
MATCHANYT();
<checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = LA(1);<\n>
<endif>
MATCHANY();
<checkRuleBacktrackFailure()>
>>

```

```

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
FOLLOWPUSH(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)>ctx-><scope:delegateName()-><endif><rule.name>(ctx<if(scope)>->
<scope:delegateName()-><endif><if(args)>, <args; separator=","><endif>);<\n>
FOLLOWPOP();
<checkRuleBacktrackFailure()>
>>

```

```

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** A lexer rule reference
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
/* <description> */
<if(label)>
{
 ANTLR3_MARKER <label>Start<elementIndex> = GETCHARINDEX();
 <if(scope)>ctx-><scope:delegateName()-><endif>m<rule.name>(ctx<if(scope)>-
><scope:delegateName()-><endif> <if(args)>, <endif><args; separator=", ">;
 <checkRuleBacktrackFailure()->
 <label> = LEXSTATE->tokFactory->newToken(LEXSTATE->tokFactory);
 <label>->setType(<label>, ANTLR3_TOKEN_INVALID);
 <label>->setStartIndex(<label>, <label>Start<elementIndex>);
 <label>->setStopIndex(<label>, GETCHARINDEX()-1);
 <label>->input = INPUT;
}
<else>
<if(scope)>ctx-><scope:delegateName()-><endif>m<rule.name>(ctx<if(scope)>-
><scope:delegateName()-><endif> <if(args)>, <endif><args; separator=", ">;
<checkRuleBacktrackFailure()->
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
{
 ANTLR3_UINT32 <label>Start<elementIndex>;
 <labelType> <label>;
 <label>Start<elementIndex> = GETCHARINDEX();
 MATCHC(ANTLR3_CHARSTREAM_EOF);
 <checkRuleBacktrackFailure()->
 <label> = LEXSTATE->tokFactory->newToken(LEXSTATE->tokFactory);
 <label>->setType(<label>, ANTLR3_TOKEN_EOF);
 <label>->setStartIndex(<label>, <label>Start<elementIndex>);
 <label>->setStopIndex(<label>, GETCHARINDEX()-1);
 <label>->input = INPUT->tstream->istream;
}
<else>

```

```

MATCHC(ANTLR3_CHARSTREAM_EOF);
<checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList, enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (LA(1)==ANTLR3_TOKEN_DOWN) {
 MATCHT(ANTLR3_TOKEN_DOWN, NULL);
 <checkRuleBacktrackFailure()>
 <children:element()>
 MATCHT(ANTLR3_TOKEN_UP, NULL);
 <checkRuleBacktrackFailure()>
}
<else>
MATCHT(ANTLR3_TOKEN_DOWN, NULL);
<checkRuleBacktrackFailure()>
<children:element()>
MATCHT(ANTLR3_TOKEN_UP, NULL);
<checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)
{
 <ruleBacktrackFailure()>
 <newFPE(...)>
}
>>

newFPE() ::= <<
 CONSTRUCTEX();
 EXCEPTION->type = ANTLR3_FAILED_PREDICATE_EXCEPTION;
 EXCEPTION->message = (void *)"<description>";
 EXCEPTION->ruleName = (void *)"<ruleName>";
 <\n>
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<

```

```

{
 int LA<decisionNumber>_<stateNumber> = LA(<k>);
 <edges; separator="\nelse ">
 else
 {
<if(eotPredictsAlt)>
 alt<decisionNumber>=<eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>

 <newNVException()>
 goto rule<ruleDescriptor.name>Ex;

<endif>
 }
}
>>

newNVException() ::= <<
CONSTRUCTEX();
EXCEPTION->type = ANTLR3_NO_VIABLE_ALT_EXCEPTION;
EXCEPTION->message = (void *)"<description>";
EXCEPTION->decisionNum = <decisionNumber>;
EXCEPTION->state = <stateNumber>;
<@noViableAltException()>
<\n>
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
 int LA<decisionNumber>_<stateNumber> = LA(<k>);
 <edges; separator="\nelse ">
}
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */

```



```

dfaLoopbackStateDecls() ::= <<
ANTLR3_UINT32 LA<decisionNumber>_<stateNumber>;
>>

dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
/* dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)
*/
int LA<decisionNumber>_<stateNumber> = LA(<k>);
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
{
alt<decisionNumber>=<eotPredictsAlt>;
}<\n>
<endif>
<endif>
}
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>";

/** A simple edge with an expression. If the expression is satisfied,
* enter to the target state. To handle gated productions, we may
* have to evaluate some predicates for this edge.
*/
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>)
{
<targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
* decides if this is possible: CodeGenerator.canGenerateSwitch().
*/
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (LA(<k>)
{
<edges; separator="\n">

default:
<if(eotPredictsAlt)>

```

```

 alt<decisionNumber>=<eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 <newNVException()>
 goto rule<ruleDescriptor.name>Ex;<\n>
<endif>
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (LA(<k>)
{
 <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (LA(<k>)
{
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
 alt<decisionNumber>=<eotPredictsAlt>;
 break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{ case <it>:}; separator="\n">
{
 <targetState>
}
 break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = cdfa<decisionNumber>.predict(ctx, RECOGNIZER, ISTREAM,
&cdfa<decisionNumber>);
<checkRuleBacktrackFailure()>
>>

```

```

/* Dump DFA tables as static initialized arrays of shorts(16 bits)/characters(8 bits)
* which are then used to statically initialize the dfa structure, which means that there
* is no runtime initialization whatsoever, other than anything the C compiler might
* need to generate. In general the C compiler will lay out memory such that there is no
* runtime code required.
*/
cyclicDFA(dfa) ::= <<
/** Static dfa state tables for Cyclic dfa:
* <dfa.description>
*/
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_eot[<dfa.numberofStates>] =
{
<dfa.eot; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_eof[<dfa.numberofStates>] =
{
<dfa.eof; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_min[<dfa.numberofStates>] =
{
<dfa.min; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_max[<dfa.numberofStates>] =
{
<dfa.max; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_accept[<dfa.numberofStates>] =
{
<dfa.accept; wrap="\n", separator=", ", null="-1">
};
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_special[<dfa.numberofStates>] =
{
<dfa.special; wrap="\n", separator=", ", null="-1">
};

/** Used when there is no transition table entry for a particular state */
#define dfa<dfa.decisionNumber>_T_empty NULL

<dfa.edgeTransitionClassMap.keys:{ table |
static const ANTLR3_INT32 dfa<dfa.decisionNumber>_T<i0>[] =
{
<table; separator=", ", wrap="\n", null="-1">
};}; null = "">

/* Transition tables are a table of sub tables, with some tables
* reused for efficiency.
*/
static const ANTLR3_INT32 * const dfa<dfa.decisionNumber>_transitions[] =

```

```

{
 <dfa.transitionEdgeTables:{xref|dfa<dfa.decisionNumber>_T<xref>}; separator=", ", wrap="\n", null="_empty">
};

<if(dfa.specialStateSTs)>
static ANTLR3_INT32 dfa<dfa.decisionNumber>_sst(p<name> ctx, pANTLR3_BASE_RECOGNIZER recognizer,
pANTLR3_INT_STREAM is, pANTLR3_CYCLIC_DFA dfa, ANTLR3_INT32 s)
{
 ANTLR3_INT32 _s;

 _s = s;
 switch (s)
 {
 <dfa.specialStateSTs:{state |
 case <i0>:

 <state>}; separator="\n">
 }
 <if(backtracking)>
 if (BACKTRACKING > 0)
 {
 FAILEDFLAG = ANTLR3_TRUE;
 return -1;
 }
 <endif>

 CONSTRUCTEX();
 EXCEPTION->type = ANTLR3_NO_VIABLE_ALT_EXCEPTION;
 EXCEPTION->message = (void *)"<dfa.description>";
 EXCEPTION->decisionNum = <dfa.decisionNumber>;
 EXCEPTION->state = _s;
 <@noViableAltException()>
 return -1;
}
<endif>

<@errorMethod()>

/* Declare tracking structure for Cyclic DFA <dfa.decisionNumber>
*/
static
ANTLR3_CYCLIC_DFA cdfa<dfa.decisionNumber>
= {
 <dfa.decisionNumber>, /* Decision number of this dfa */
 /* Which decision this represents: */
 (const pANTLR3_UCHAR)"<dfa.description>",
 <if(dfa.specialStateSTs)>
 (C DFA_SPECIAL_FUNC) dfa<dfa.decisionNumber>_sst,

```

```

<else>
 (C DFA_SPECIAL_FUNC) antlr3dfaspecialStateTransition, /* Default special state transition function */
<endif>

 antlr3dfaspecialTransition, /* DFA specialTransition is currently just a default function in the runtime */
 antlr3dfapredict, /* DFA simulator function is in the runtime */
 dfa<dfa.decisionNumber>_eot, /* EOT table */
 dfa<dfa.decisionNumber>_eof, /* EOF table */
 dfa<dfa.decisionNumber>_min, /* Minimum tokens for each state */
 dfa<dfa.decisionNumber>_max, /* Maximum tokens for each state */
 dfa<dfa.decisionNumber>_accept, /* Accept table */
 dfa<dfa.decisionNumber>_special, /* Special transition states */
 dfa<dfa.decisionNumber>_transitions /* Table of transition tables */

};
/* End of Cyclic DFA <dfa.decisionNumber>
* -----
*/
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
* state.
*/
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
{
 ANTLR3_UINT32 LA<decisionNumber>_<stateNumber>;<\n>
 ANTLR3_MARKER index<decisionNumber>_<stateNumber>;<\n>

 LA<decisionNumber>_<stateNumber> = LA(1);<\n>
 <if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
 index<decisionNumber>_<stateNumber> = INDEX();<\n>
 REWINDLAST();<\n>
 <endif>
 s = -1;
 <edges; separator="\nelse ">
 <if(semPredState)> <! return input cursor to state before we rewound !>
 SEEK(index<decisionNumber>_<stateNumber>);<\n>
 <endif>
 if (s>=0)
 {
 return s;
 }
 }
 break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
* state to jump to next if successful.

```

```

*/
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>)
{
s = <targetStateNumber>;
}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
* always jump to the target.
*/
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "((<left>) && (<right>))"

orPredicates(operands) ::= "((<first(operands)>)<rest(operands):{o | |(<o>)}>)"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>(ctx)"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
* somewhere. Must ask for the lookahead directly.
*/
isolatedLookaheadTest(atom,k,atomAsInt) ::= "LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
((LA<decisionNumber>_<stateNumber> \>= <lower>) && (LA<decisionNumber>_<stateNumber> \<= <upper>))
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "((LA(<k>) \>= <lower>)
&& (LA(<k>) \<= <upper>))"

setTest(ranges) ::= "<ranges; separator='\" || \">"

// A T T R I B U T E S

makeScopeSet() ::= <<
/* makeScopeSet()

```

```

*/
/** Definition of the <scope.name> scope variable tracking
* structure. An instance of this structure is created by calling
* <name>_<scope.name>Push().
*/
typedef struct <scopeStruct(sname=scope.name,...)>_struct
{
 /** Function that the user may provide to be called when the
 * scope is destroyed (so you can free pANTLR3_HASH_TABLES and so on)
 *
 * \param POinter to an instance of this typedef/struct
 */
 void (ANTLR3_CDECL *free) (struct <scopeStruct(sname=scope.name,...)>_struct * frame);

 /* =====
 * Programmer defined variables...
 */
 <scope.attributes:{<it.decl>;}; separator="\n">

 /* End of programmer defined variables
 * =====
 */
}
<scopeStruct(sname=scope.name,...)>, * <scopeType(sname=scope.name,...)>;

>>

globalAttributeScopeDecl(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScopeDecl(scope)
*/
<makeScopeSet(...)>
<endif>
>>

ruleAttributeScopeDecl(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeDecl(scope)
*/
<makeScopeSet(...)>
<endif>
>>

globalAttributeScopeFuncDecl(scope) ::=
<<
/* globalAttributeScopeFuncDecl(scope)
*/
<if(scope.attributes)>

```

```

/* -----
* Function declaration for creating a <name>_<scope.name> scope set
*/
static <scopeType(sname=scope.name,...)> <scopePushName(sname=scope.name,...)>(p<name> ctx);
static void ANTLR3_CDECL <scope.name>Free(<scopeType(sname=scope.name)> scope);
/* ----- */

<endif>
>>

globalAttributeScopeFuncMacro(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScopeFuncMacro(scope)
*/
/** Function for popping the top value from a <scopeStack(sname=scope.name)>
*/
void
<scopePopName(sname=scope.name,...)>(p<name> ctx)
{
 // First see if the user defined a function they want to be called when a
 // scope is popped/freed.
 //
 // If the user supplied the scope entries with a free function, then call it first
 //
 if (SCOPE_TOP(<scope.name>)->free != NULL)
 {
 SCOPE_TOP(<scope.name>)->free(SCOPE_TOP(<scope.name>));
 }

 // Now we decrement the scope's upper limit bound. We do not actually pop the scope as
 // we want to reuse scope entries if we do continuous push and pops. Most scopes don't
 // next too far so we don't want to keep freeing and allocating them
 //
 ctx-><scopeStack(sname=scope.name,...)>_limit--;
 SCOPE_TOP(<scope.name>) = (<scopeType(sname=scope.name)>)(ctx-><scopeStack(sname=scope.name,...)>-
 >get(ctx-><scopeStack(sname=scope.name,...)>, ctx-><scopeStack(sname=scope.name,...)>_limit - 1));
}
<endif>
>>

ruleAttributeScopeFuncDecl(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeFuncDecl(scope)
*/
/* -----
* Function declarations for creating a <name>_<scope.name> scope set
*/
static <scopeType(sname=scope.name,...)> <scopePushName(sname=scope.name,...)>(p<name> ctx);

```



```

static void ANTLR3_CDECL <scope.name>Free(<scopeType(sname=scope.name)> scope);
/* ----- */

<endif>
>>

ruleAttributeScopeFuncMacro(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeFuncMacro(scope)
*/
/** Function for popping the top value from a <scopeStack(sname=scope.name,...)>
*/
void
<scopePopName(sname=scope.name,...)>(p<name> ctx)
{
 // First see if the user defined a function they want to be called when a
 // scope is popped/freed.
 //
 // If the user supplied the scope entries with a free function, then call it first
 //
 if (SCOPE_TOP(<scope.name>)->free != NULL)
 {
 SCOPE_TOP(<scope.name>)->free(SCOPE_TOP(<scope.name>));
 }

 // Now we decrement the scope's upper limit bound. We do not actually pop the scope as
 // we want to reuse scope entries if we do continuous push and pops. Most scopes don't
 // next too far so we don't want to keep freeing and allocating them
 //
 ctx-><scopeStack(sname=scope.name,...)>_limit--;
 SCOPE_TOP(<scope.name>) = (<scopeType(sname=scope.name)>)(ctx-><scopeStack(sname=scope.name,...)>-
 >get(ctx-><scopeStack(sname=scope.name,...)>, ctx-><scopeStack(sname=scope.name,...)>_limit - 1));
}

<endif>
>>

globalAttributeScopeDef(scope) ::=
<<
/* globalAttributeScopeDef(scope)
*/
<if(scope.attributes)>
/** Pointer to the <scope.name> stack for use by <scopePushName(sname=scope.name)>()
* and <scopePopName(sname=scope.name,...)>()
*/
pANTLR3_STACK <scopeStack(sname=scope.name)>;
ANTLR3_UINT32 <scopeStack(sname=scope.name)>_limit;
/** Pointer to the top of the stack for the global scope <scopeStack(sname=scope.name)>

```

```

*/
<scopeType(sname=scope.name,...)> (*<scopePushName(sname=scope.name,...)>)(struct <name>_Ctx_struct *
ctx);
<scopeType(sname=scope.name,...)> <scopeTopDecl(sname=scope.name,...)>;

<endif>
>>

ruleAttributeScopeDef(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeDef(scope)
*/
/** Pointer to the <scope.name> stack for use by <scopePushName(sname=scope.name)>()
* and <scopePopName(sname=scope.name,...)>()
*/
pANTLR3_STACK <scopeStack(sname=scope.name,...)>;
ANTLR3_UINT32 <scopeStack(sname=scope.name,...)>_limit;
<scopeType(sname=scope.name,...)> (*<scopePushName(sname=scope.name,...)>)(struct <name>_Ctx_struct *
ctx);
<scopeType(sname=scope.name,...)> <scopeTopDecl(sname=scope.name,...)>;

<endif>
>>

globalAttributeScopeFuncs(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScopeFuncs(scope)
*/
<attributeFuncs(scope)>
<endif>
>>

ruleAttributeScopeFuncs(scope) ::= <<
<if(scope.attributes)>
/* ruleAttributeScopeFuncs(scope)
*/
<attributeFuncs(scope)>
<endif>
>>

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScope(scope)
*/
ctx-><scopePushName(sname=scope.name,...)> = <scopePushName(sname=scope.name,...)>;
ctx-><scopeStack(sname=scope.name,...)> = antlr3StackNew(0);
ctx-><scopeStack(sname=scope.name,...)>_limit = 0;
<scopeTop(sname=scope.name,...)> = NULL;

```

```

<endif>
>>

ruleAttributeScope(scope) ::=
<<
<if(scope.attributes)>
/* ruleAttributeScope(scope)
*/
ctx-><scopePushName(sname=scope.name,...)> = <scopePushName(sname=scope.name,...)>;
ctx-><scopeStack(sname=scope.name,...)> = antlr3StackNew(0);
ctx-><scopeStack(sname=scope.name,...)>_limit = 0;
<scopeTop(sname=scope.name,...)> = NULL;
<endif>
>>

globalAttributeScopeFree(scope) ::= <<
<if(scope.attributes)>
/* globalAttributeScope(scope)
*/
ctx-><scopeStack(sname=scope.name,...)>->free(ctx-><scopeStack(sname=scope.name,...)>);
<endif>
>>

ruleAttributeScopeFree(scope) ::=
<<
<if(scope.attributes)>
/* ruleAttributeScope(scope)
*/
ctx-><scopeStack(sname=scope.name,...)>->free(ctx-><scopeStack(sname=scope.name,...)>);
<endif>
>>

scopeTopDecl(sname) ::= <<
p<name>_<sname>Top
>>

scopeTop(sname) ::= <<
ctx-><scopeTopDecl(sname=sname,...)>
>>

scopePop(sname) ::= <<
<scopePopName(sname=sname,...)>(ctx);
>>

scopePush(sname) ::= <<
p<name>_<sname>Push(ctx)
>>

scopePopName(sname) ::= <<

```

```
p<name>_<sname>Pop
```

```
>>
```

```
scopePushName(sname) ::= <<
```

```
p<name>_<sname>Push
```

```
>>
```

```
scopeType(sname) ::= <<
```

```
p<name>_<sname>_SCOPE
```

```
>>
```

```
scopeStruct(sname) ::= <<
```

```
<name>_<sname>_SCOPE
```

```
>>
```

```
scopeStack(sname) ::= <<
```

```
p<name>_<sname>Stack
```

```
>>
```

```
attributeFuncs(scope) ::= <<
```

```
<if(scope.attributes)>
```

```
/* attributeFuncs(scope)
```

```
*/
```

```
static void ANTLR3_CDECL <scope.name>Free(<scopeType(sname=scope.name)> scope)
```

```
{
```

```
 ANTLR3_FREE(scope);
```

```
}
```

```
/** \brief Allocate initial memory for a <name> <scope.name> scope variable stack entry and
```

```
* add it to the top of the stack.
```

```
*
```

```
* \remark
```

```
* By default the structure is freed with ANTLR_FREE(), but you can use the
```

```
* the \@init action to install a pointer to a custom free() routine by
```

```
* adding the code:
```

```
* \code
```

```
* <scopeTop(sname=scope.name)>->free = myroutine;
```

```
* \endcode
```

```
*
```

```
* With lots of comments of course! The routine should be declared in
```

```
* \@members { } as:
```

```
* \code
```

```
* void ANTLR3_CDECL myfunc(<scopeType(sname=scope.name)> ptr).
```

```
* \endcode
```

```
*
```

```
* It should perform any custom freeing stuff that you need (call ANTLR_FREE3, not free())
```

```
* NB: It should not free the pointer it is given, which is the scope stack entry itself
```

```

* and will be freed by the function that calls your custom free routine.
*
*/
static <scopeType(sname=scope.name)>
<scopePushName(sname=scope.name)>(p<name> ctx)
{
 /* Pointer used to create a new set of attributes
 */
 <scopeType(sname=scope.name)> newAttributes;

 /* Allocate the memory for a new structure if we need one.
 */
 if (ctx-><scopeStack(sname=scope.name)>->size(ctx-><scopeStack(sname=scope.name)>) > ctx-
 ><scopeStack(sname=scope.name)>_limit)
 {
 // The current limit value was less than the number of scopes available on the stack so
 // we can just reuse one. Our limit tracks the stack count, so the index of the entry we want
 // is one less than that, or conveniently, the current value of limit.
 //
 newAttributes = (<scopeType(sname=scope.name)>)ctx-><scopeStack(sname=scope.name)>->get(ctx-
 ><scopeStack(sname=scope.name)>, ctx-><scopeStack(sname=scope.name)>_limit);
 }
 else
 {
 // Need a new allocation
 //
 newAttributes = (<scopeType(sname=scope.name)>)
 ANTLR3_MALLOC(sizeof(<scopeStruct(sname=scope.name)>));
 if (newAttributes != NULL)
 {
 /* Standard ANTLR3 library implementation
 */
 ctx-><scopeStack(sname=scope.name)>->push(ctx-><scopeStack(sname=scope.name)>, newAttributes,
 (void (*)(void *))<scope.name>Free);
 }
 }

 // Blank out any previous free pointer, the user might or might install a new one.
 //
 newAttributes->free = NULL;

 // Indicate the position in the available stack that the current level is at
 //
 ctx-><scopeStack(sname=scope.name)>_limit++;

 /* Return value is the pointer to the new entry, which may be used locally
 * without de-referencing via the context.
 */
}

```

```

 return newAttributes;
}<\n>

<endif>
>>
returnStructName() ::= "<it.name>_return"

returnType() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>_<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
<else>
ANTLR3_BOOLEAN
<endif>
>>

/** Generate the C type associated with a single or multiple return
 * value(s).
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.grammar.recognizerName>_<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "0".
 */
initValue(typeName) ::= <<
<cTypeInitMap.(typeName)>
>>

```

```

/** Define a rule label */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text>;
#undef RETURN_TYPE_<label.label.text>
#define RETURN_TYPE_<label.label.text> <ruleLabelType(referencedRule=label.referencedRule)><\n>
>>

/** Rule label default value */
ruleLabelInitVal(label) ::= <<
<if(label.referencedRule.hasSingleReturnValue)>
<label.label.text> = <initValue(label.referencedRule.singleValueReturnType)>;
<endif>
>>

```

```

ASTLabelType() ::=
"<if(recognizer.ASTLabelType)><recognizer.ASTLabelType><else>pANTLR3_BASE_TREE<endif>"

```

```

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
typedef struct <ruleDescriptor.grammar.recognizerName>_<ruleDescriptor:returnStructName()>_struct
{
<if(!TREE_PARSER)>
/** Generic return elements for ANTLR3 rules that are not in tree parsers or returning trees
 */
pANTLR3_COMMON_TOKEN start;
pANTLR3_COMMON_TOKEN stop;
<else>
<recognizer.ASTLabelType> start;
<recognizer.ASTLabelType> stop;
<endif>
<@ruleReturnMembers()>
<ruleDescriptor.returnScope.attributes:{<it.decl>;}; separator="\n">
}
<ruleDescriptor.grammar.recognizerName>_<ruleDescriptor:returnStructName()>;<\n><\n>
<endif>
<endif>
>>

```

```

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>;}; separator=", ">
>>

```

```

parameterAttributeRef(attr) ::= "<attr.name>"

```

```
parameterSetAttributeRef(attr,expr) ::= "<attr.name>=<expr>";
```

```
/** Note that the scopeAttributeRef does not have access to the
* grammar name directly
*/
```

```
scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
 ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get(ctx->SCOPE_STACK(<scope>), ctx->
>SCOPE_STACK(<scope>)->size(ctx->SCOPE_STACK(<scope>)) - <negIndex> - 1))-><attr.name>
<else>
<if(index)>
 ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get(ctx->SCOPE_STACK(<scope>),
(ANTLR3_UINT32)<index>)))-><attr.name>
<else>
 (SCOPE_TOP(<scope>))-><attr.name>
<endif>
<endif>
>>
```

```
scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
 ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get(ctx->SCOPE_STACK(<scope>), ctx->
>SCOPE_STACK(<scope>)->size(ctx->SCOPE_STACK(<scope>)) - <negIndex> - 1))-><attr.name> = <expr>;
<else>
<if(index)>
 ((SCOPE_TYPE(<scope>))(ctx->SCOPE_STACK(<scope>)->get(ctx->SCOPE_STACK(<scope>),
(ANTLR3_UINT32)<index>)))-><attr.name> = <expr>;
<else>
 (SCOPE_TOP(<scope>))-><attr.name>=<expr>;
<endif>
<endif>
>>
```

```
/** $x is either global scope or x is rule with dynamic scope; refers
* to stack itself not top of stack. This is useful for predicates
* like {$function.size(>0) && $function::name.equals("foo")}?
*/
```

```
isolatedDynamicScopeRef(scope) ::= "ctx->SCOPE_STACK(<scope>)"
```

```
/** reference an attribute of rule; might only have single return value */
```

```
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<scope>.<attr.name>
<else>
<scope>
<endif>
>>
```



```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>=<expr>;
<else>
<attr.name>=<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach
//
tokenLabelPropertyRef_text(scope,attr) ::= "(<scope>->getText(<scope>))"
tokenLabelPropertyRef_type(scope,attr) ::= "(<scope>->getType(<scope>))"
tokenLabelPropertyRef_line(scope,attr) ::= "(<scope>->getLine(<scope>))"
tokenLabelPropertyRef_pos(scope,attr) ::= "(<scope>->getCharPositionInLine(<scope>))"
tokenLabelPropertyRef_channel(scope,attr) ::= "(<scope>->getChannel(<scope>))"
tokenLabelPropertyRef_index(scope,attr) ::= "(<scope>->getTokenIndex(<scope>))"
tokenLabelPropertyRef_tree(scope,attr) ::= "(<scope>->tree)"
tokenLabelPropertyRef_int(scope,attr) ::= "(<scope>->getText(<scope>->toInt32(<scope>->getText(<scope>)))"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>.tree"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(STRSTREAM->toStringSS(STRSTREAM, <scope>.start, <scope>.start))
<else>
(STRSTREAM->toStringTT(STRSTREAM, <scope>.start, <scope>.stop))
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>.st"

/** Isolated $RULE ref ok in lexer as it's a Token */

```

```

lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "(<scope>->getType(<scope>))"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "(<scope>->getLine(<scope>))"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "(<scope>->getCharPositionInLine(<scope>))"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "(<scope>->getChannel(<scope>))"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "(<scope>->getTokenIndex(<scope>))"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "(<scope>->getText(<scope>))"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "retval.start"
rulePropertyRef_stop(scope,attr) ::= "retval.stop"
rulePropertyRef_tree(scope,attr) ::= "retval.tree"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
INPUT->toStringSS(INPUT, ADAPTOR->getTokenStartIndex(ADAPTOR, retval.start), ADAPTOR-
>getTokenStopIndex(ADAPTOR, retval.start))
<else>
STRSTREAM->toStringTT(STRSTREAM, retval.start, LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "LEXER->getText(LEXER)"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "LEXSTATE->tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "LEXSTATE->tokenStartCharPositionInLine"
lexerRulePropertyRef_channel(scope,attr) ::= "LEXSTATE->channel"
lexerRulePropertyRef_start(scope,attr) ::= "LEXSTATE->tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(LEXER->getCharIndex(LEXER)-1)"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_int(scope,attr) ::= "LEXER->getText(LEXER)->toInt32(LEXER->getText(LEXER))"

// setting $st and $tree is allowed in local rule. everything else is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree=<expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st=<expr>;"

/** How to execute an action (when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if (<actions.(actionScope).synpredgate>)
{
<action>
}
<else>

```

```

if (BACKTRACKING == 0)
{
 <action>
}
<endif>
<else>
{
 <action>
}
<endif>
>>

```

```
// M I S C (properties, etc...)
```

```
bitsetDeclare(name, words64) ::= <<
```

```
/** Bitset defining follow set for error recovery in rule state: <name> */
```

```
static ANTLR3_BITWORD <name>_bits[] = { <words64:{ANTLR3_UINT64_LIT(<it>)}; separator=", "> };
```

```
static ANTLR3_BITSET_LIST <name> = { <name>_bits, <length(words64)> };
```

```
>>
```

```
bitset(name, words64) ::= <<
```

```
antlr3BitsetSetAPI(&<name>);<\n>
```

```
>>
```

```
codeFileExtension() ::= ".c"
```

```
true() ::= "ANTLR3_TRUE"
```

```
false() ::= "ANTLR3_FALSE"
```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/C/C.stg

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```
/*
```

```
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```

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```

```
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```

```
*
```

```
* Conversion to C#:
```

```
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```

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```
*
```

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```

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```

```

*/
/** Template subgroup to add template rewrite output
* If debugging, then you'll also get STDbg.stg loaded.
*/

```

```

group ST;

```

```

@outputFile.imports() ::= <<
<@super.imports(>
using Antlr3.ST;
using Antlr3.ST.Language;
>>

```

```

/** Add this to each rule's return value struct */
@returnScope.ruleReturnMembers() ::= <<
public StringTemplate st;
public object getTemplate() { return st; }
public override string ToString() { return (st==null) ? null : st.ToString(); }
>>

```

```

@genericParser.members() ::= <<
<@super.members(>
protected StringTemplateGroup templateLib = new StringTemplateGroup("<name>Templates",
typeof(AngleBracketTemplateLexer));

```

```

public StringTemplateGroup TemplateLib
{
get { return templateLib; }
set { templateLib = value; }
}

```

```

/** allows convenient multi-value initialization:

```

```

// * "new STAttrMap().put(...).put(...)"

```

```

// */
//public static class STAttrMap extends HashMap {
// public STAttrMap put(String attrName, object value) {
// super.put(attrName, value);
// return this;
// }
// public STAttrMap put(String attrName, int value) {
// super.put(attrName, new Integer(value));
// return this;
// }
//}
>>

/** x+=rule when output=template */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".getTemplate()",...)>
>>

rewriteTemplate(alts) ::= <<

// TEMPLATE REWRITE
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
 <alts:rewriteTemplateAlt(); separator="else ">
 <if(rewriteMode)><replaceTextInLine()><endif>
}
<else>
<alts:rewriteTemplateAlt(); separator="else ">
<if(rewriteMode)><replaceTextInLine()><endif>
<endif>
>>

replaceTextInLine() ::= <<
<if(TREE_PARSER)>
((TokenRewriteStream)input.TokenStream).replace(
 input.TreeAdaptor.GetTokenStartIndex(retval.start),
 input.TreeAdaptor.GetTokenStopIndex(retval.start),
 retval.st);
<else>
((TokenRewriteStream)input).replace(
 ((IToken)retval.start).TokenIndex,
 input.LT(-1).TokenIndex,
 retval.st);
<endif>
>>

```

```

rewriteTemplateAlt() ::= <<
// <it.description>
<if(it.pred)>
if (<it.pred>)
{
 retval.st = <it.alt>;
}<\n>
<else>
{
 retval.st = <it.alt>;
}<\n>
<endif>
>>

```

```

rewriteEmptyTemplate(alts) ::= <<
null;
>>

```

```

/** Invoke a template with a set of attribute name/value pairs.
 * Set the value of the rule's template after having set
 * the attributes because the rule's template might be used as
 * an attribute to build a bigger template; you get a self-embedded
 * template.
 */

```

```

rewriteExternalTemplate(name,args) ::= <<
templateLib.getInstanceOf("<name>"<if(args)>,
 new STAttrMap()<args:{a | .put("<a.name>", <a.value>)}>
 <endif>)
>>

```

```

/** expr is a string expression that says what template to load */
rewriteIndirectTemplate(expr,args) ::= <<
templateLib.getInstanceOf(<expr>"<if(args)>,
 new STAttrMap()<args:{a | .put("<a.name>", <a.value>)}>
 <endif>)
>>

```

```

/** Invoke an inline template with a set of attribute name/value pairs */
rewriteInlineTemplate(args, template) ::= <<
new StringTemplate(templateLib, "<template>"<if(args)>,
 new STAttrMap()<args:{a | .put("<a.name>", <a.value>)}>
 <endif>)
>>

```

```

/** plain -> {foo} action */
rewriteAction(action) ::= <<
<action>
>>

```

```
/** An action has %st.attrName=expr; or % {st}.attrName=expr; */
actionSetAttribute(st,attrName,expr) ::= <<
(<st>).setAttribute("<attrName>",<expr>);
>>
```

```
/** Translate %{stringExpr} */
actionStringConstructor(stringExpr) ::= <<
new StringTemplate(templateLib,<stringExpr>)
>>
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp3/ST.stg
```

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```
*/
```

```
group AST;
```

```
@outputFile.imports() ::= <<
<@super.imports()>
<if(!TREE_PARSER)><! tree parser would already have imported !>
```

```

import org.antlr.runtime.tree.*;<\n>
<endif>
>>

@genericParser.members() ::= <<
<@super.members()>
<parserMembers()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
protected var adaptor:TreeAdaptor = new CommonTreeAdaptor();<\n>
override public function set treeAdaptor(adaptor:TreeAdaptor):void {
 this.adaptor = adaptor;
 <grammar.directDelegates: { g|<g:delegateName()>.treeAdaptor = this.adaptor; }>
}
override public function get treeAdaptor():TreeAdaptor {
 return adaptor;
}
>>

@returnScope.ruleReturnMembers() ::= <<
<ASTLabelType> tree;
public function get tree():Object { return tree; }
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
var root_0:<ASTLabelType> = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,
 ruleDescriptor.wildcardTreeListLabels]:{ var <it.label.text>_tree:<ASTLabelType>=null;}; separator="\n">
<ruleDescriptor.tokenListLabels:{ var <it.label.text>_tree:<ASTLabelType>=null;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
 :{ var stream_<it>:RewriteRule<rewriteElementType>Stream=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
 :{ var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"rule <it>");};
separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative

```



```

* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = <ASTLabelType>(adaptor.nil());<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.add(<label>.tree);
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<

```

```

<ruleRefTrack(...)>
<listLabel(elem=label+".tree",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.add(<label>.tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".tree",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {<\n>
<endif>
<prevRuleRootRef(>).tree = root_0;
<rewriteCodeLabels(>
root_0 = <ASTLabelType>(adaptor.nil());
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>).tree = <ASTLabelType>(adaptor.rulePostProcessing(root_0));
input.replaceChildren(adaptor.getParent(retval.start),

```

```

 adaptor.getChildIndex(retval.start),
 adaptor.getChildIndex(_last),
 retval.tree);
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.tree = root_0;
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>.tree = root_0;
<endif>
<endif>
<if(backtracking)>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {var stream_<it>:RewriteRule<rewriteElementType>Stream=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
separator="\n"
>
<referencedTokenListLabels
: {var stream_<it>:RewriteRule<rewriteElementType>Stream=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it> ", list_<it>)};
separator="\n"
>
<referencedWildcardLabels
: {var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};
separator="\n"
>
<referencedWildcardListLabels
: {var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"wildcard
<it> ",list_<it>)};
separator="\n"
>
<referencedRuleLabels
: {var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"rule
<it>",<it>!=null?<it>.tree:null)};
separator="\n"
>
<referencedRuleListLabels
: {var stream_<it>:RewriteRuleSubtreeStream=new RewriteRuleSubtreeStream(adaptor,"rule <it> ",list_<it>)};
separator="\n"
>
>>

```

```

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
if (<referencedElementsDeep:{el | stream_<el>.hasNext}; separator="||">) {
 <alt>
}
<referencedElementsDeep:{el | stream_<el>.reset();<n>}>
>>

rewriteClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
while (<referencedElements:{el | stream_<el>.hasNext}; separator="||">) {
 <alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

rewritePositiveClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.hasNext}; separator="||">)) {
 throw new RewriteEarlyExitException();
}
while (<referencedElements:{el | stream_<el>.hasNext}; separator="||">) {
 <alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>

```

```

if (<a.pred>) {
 <a.alt>
}<\n>
<else>
{
 <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
var root_<treeLevel>:<ASTLabelType> = <ASTLabelType>(adaptor.nil());
<root:rewriteElement()>
<children:rewriteElement()>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
adaptor.addChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>));<\n>

```

>>

```
/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot
```

```
/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>));<\n>
>>
```

```
rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>
```

```
rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>));<\n>
>>
```

```
/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>
```

```
/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"
```

```
rewriteRuleRef(rule) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<rule>.nextTree());<\n>
>>
```

```
rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<rule>.nextNode(), root_<treeLevel>));<\n>
>>
```

```
rewriteNodeAction(action) ::= <<
adaptor.addChild(root_<treeLevel>, <action>);<\n>
>>
```

```
rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(<action>, root_<treeLevel>));<\n>
>>
```

```

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>));<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = <ASTLabelType>(adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>));<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>
new <hetero>(tokenType<if(args)>, <args; separator=", "><endif>)
<else>
<ASTLabelType>(adaptor.create(tokenType, <args; separator=", "><if(!args)>"<tokenType>"<endif>))
<endif>
>>

createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
new <hetero>(stream_<token>.nextToken()<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
adaptor.create(<token>, <args; separator=", ">)
<else>
stream_<token>.nextNode()
<endif>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/ActionScript/AST.stg

```

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\*/

/\*\* Templates for building ASTs during normal parsing.

\*

- \* Deal with many combinations. Dimensions are:
- \* Auto build or rewrite
- \* no label, label, list label (label/no-label handled together)
- \* child, root
- \* token, set, rule, wildcard
- \*
- \* The situation is not too bad as rewrite (->) usage makes ^ and !
- \* invalid. There is no huge explosion of combinations.

\*/

group ASTParser;

// TOKEN AST STUFF

/\*\* ID and output=AST \*/

tokenRef(token,label,hetero,elementIndex) ::= <<

<super.tokenRef(...)>



```

<if(backtracking)>if (backtracking == 0) {<endif>
 _<label>_tree = (<ASTLabelType>)[treeAdaptor newTreeWithToken:<_<label>];
 [treeAdaptor addChild:<_<label>_tree toTree:root_0];
 [<_<label>_tree release];
</if(backtracking)><endif>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,hetero,elementIndex) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (backtracking == 0) {<endif>
 _<label>_tree = (<ASTLabelType>)[treeAdaptor newTreeWithToken:<_<label>];
 root_0 = (<ASTLabelType>)[treeAdaptor makeNode:<_<label>_tree parentOf:root_0];
 [<_<label>_tree release];
</if(backtracking)><endif>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated

```

```

// rather than just added on code. Investigate that refactoring when
// I have more time.

// TODO: add support for heterogeneous trees

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={
<if(backtracking)>if (backtracking == 0) {<endif>
_<label>_tree = (<ASTLabelType>)[treeAdaptor newTreeWithToken:_<label>];
[treeAdaptor addChild:_<label>_tree toTree:root_0];
[_<label>_tree release];
<if(backtracking)>}<endif>
})>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(backtracking)>if (backtracking == 0) {<endif>
_<label>_tree = (<ASTLabelType>)[treeAdaptor newTreeWithToken:_<label>];
root_0 = (<ASTLabelType>)[treeAdaptor makeNode:_<label>_tree parentOf:root_0];
[_<label>_tree release];
<if(backtracking)>}<endif>
})>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (backtracking == 0) <endif>[treeAdaptor addChild:[_<label> tree] toTree:root_0];
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (backtracking == 0) <endif>root_0 = (<ASTLabelType>)[treeAdaptor makeNode:[_<label>
tree] parentOf:root_0];
>>

```

```

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem="["+label+" tree]",...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(elem="["+label+" tree]",...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem="["+label+" tree]",...)>
>>

// WILDCARD AST

wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (backtracking == 0) {<endif>
_<label>_tree = (<ASTLabelType>)[treeAdaptor newTreeWithToken:_<label>];
[treeAdaptor addChild:_<label>_tree toTree:root_0];
[_<label>_tree release];
<if(backtracking)>}<endif>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (backtracking == 0) {<endif>
_<label>_tree = (<ASTLabelType>)[treeAdaptor newTreeWithToken:_<label>];
root_0 = (<ASTLabelType>)[treeAdaptor makeNode:_<label>_tree parentOf:root_0];
[_<label>_tree release];
<if(backtracking)>}<endif>
>>

createNodeFromToken(label,hetero) ::= <<
<if(hetero)>
new <hetero>(<label>) <! new MethodNode(IDLabel) !>
<else>
(<ASTLabelType>)adaptor.create(<label>)
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/ObjC/ASTParser.stg

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\*/

group AST;

@outputFile.imports() ::= <<

<@super.imports(>

<if(!TREE\_PARSER)><! tree parser would already have imported !>

using Antlr.Runtime.Tree;

using RewriteRuleITokenStream = Antlr.Runtime.Tree.RewriteRuleTokenStream;<\n>

<endif>

>>

@genericParser.members() ::= <<

```

<@super.members()>
<parserMembers()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
protected ITreeAdaptor adaptor = new CommonTreeAdaptor();<\n>
public ITreeAdaptor TreeAdaptor
{
 get
 {
 return adaptor;
 }
 set
 {
 this.adaptor = value;
 <grammar.directDelegates: {g|<g:delegateName()>.TreeAdaptor = this.adaptor;}>
 }
}
>>

@returnScope.ruleReturnMembers() ::= <<
public <ASTLabelType> tree;
public override object Tree { get { return tree; } }
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> root_0 = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {<ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.tokenListLabels: {<ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>");}; separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative
* block.

```

```

*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType>)adaptor.Nil();<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.Add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.Add(<label>.Tree);
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefTrack(...)>

```

```

<listLabel(elem=label+".Tree",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.Add(<label>.Tree);
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".Tree",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

{
// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {<n>
<endif>
<prevRuleRootRef(>).tree = root_0;
<rewriteCodeLabels(>
root_0 = (<ASTLabelType>)adaptor.Nil();
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>).tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);

```

```

input.ReplaceChildren(adaptor.GetParent(retval.start),
 adaptor.GetChildIndex(retval.start),
 adaptor.GetChildIndex(_last),
 retval.tree);
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.tree = root_0;<\n>
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>.tree = root_0;
<endif>
<endif>
<if(backtracking)>
}<\n>
<endif>
}

>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
 :{RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
 separator="\n"
>
<referencedTokenListLabels
 :{RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it> ", list_<it>)};
 separator="\n"
>
<referencedWildcardLabels
 :{RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};
 separator="\n"
>
<referencedWildcardListLabels
 :{RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it> ",list_<it>)};
 separator="\n"
>
<referencedRuleLabels
 :{RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule
<it>",<it>!=null?<it>.tree:null)};
 separator="\n"
>
<referencedRuleListLabels
 :{RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"token <it> ",list_<it>)};
 separator="\n"

```



```

>
>>

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
if (<referencedElementsDeep:{el | stream_<el>.HasNext}; separator="||">)
{
 <alt>
}
<referencedElementsDeep:{el | stream_<el>.Reset();<n>}>
>>

rewriteClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
while (<referencedElements:{el | stream_<el>.HasNext}; separator="||">)
{
 <alt>
}
<referencedElements:{el | stream_<el>.Reset();<n>}>
>>

rewritePositiveClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.HasNext}; separator="||">))
{
 throw new RewriteEarlyExitException();
}
while (<referencedElements:{el | stream_<el>.HasNext}; separator="||">)
{
 <alt>
}

```

```

<referencedElements:{el | stream_<el>.Reset();<\n}>
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>
if (<a.pred>)
{
<a.alt>
}<\n>
<else>
{
<a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.Nil();
<root:rewriteElement()>
<children:rewriteElement()>
adaptor.AddChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
adaptor.AddChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */

```

```

rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot

/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>);<\n>
>>

rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<
adaptor.AddChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>

rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>);<\n>
>>

/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>

/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"

rewriteRuleRef(rule) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<rule>.NextTree());<\n>
>>

rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<rule>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteNodeAction(action) ::= <<

```

```

adaptor.AddChild(root_<treeLevel>, <action>);<\n>
>>

rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<action>, root_<treeLevel>);<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(stream_<label>.NextNode(), root_<treeLevel>);<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
adaptor.AddChild(root_<treeLevel>, stream_<label>.NextTree());<\n>
>>

createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>
new <hetero>(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
(<ASTLabelType>)adaptor.Create(<tokenType>, <args; separator=", "><if(!args)><tokenType><endif>)
<endif>
>>

createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
new <hetero>(stream_<token>.NextToken(<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
adaptor.Create(<token>, <args; separator=", ">)
<else>
stream_<token>.NextNode()

```

<endif>

<endif>

>>

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp3/AST.stg

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\*/

/\*\* Templates for building ASTs during normal parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* The situation is not too bad as rewrite (->) usage makes ^ and !

```

* invalid. There is no huge explosion of combinations.
*/
group ASTParser;

@rule.setErrorReturnValue() ::= <<
// Conversion of the second argument necessary, but harmless
retval.Tree = (<ASTLabelType>)adaptor.ErrorNode(input, (IToken) retval.Start, input.LT(-1), re);
<! System.Console.WriteLine("<ruleName> returns " + ((CommonTree)retval.Tree).ToStringTree()); !>
>>

// TOKEN AST STUFF

/** ID and output=AST */
tokenRef(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>
if (state.backtracking == 0)
{
<endif>
<label>_tree = <createNodeFromToken(...)>;
adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)>
}
<endif>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>
if (state.backtracking == 0)
{
<endif>
<label>_tree = <createNodeFromToken(...)>;
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)>
}
<endif>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

```

```

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={<if(backtracking)>if (state.backtracking == 0)
<endif>adaptor.AddChild(root_0, <createNodeFromToken(...)>);}>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
<super.matchSet(..., postmatchCode={<if(backtracking)>if (state.backtracking == 0) <endif>root_0 =
(<ASTLabelType>)adaptor.BecomeRoot(<createNodeFromToken(...)>, root_0);}>
>>

```

```

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (state.backtracking == 0) <endif>adaptor.AddChild(root_0, <label>.Tree);
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (state.backtracking == 0) <endif>root_0 =
(<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_0);
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".Tree",...)>
>>

// WILDCARD AST

wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>
if (state.backtracking == 0)
{
<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)>
}

```



```

<endif>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>
if (state.backtracking == 0)
{
<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)>
}
<endif>
>>

createNodeFromToken(label,hetero) ::= <<
<if(hetero)>
new <hetero>(<label>) <! new MethodNode(IDLabel) !>
<else>
(<ASTLabelType>)adaptor.Create(<label>)
<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
<endif>
retval.Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
<if(!TREE_PARSER)>
adaptor.SetTokenBoundaries(retval.Tree, (IToken) retval.Start, (IToken) retval.Stop);
<endif>
<if(backtracking)>
}
<endif>
>>

```

Found in path(s):

- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp/ASTParser.stg
- \* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp/ASTParser.stg

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\*/

/\*\* ANTLR's code generator.

\*

- \* Generate recognizers derived from grammars. Language independence
- \* achieved through the use of StringTemplateGroup objects. All output
- \* strings are completely encapsulated in the group files such as Java.stg.
- \* Some computations are done that are unused by a particular language.
- \* This generator just computes and sets the values into the templates;
- \* the templates are free to use or not use the information.
- \*
- \* To make a new code generation target, define X.stg for language X
- \* by copying from existing Y.stg most closely related to your language;
- \* e.g., to do CSharp.stg copy Java.stg. The template group file has a
- \* bunch of templates that are needed by the code generator. You can add
- \* a new target w/o even recompiling ANTLR itself. The language=X option
- \* in a grammar file dictates which templates get loaded/used.
- \*
- \* Some language like C need both parser files and header files. Java needs
- \* to have a separate file for the cyclic DFA as ANTLR generates bytecodes
- \* directly (which cannot be in the generated parser Java file). To facilitate
- \* this,
- \*

\* cyclic can be in same file, but header, output must be searpate. recognizer  
\* is in outptufile.  
\*/

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/CodeGenerator.java

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/Transition.java

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/Utils.java

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/Target.java

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/BitSet.java

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NFAConfiguration.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NFAState.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/Interval.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/DecisionProbe.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/Label.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NFAToDFAConverter.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/IntSet.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/SemanticContext.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/DFAOptimizer.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/NFAFactory.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NFA.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Java/Dbg.stg  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Java/ST.stg  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/NFAContext.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/JavaTarget.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/DFASState.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/analysis/RuleClosureTransition.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/ActionScriptTarget.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/OrderedHashSet.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/ACyclicDFACodeGenerator.java

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\*/

/\*\* Templates for building ASTs during tree parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* Each combination has its own template except that label/no label

\* is combined into tokenRef, ruleRef, ...

\*/

group ASTTreeParser;

/\*\* Add a variable to track last element matched \*/

ruleDeclarations() ::= <<

<super.ruleDeclarations()>

\_First[0] := nil;

\_Last := nil;<\n>

>>

ruleDeclarationVars() ::= <<

<super.ruleDeclarationVars()>

\_First, \_Save\_Last: array [0..63] of I<ASTLabelType>;

\_Last: I<ASTLabelType>;

>>

/\*\* What to emit when there is no rewrite rule. For auto build

\* mode, does nothing.

\*/

noRewrite(rewriteBlockLevel, treeLevel) ::= <<

<if(backtracking)>if (State.Backtracking = 0) then

begin<endif>

<if(rewriteMode)>

RetVal.Tree := \_First[0] as I<ASTLabelType>;

if (Adaptor.GetParent(RetVal.Tree) \<\> nil) and (Adaptor.IsNil(Adaptor.GetParent(RetVal.Tree))) then

```

RetVal.Tree := Adaptor.GetParent(RetVal.Tree) as I<ASTLabelType>;
<endif>
<if(backtracking)>end;<endif>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
begin
_Save_Last[<treeLevel>] := _Last;
_First[<treeLevel>] := nil;
<if(!rewriteMode)>
Root[<treeLevel>] := Adaptor.GetNilNode as I<ASTLabelType>;<\n>
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>
<if(root.el.rule)>
if (_First[<enclosingTreeLevel>] = nil) then _First[<enclosingTreeLevel>] := <root.el.label>.Tree;
<else>
if (_First[<enclosingTreeLevel>] = nil) then _First[<enclosingTreeLevel>] := <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (Input.LA(1) = TToken.DOWN) then
begin
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil); <checkRuleBacktrackFailure()>
end;
<else>
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
Adaptor.AddChild(Root[<enclosingTreeLevel>], Root[<treeLevel>]);
<endif>
_Last := _Save_Last[<treeLevel>];
end;<\n>
>>

// TOKEN AST STUFF

```

```

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin<\n>
<endif>
<if(hetero)>
<label>_tree := T<hetero>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Adaptor.AddChild(Root[<treeLevel>], <label>_tree);
<if(backtracking)>
end;
<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (State.Backtracking = 0) then <endif>
if (_First[<treeLevel>] = nil) then _First[<treeLevel>] := <label>;
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>
if (State.Backtracking = 0) then
begin
<endif>
<if(hetero)>

```

```

<label>_tree := T<hetero>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Root[<treeLevel>] := Adaptor.BecomeRoot(<label>_tree, Root[<treeLevel>]) as I<ASTLabelType>;
<if(backtracking)>
end;
<endif>
<endif>
>>

```

```

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```

```
// SET AST
```

```

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_Llast := Input.LT(1) as I<ASTLabelType>;
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then begin <endif>
<if(hetero)>
<label>_tree := T<hetero>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Adaptor.AddChild(Root[<treeLevel>], <label>_tree);
<if(backtracking)>end;<endif>
<endif>
}
)>
>>

```

```

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

```

```

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.matchSet(...)>
>>

```

```

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={

```



```

<if(!rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then begin <endif>
<if(hetero)>
<label>_tree := T<hetero>.Create(<label>);
<else>
<label>_tree := Adaptor.DupNode(<label>) as I<ASTLabelType>;
<endif><\n>
Root[<treeLevel>] := Adaptor.BecomeRoot(<label>_tree, Root[<treeLevel>]) as I<ASTLabelType>;
<if(backtracking)>end;<endif>
<endif>
}
)>
>>

```

```
// RULE REF AST
```

```

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRef(...)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>
<if(!rewriteMode)>
Adaptor.AddChild(Root[<treeLevel>], <label>.Tree);
<else> <! rewrite mode !>
if (_First[<treeLevel>] = nil) then _First[<treeLevel>] := <label>.Tree;
<endif>
>>

```

```

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>

```

```

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
_Last := Input.LT(1) as I<ASTLabelType>;
<super.ruleRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (State.Backtracking = 0) then <endif>Root[<treeLevel>] :=
Adaptor.BecomeRoot(<label>.Tree, Root[<treeLevel>]) as I<ASTLabelType>;
<endif>
>>

```

```

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".Tree",...)>

```

```

>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
 _Last := Input.LT(1) as I<ASTLabelType>;
 <super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _Last := Input.LT(1) as I<ASTLabelType>;
 <super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
 _Last := Input.LT(1) as I<ASTLabelType>;
 <super.ruleRefRuleRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _Last := Input.LT(1) as I<ASTLabelType>;
 <super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<
 <if(hetero)>
 T<hetero>.Create((Locals['Stream_<token>'] as IRewriteRuleElementStream).NextNode)
 <else>
 (Locals['Stream_<token>'] as IRewriteRuleElementStream).NextNode
 <endif>
>>

ruleCleanUp() ::= <<
 <super.ruleCleanUp()>
 <if(!rewriteMode)>
 <if(backtracking)>
 if (State.Backtracking = 0) then
 begin<\n>
 <endif>
 RetVal.Tree := Adaptor.RulePostProcessing(Root[0]) as I<ASTLabelType>;
 <if(backtracking)>
 end;
 <endif>

```

<endif>

>>

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Delphi/ASTTreeParser.stg

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/Ctarget.java

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\*/

/\*\* Templates for building ASTs during tree parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* Each combination has its own template except that label/no label

\* is combined into tokenRef, ruleRef, ...

\*/

group ASTTreeParser;

/\*\* Add a variable to track last element matched \*/

ruleDeclarations() ::= <<

<super.ruleDeclarations()>

<ASTLabelType> \_first\_0 = null;

<ASTLabelType> \_last = null;<n>

>>

/\*\* What to emit when there is no rewrite rule. For auto build

\* mode, does nothing.

\*/

noRewrite(rewriteBlockLevel, treeLevel) ::= <<

<if(backtracking)>if ( <actions.(actionScope).synpredgate> ) {<endif>

<if(rewriteMode)>

```

retval.Tree = (<ASTLabelType>)_first_0;
if (adaptor.GetParent(retval.Tree)!=null && adaptor.IsNil(adaptor.GetParent(retval.Tree)))
 retval.Tree = (<ASTLabelType>)adaptor.GetParent(retval.Tree);
<endif>
<if(backtracking)></endif>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)input.LT(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = null;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.GetNilNode();
<endif>
<root:element>
<if(rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = (<ASTLabelType>) <root.el.label>.Tree;
<else>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element>
<if(nullableChildList)>
if (input.LA(1) == Token.DOWN)
{
 Match(input, Token.DOWN, null); <checkRuleBacktrackFailure>
 <children:element>
 Match(input, Token.UP, null); <checkRuleBacktrackFailure>
}
<else>
Match(input, Token.DOWN, null); <checkRuleBacktrackFailure>
<children:element>
Match(input, Token.UP, null); <checkRuleBacktrackFailure>
<endif>
<if(!rewriteMode)>
adaptor.AddChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

```

```

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>
if (state.backtracking == 0)
{
<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
<endif><\n>
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>
}
<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>
if (state.backtracking == 0)
{

```

```

<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>
}
<endif>
<endif>
>>

```

```

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard and auto dup the node/subtree */
wildcard(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.wildcard(...)>
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.DupTree(<label>);
adaptor.AddChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (<actions.(actionScope).synpredgate>)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;
<endif>
>>

```

```

// SET AST

```

```

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
<endif><\n>
adaptor.AddChild(root_<treeLevel>, <label>_tree);

```

```

<if(backtracking)></endif>
</endif>
}
)>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {</endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
</else>
<label>_tree = (<ASTLabelType>)adaptor.DupNode(<label>);
</endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)></endif>
</endif>
}
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) </endif>
<if(!rewriteMode)>
adaptor.AddChild(root_<treeLevel>, <label>.Tree);
</else> <! rewrite mode !>
if (_first_<treeLevel>==null) _first_<treeLevel> = (<ASTLabelType>) <label>.Tree;
</endif>
>>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<

```



```

<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (state.backtracking == 0) <endif>root_<treeLevel> =
 (<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_<treeLevel>);
 <endif>
>>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRefRuleRoot(...)>
 <listLabel(elem=label+".Tree",...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefRuleRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<

```

```

<if(hetero)>
new <hetero>(stream_<token>.NextNode())
<else>
stream_<token>.NextNode()
<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<if(!rewriteMode)>
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
<endif>
retval.Tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
<if(backtracking)>
}
<endif>
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp/ASTTreeParser.stg

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp2/ASTTreeParser.stg

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/Tool.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/GrammarSpelunker.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/misc/Graph.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/BuildDependencyGenerator.java

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\*/

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/CompositeGrammarTree.java  
\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/CompositeGrammar.java

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\*/

/\*\* Templates for building ASTs during normal parsing.

\*

- \* Deal with many combinations. Dimensions are:
- \* Auto build or rewrite
- \* no label, label, list label (label/no-label handled together)
- \* child, root
- \* token, set, rule, wildcard
- \*
- \* The situation is not too bad as rewrite (->) usage makes ^ and !
- \* invalid. There is no huge explosion of combinations.

\*/

group ASTParser;

finishedBacktracking(block) ::= <<

<if(backtracking)>

if <actions.(actionScope).synpredgate>:

<block>

<else>

```

<block>
<endif>
>>

@ruleBody.setErrorReturnValue() ::= <<
retval.tree = self._adaptor.errorNode(self.input, retval.start, self.input.LT(-1), re)
>>

// TOKEN AST STUFF

/** ID and output=AST */
tokenRef(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<finishedBacktracking({
<label>_tree = <createNodeFromToken(...)>
self._adaptor.addChild(root_0, <label>_tree)
})>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<finishedBacktracking({
<label>_tree = <createNodeFromToken(...)>
root_0 = self._adaptor.becomeRoot(<label>_tree, root_0)
})>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```

```

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={<finishedBacktracking({self._adaptor.addChild(root_0,
<createNodeFromToken(...)>})>})>>>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<if(label)>
<label> = self.input.LT(1)<\n>
<endif>
<super.matchSet(..., postmatchCode={<finishedBacktracking({root_0 =
self._adaptor.becomeRoot(<createNodeFromToken(...)>, root_0)})>})>>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<finishedBacktracking({self._adaptor.addChild(root_0, <label>.tree)})>
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */

```

```

ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<finishedBacktracking({root_0 = self._adaptor.becomeRoot(<label>.tree, root_0)})>
>>

```

```

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".tree",...)>
>>

```

```

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(elem=label+".tree",...)>
>>

```

```

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".tree",...)>
>>

```

// WILDCARD AST

```

wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<finishedBacktracking({
<label>_tree = self._adaptor.createWithPayload(<label>)
self._adaptor.addChild(root_0, <label>_tree)
})>
>>

```

```

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

```

```

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<finishedBacktracking({
<label>_tree = self._adaptor.createWithPayload(<label>)
root_0 = self._adaptor.becomeRoot(<label>_tree, root_0)
})>
>>

```

```

createNodeFromToken(label,hetero) ::= <<
<if(hetero)>
<hetero>(<label>) <! new MethodNode(IDLabel) !>
<else>
self._adaptor.createWithPayload(<label>)

```

```

<endif>
>>

ruleCleanUp() ::= <<
<super.ruleCleanUp()>
<finishedBacktracking({
retval.tree = self._adaptor.rulePostProcessing(root_0)
self._adaptor.setTokenBoundaries(retval.tree, retval.start, retval.stop)
})>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Python/ASTParser.stg

```

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```

*/

```

```

/** Templates for building ASTs during tree parsing.

```

```

*

```

```

* Deal with many combinations. Dimensions are:

```



```

* Auto build or rewrite
* no label, label, list label (label/no-label handled together)
* child, root
* token, set, rule, wildcard
*
* Each combination has its own template except that label/no label
* is combined into tokenRef, ruleRef, ...
*/
group ASTTreeParser;

/** Add a variable to track last element matched */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> _first_0 = null;
<ASTLabelType> _last = null;<\n>
>>

/** What to emit when there is no rewrite rule. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= <<
<if(backtracking)>if (state.backtracking==0) {<endif>
<if(rewriteMode)>
retval.tree = (<ASTLabelType>)_first_0;
if (adaptor.getParent(retval.tree)!=null && adaptor.isNil(adaptor.getParent(retval.tree)))
 retval.tree = (<ASTLabelType>)adaptor.getParent(retval.tree);
<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
* add tree construction actions.
*/
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)input.LT(1);
{
<ASTLabelType> _save_last_<treeLevel> = _last;
<ASTLabelType> _first_<treeLevel> = null;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.nil();
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (state.backtracking==0)<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>

```

```

if (_first_<enclosingTreeLevel>==null) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==Token.DOWN) {
 match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
<if(!rewriteMode)>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>
>>

// TOKEN AST STUFF

/** ID! and output=AST (same as plain tokenRef) 'cept add
 * setting of _last
 */
tokenRefBang(token,label,elementIndex) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
>>

/** ID auto construct */
tokenRef(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<else> <! rewrite mode !>
<if(backtracking)>if (state.backtracking==0)<endif>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>;

```

```

<endif>
>>

/** label+=TOKEN auto construct */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) auto construct */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.tokenRef(...)>
<if(!rewriteMode)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
adaptor.addChild(root_<treeLevel>, <label>_tree);
<if(backtracking)>}<endif>
<endif>
}
)>

```

>>

```
matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>
```

```
matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.matchSet(...)>
>>
```

```
matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<if(hetero)>
<label>_tree = new <hetero>(<label>);
<else>
<label>_tree = (<ASTLabelType>)adaptor.dupNode(<label>);
<endif><\n>
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<label>_tree, root_<treeLevel>);
<if(backtracking)>}<endif>
<endif>
}
)>
>>
```

// RULE REF AST

```
/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
_last = (<ASTLabelType>)input.LT(1);
<super.ruleRef(...)>
<if(backtracking)>if (state.backtracking==0) <endif>
<if(!rewriteMode)>
adaptor.addChild(root_<treeLevel>, <label>.getTree());
<else> <! rewrite mode !>
if (_first_<treeLevel>==null) _first_<treeLevel> = <label>.tree;
<endif>
>>
```

```
/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".getTree()",...)>
>>
```

```

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)input.LT(1);
 <super.ruleRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (state.backtracking==0) <endif>root_<treeLevel> =
 (<ASTLabelType>)adaptor.becomeRoot(<label>.getTree(), root_<treeLevel>);
 <endif>
>>

```

```

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRefRuleRoot(...)>
 <listLabel(elem=label+".getTree()",...)>
>>

```

```

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<
 <if(hetero)>
 new <hetero>(stream_<token>.nextNode())
 <else>
 stream_<token>.nextNode()
 <endif>
>>

```

```

ruleCleanUp() ::= <<
 <super.ruleCleanUp()>
 <if(!rewriteMode)>
 <if(backtracking)>if (state.backtracking==0) {<\n><endif>
 retval.tree = (<ASTLabelType>)adaptor.rulePostProcessing(root_0);
 <if(backtracking)>}<endif>
 <endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Perl5/ASTTreeParser.stg

```

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\*/

/\*\* Templates for building ASTs during tree parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* Each combination has its own template except that label/no label

\* is combined into tokenRef, ruleRef, ...

\*/

group ASTTreeParser;

/\*\* Add a variable to track last element matched \*/

ruleDeclarations() ::= <<

<super.ruleDeclarations(>

<ASTLabelType> \_last;<\n>

<ASTLabelType> \_first\_0;<\n>

>>

/\*\* Add a variable to track last element matched \*/

ruleInitializations() ::= <<

<super.ruleInitializations(>

\_last = NULL;<\n>

\_first\_0 = NULL;<\n>

>>

/\*\* What to emit when there is no rewrite rule. For auto build

\* mode, does nothing.

\*/

noRewrite(rewriteBlockLevel, treeLevel) ::= <<

<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>

<if(rewriteMode)>

retval.tree = (<ASTLabelType>)\_first\_0;

if ( ADAPTOR->getParent(ADAPTOR, retval.tree) != NULL && ADAPTOR->isNilNode(ADAPTOR, ADAPTOR->getParent(ADAPTOR, retval.tree) ) )

{

retval.tree = (<ASTLabelType>)ADAPTOR->getParent(ADAPTOR, retval.tree);

}

```

<endif>
<if(backtracking)>}<endif>
>>

/** match ^(root children) in tree parser; override here to
 * add tree construction actions.
 */
tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
_last = (<ASTLabelType>)LT(1);
{
<ASTLabelType> _save_last_<treeLevel>;
<ASTLabelType> _first_last_<treeLevel>;
<if(!rewriteMode)>
<ASTLabelType> root_<treeLevel>;
<endif>
_save_last_<treeLevel> = _last;
_first_last_<treeLevel> = NULL;
<if(!rewriteMode)>
root_<treeLevel> = (<ASTLabelType>)(ADAPTOR->nilNode(ADAPTOR));
<endif>
<root:element()>
<if(rewriteMode)>
<if(backtracking)>if (BACKTRACKING ==0) {<endif>
<if(root.el.rule)>
if (_first_<enclosingTreeLevel> == NULL) _first_<enclosingTreeLevel> = <root.el.label>.tree;
<else>
if (_first_<enclosingTreeLevel> == NULL) _first_<enclosingTreeLevel> = <root.el.label>;
<endif>
<if(backtracking)>}<endif>
<endif>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (LA(1)==ANTLR3_TOKEN_DOWN) {
 MATCHT(ANTLR3_TOKEN_DOWN, NULL);
 <children:element()>
 MATCHT(ANTLR3_TOKEN_UP, NULL);
}
<else>
MATCHT(ANTLR3_TOKEN_DOWN, NULL);
<children:element()>
MATCHT(ANTLR3_TOKEN_UP, NULL);
<endif>
<if(!rewriteMode)>
ADAPTOR->addChild(ADAPTOR, root_<enclosingTreeLevel>, root_<treeLevel>);
<endif>
_last = _save_last_<treeLevel>;
}<\n>

```



>>

// TOKEN AST STUFF

/\*\* ID! and output=AST (same as plain tokenRef) 'cept add

\* setting of \_last

\*/

tokenRefBang(token,label,elementIndex) ::= <<

\_last = (<ASTLabelType>)LT(1);

<super.tokenRef(...)>

>>

/\*\* ID auto construct \*/

tokenRef(token,label,elementIndex,hetero) ::= <<

\_last = (<ASTLabelType>)LT(1);

<super.tokenRef(...)>

<if(!rewriteMode)>

<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>

<if(hetero)>

<label>\_tree = <hetero>New(<label>);

<else>

<label>\_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);

<endif>

ADAPTOR->addChild(ADAPTOR, root\_<treeLevel>, <label>\_tree);

<if(backtracking)>}<endif>

<else>

<if(backtracking)>if ( BACKTRACKING ==0 ) {<endif>

if ( \_first\_<treeLevel> == NULL ) \_first\_<treeLevel> = <label>;

<if(backtracking)>}<endif>

<endif>

>>

/\*\* label+=TOKEN auto construct \*/

tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<

<tokenRef(...)>

<listLabel(elem=label,...)>

>>

/\*\* ^(ID ...) auto construct \*/

tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<

\_last = (<ASTLabelType>)LT(1);

<super.tokenRef(...)>

<if(!rewriteMode)>

<if(backtracking)>if ( BACKTRACKING == 0 ) {<endif>

<if(hetero)>

<label>\_tree = <hetero>New(<label>);

<else>

<label>\_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);

```

<endif><\n>
root_<treeLevel> = (<ASTLabelType>)ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_<treeLevel>);
<if(backtracking)></endif>
<endif>
>>

/** Match ^(label+=TOKEN ...) auto construct */
tokenRefRuleRootAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

// SET AST

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)LT(1);
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (BACKTRACKING == 0) {<endif>
<if(hetero)>
<label>_tree = <hetero>New(<label>);
<else>
<label>_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);
<endif><\n>
ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <label>_tree);
<if(backtracking)></endif>
<endif>
}
)>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
<noRewrite()> <! set return tree !>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= <<
_last = (<ASTLabelType>)LT(1);
<super.matchSet(...)>
>>

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<super.matchSet(..., postmatchCode={
<if(!rewriteMode)>
<if(backtracking)>if (BACKTRACKING == 0) {<endif>
<if(hetero)>
<label>_tree = <hetero>New(<label>);
<else>

```

```

<label>_tree = (<ASTLabelType>)ADAPTOR->dupNode(ADAPTOR, <label>);
<endif>
root_<treeLevel> = (<ASTLabelType>)ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_<treeLevel>);
<if(backtracking)><endif>
<endif>
}
)>
>>

// RULE REF AST

/** rule auto construct */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.ruleRef(...)>
 <if(backtracking)>if (BACKTRACKING == 0)
 {
 <endif>
 <if(!rewriteMode)>
 ADAPTOR->addChild(ADAPTOR, root_<treeLevel>, <label>.tree);
 <else>
 if (_first_<treeLevel> == NULL) _first_<treeLevel> = <label>.tree;
 <endif>
 <if(backtracking)><endif>
 >>

/** x+=rule auto construct */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRef(...)>
 <super.listLabelAST(elem=label,...)>
 >>

/** ^(rule ...) auto construct */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.ruleRef(...)>
 <if(!rewriteMode)>
 <if(backtracking)>if (BACKTRACKING == 0) <endif>root_<treeLevel> = (<ASTLabelType>)(ADAPTOR-
 >becomeRoot(ADAPTOR, <label>.tree, root_<treeLevel>));
 <endif>
 >>

/** ^(x+=rule ...) auto construct */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 <ruleRefRuleRoot(...)>
 <super.listLabelAST(elem=label,...)>
 >>

```

```

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.ruleRefTrack(...)>
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.ruleRefTrackAndListLabel(...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.ruleRefRuleRootTrack(...)>
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
 _last = (<ASTLabelType>)LT(1);
 <super.ruleRefRuleRootTrackAndListLabel(...)>
>>

/** Streams for token refs are tree nodes now; override to
 * change nextToken to nextNode.
 */
createRewriteNodeFromElement(token,hetero,scope) ::= <<
 <if(hetero)>
 <hetero>New(stream_<token>->nextNode(stream_<token>))
 <else>
 stream_<token>->nextNode(stream_<token>)
 <endif>
>>

ruleCleanUp() ::= <<
 <super.ruleCleanUp(...)>
 <if(backtracking)>
 if (<actions.(actionScope).synpredgate>) {<n>
 <endif>
 <if(!ruleDescriptor.isSynPred)>
 retval.stop = LT(-1);<n>
 <endif>
 retval.tree = (<ASTLabelType>)ADAPTOR->rulePostProcessing(ADAPTOR, root_0);
 <if(backtracking)>
 }
 <endif>
 <ruleDescriptor.allTokenRefsInAltsWithRewrites

```

```
: {if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
>>
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/C/ASTTreeParser.stg
```

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```
/*
```

```
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```

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```

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Copyright (c) 2005 Terence Parr
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THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

```
*/
```

```
/** Template overrides to add debugging to AST stuff. Dynamic inheritance
```

```
* hierarchy is set up as ASTDbg : AST : Dbg : C# by code generator.
```

```
*/
```

```
group ASTDbg;
```

```
parserMembers() ::= <<
```

```
protected DebugTreeAdaptor adaptor;
```

```
public ITreeAdaptor TreeAdaptor
```

```

{
 get {
<if(grammar.isRoot)>
 return this.adaptor;
<else>
 this.adaptor = (DebugTreeAdaptor)adaptor; // delegator sends dbg adaptor
<endif><\n>
 <grammar.directDelegates: { g | <g.delegateName()>.TreeAdaptor = this.adaptor; }>
 }
 set { this.adaptor = new DebugTreeAdaptor(dbg, value); }
}<\n>
>>

```

```

parserCtorBody() ::= <<
<super.parserCtorBody()>
>>

```

```

createListenerAndHandshake() ::= <<
DebugEventSocketProxy dbg = new DebugEventSocketProxy(this, port, adaptor);
DebugListener = dbg;
<!
Original line follows, replaced by the next two ifs:
set<inputStreamType>(new Debug<inputStreamType>(input,dbg));
!>
<if(PARSER)>
TokenStream = new DebugTokenStream(input,dbg);<\n>
<endif>
<if(TREE_PARSER)>
TokenStream = new DebugTreeNodeStream(input,dbg);<\n>
<endif>
try {
 dbg.Handshake();
} catch (IOException ioe) {
 ReportError(ioe);
}
>>

```

```

@ctorForRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
dbg.TreeAdaptor = adap;
>>

```

```

@ctorForProfilingRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
dbg.TreeAdaptor = adap;
>>

```

```
@ctorForPredefinedListener.superClassRef() ::= "base(input, dbg)"
```

```
@ctorForPredefinedListener.finally() ::=<<
<if(grammar.grammarIsRoot)> <! don't create new adaptor for delegates !>
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;<\n>
<endif>
>>
```

```
@rewriteElement.pregen() ::= "dbg.Location(<e.line>,<e.pos>);"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp2/ASTDbg.stg
```

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```

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```
*/
```

```
group Perl5 implements ANTLRCore;
```

```

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals) ::=
<<
$ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
<actions.(actionScope).header>

<@imports>
<if(TREE_PARSER)>
<endif>
<if(backtracking)>
<endif>
<@end>

<docComment>
<recognizer>
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
 filterMode, superClass="ANTLR::Runtime::Lexer") ::= <<
package <name>;
use ANTLR::Runtime::Class;

use Carp;
use English qw(-no_match_vars);
use Readonly;
use Switch;

use ANTLR::Runtime::BaseRecognizer;
use ANTLR::Runtime::DFA;
use ANTLR::Runtime::NoViableAltException;

extends 'ANTLR::Runtime::Lexer';

use constant {
 HIDDEN => ANTLR::Runtime::BaseRecognizer->HIDDEN
};

use constant {
 <tokens:{ <it.name> => <it.type>, }; separator="\n">
};

```



```

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<actions.lexer.members>

sub BUILD {
 my ($self, $arg_ref) = @_ ;

 $self->init_dfas();
}

sub get_grammar_file_name {
 return "<fileName>";
}

<if(filterMode)>
<filteringNextToken()>
<endif>
<rules; separator="\n\n">

<synpreds:{p | <lexerSynpred(p)>}>

<cyclicDFAs:{dfa | has 'dfa<dfa.decisionNumber>';}; separator="\n">

sub init_dfas {
 my ($self) = @_ ;

 <cyclicDFAs:{dfa |
 $self->dfa<dfa.decisionNumber>(<name::DFA<dfa.decisionNumber>->new({ recognizer => $self }));
 }; separator="\n">

 return;
}

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

1;

>>

perlTypeInitMap ::= [
 "$":"undef",
 "@":"()",
 "%":"()",
 default:"undef"
]

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.

```

```

* Make rule memoization happen only at levels above 1 as we start mTokens
* at backtracking==1.
*/
filteringNextToken() ::= <<
public Token nextToken() {
 while (true) {
 if (input.LA(1)==CharStream.EOF) {
 return Token.EOF_TOKEN;
 }
 token = null;
channel = Token.DEFAULT_CHANNEL;
 tokenStartCharIndex = input.index();
 tokenStartCharPositionInLine = input.getCharPositionInLine();
 tokenStartLine = input.getLine();
text = null;
 try {
 int m = input.mark();
 backtracking=1; <!-- means we won't throw slow exception !>
 failed=false;
 mTokens();
 backtracking=0;
 <!-- mTokens backtracks with synpred at backtracking==2
 and we set the synpredgate to allow actions at level 1. !>
 if (failed) {
 input.rewind(m);
 input.consume(); <!-- advance one char and try again !>
 }
 else {
 emit();
 return token;
 }
 }
 catch (RecognitionException re) {
 // shouldn't happen in backtracking mode, but...
 reportError(re);
 recover(re);
 }
 }
}

public void memoize(IntStream input,
 int ruleIndex,
 int ruleStartIndex)
{
 if (backtracking>1) super.memoize(input, ruleIndex, ruleStartIndex);
}

public boolean alreadyParsedRule(IntStream input, int ruleIndex) {

```

```

if (backtracking>1) return super.alreadyParsedRule(input, ruleIndex);
return false;
}
>>

actionGate() ::= "$self->state->backtracking==0"

filteringActionGate() ::= "backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass, filterMode,
 ASTLabelType="Object", labelType, members) ::= <<
package <name>;
use ANTLR::Runtime::Class;

use English qw(-no_match_vars);
use Readonly;
use Switch;
use Carp;
use ANTLR::Runtime::BitSet;

extends '<@superClassName><superClass><@end>';

Readonly my $token_names => [
 "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
];

use constant {
<tokens:{ <it.name> => <it.type>, }; separator="\n">
};

<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
 words64=it.bits)>

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>

sub BUILD {
 my ($self, $arg_ref) = @_;

<if(backtracking)>
 $self->state->rule_memo({});<\n>
<endif>
}
<@end>

```

```

sub get_token_names {
 return $token_names;
}

sub get_grammar_file_name {
 return "<fileName>";
}

<members>

<rules; separator="\n\n">

<synpreds:{p | <synpred(p)>>}>

<cyclicDFAs:{dfa | dfa<dfa.decisionNumber> = __PACKAGE__::DFA<dfa.decisionNumber>->new($self);};
separator="\n">
<cyclicDFAs:cyclicDFA(> <! dump tables for all DFA !>

1;
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType,
superClass="ANTLR::Runtime::Parser", labelType="ANTLR::Runtime::Token",
members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ANTLR::Runtime::TokenStream", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="Object", superClass="ANTLR::Runtime::TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="TreeNodeStream", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
$ANTLR start <ruleName>

```

```

sub <ruleName>_fragment {
<ruleDescriptor.parameterScope:parameterScope(scope=it)>

<if(trace)>
 $self->traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
 eval {
 <block>
 };
 $self->traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
 if ($EVAL_ERROR) {
 croak $EVAL_ERROR;
 }
<else>
 <block>
<endif>
}
$ANTLR end <ruleName>
>>

synpred(name) ::= <<
public final boolean <name>() {
 backtracking++;
 <@start()>
 int start = input.mark();
 try {
 <name>_fragment(); // can never throw exception
 } catch (RecognitionException re) {
 System.err.println("impossible: "+re);
 }
 boolean success = !failed;
 input.rewind(start);
 <@stop()>
 backtracking--;
 failed=false;
 return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if (backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index>)) { return <ruleReturnValue()>; }
<endif>
>>

```

```

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>
if ($self->state->failed) {
 return <ruleReturnValue(>);
}
<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (backtracking>0) {failed=true; return <ruleReturnValue(>);}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

$ANTLR start <ruleName>
<fileName>:<description>
sub <ruleName>() {
 my ($self, <ruleDescriptor.parameterScope:parameterScope(scope=it)>) = @_ ;
 <if(trace)>$self->traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp(>
 <ruleDeclarations(>
 <ruleLabelDefs(>
 <ruleDescriptor.actions.init>
 <@preamble(>
 eval {
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp(>
 <(ruleDescriptor.actions.after):execAction(>
 };
 <if(exceptions)>
 <exceptions:{e|<catch(decl=e.decl,action=e.action)><n>}>
 <else>
 <if(!emptyRule)>
 <if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
 <else>
 my $exception = $EVAL_ERROR;
 if (ref $exception && $exception->isa('ANTLR::Runtime::RecognitionException')) {
 $self->report_error($exception);
 $self->recover($self->input, $exception);
 }
 }
}

```

```

 $exception = undef;
 }<\n>
<endif>
<endif>
<endif>
 <if(trace)>$self->traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
 if ($exception) {
 croak $exception;
 # $exception->rethrow();
 }
 <@postamble()>
 return <ruleReturnValue()>;
}
$ANTLR end <ruleName>
>>

catch(decl,action) ::= <<
catch (<e.decl>) {
 <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
my $retval = <returnType()>->new();
$retval->set_start($self->input->LT(1));<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
my $<a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
my $<ruleDescriptor.name>_start_index = $self->input->index();
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: { <it>_stack.push(new <it>_scope()); }; separator="\n">
<ruleDescriptor.ruleScope: { <it.name>_stack.push(new <it.name>_scope()); }; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: { <it>_stack.pop(); }; separator="\n">
<ruleDescriptor.ruleScope: { <it.name>_stack.pop(); }; separator="\n">
>>

```

```

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
 :{my $<it.label.text> = undef;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
 :{List list_<it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels:{ll|RuleReturnScope <ll.label.text> = null;}; separator="\n">
>>

```

```

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
 ruleDescriptor.tokenListLabels,
 ruleDescriptor.ruleLabels]
 :{<labelType> <it.label.text>=null;}; separator="\n"
>
<ruleDescriptor.charLabels:{my $<it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
 ruleDescriptor.ruleListLabels,
 ruleDescriptor.ruleListLabels]
 :{List list_<it.label.text>=null;}; separator="\n"
>
>>

```

```

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
$<ruleDescriptor.singleValueReturnName>
<else>
$retval
<endif>
<endif>
<endif>
>>

```

```

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
$retval->set_stop($self->input->LT(-1));<\n>
<endif>
<endif>
>>

```

```

memoize() ::= <<
<if(memoize)>

```



```

<if(backtracking)>
if (backtracking>0) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_startIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
$ANTLR start <ruleName>
sub m_<ruleName> {
<ruleDescriptor.parameterScope:parameterScope(scope=it)>
my ($self) = @_ ;
<if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleDeclarations()>
eval {
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block><\n>
<else>
my $_type = <ruleName>;
my $_channel = $self->DEFAULT_TOKEN_CHANNEL;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<ruleCleanUp()>
$self->state->type($_type);
$self->state->channel($_channel);
<(ruleDescriptor.actions.after):execAction()>
<endif>
};
<if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
<memoize()>

if ($EVAL_ERROR) {
croak $EVAL_ERROR;
}
}
$ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */

```

```

tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
sub m_tokens {
 my ($self) = @_;
 <block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
<fileName>:<description>
my $alt<decisionNumber> = <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch ($alt<decisionNumber>) {
 <alts:altSwitchCase()>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
<fileName>:<description>
my $alt<decisionNumber> = <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch ($alt<decisionNumber>) {
 <alts:altSwitchCase()>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
<fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
<fileName>:<description>

```

```

<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
<fileName>:<description>
my $cnt<decisionNumber> = 0;
<decls>
<@preloop()>
LOOP<decisionNumber>:
while (1) {
 my $alt<decisionNumber> = <maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch ($alt<decisionNumber>) {
 <alts:altSwitchCase()>
 }
 else {
 if ($cnt<decisionNumber> >= 1) { last LOOP<decisionNumber> }
 <ruleBacktrackFailure()>
 my $see =
 ANTLR::Runtime::EarlyExitException->new(<decisionNumber>, $self->input);
 <@earlyExitException()>
 croak $see;
 }
}
++$cnt<decisionNumber>;
}
<@postloop()>
>>

```

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
<fileName>:<description>
<decls>
<@preloop()>
LOOP<decisionNumber>:
while (1) {
 my $alt<decisionNumber> = <maxAlt>;
 <@predecision()>
 <decision>

```

```

<@postdecision()>
switch ($alt<decisionNumber>) {
 <alts:altSwitchCase()>
 else { last LOOP<decisionNumber> }
}
}
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
case <i> {
 <@prealt()>
 <it>
}<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
<fileName>:<description>
{
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */

```

```

element() ::= <<
<@prematch(>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)>$<label> =<endif>$self->match($self->input, <token>,
$FOLLOW_<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...>
<listLabel(elem=label,...>
>>

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new ArrayList();
list_<label>.add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = $self->input->LA(1);<\n>
<endif>
$self->match(<char>); <checkRuleBacktrackFailure(>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = $self->input->LA(1);<\n>
<endif>
$self->match_range(<a>,); <checkRuleBacktrackFailure(>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= $self->input->LA(1);<\n>
<else>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
<endif>
>>

```

```

if (<s>) {
 $self->input->consume();
 <postmatchCode>
<if(!LEXER)>
 $self->state->error_recovery(0);
<endif>
 <if(backtracking)>failed=false;<endif>
}
else {
 <ruleBacktrackFailure()>
 my $mse =
 ANTLR::Runtime::MismatchedSetException->new(undef, $self->input);
 <@mismatchedSetException()>
<if(LEXER)>
 $self->recover($mse);
 $mse->throw();
<else>
 $mse->throw();
 <! use following code to make it recover inline; remove throw mse;
 $self->recoverFromMismatchedSet($self->input, $mse, $FOLLOW_set_in_<ruleName><elementIndex>);
 !>
<endif>
}<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a string literal */

```

```

lexerStringRef(string,label) ::= <<
<if(label)>
int <label>Start = getCharIndex();
$self->match(<string>); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE,
Token.DEFAULT_CHANNEL, <label>Start, getCharIndex()-1);
<else>
$self->match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>

```

```

matchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = $self->input->LA(1);<\n>
<endif>
matchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
$self->push_follow($FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)>
$self-><label> = $self-><rule.name>(<args; separator=" ">);<\n>
<else>
$self-><rule.name>(<args; separator=" ">);<\n>
<endif>
$self->state->_fsp($self->state->_fsp - 1);
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<

```

```

<if(label)>
int <label>Start<elementIndex> = getCharIndex();
$self->m_<rule><args; separator=", ">; <checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1);
<else>
$self->m_<rule.name><args; separator=", ">; <checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = getCharIndex();
match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, EOF, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, getCharIndex()-1);
<else>
match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==Token.DOWN) {
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).

```



```

*/
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)) {
 <ruleBacktrackFailure()>
 throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
my $LA<decisionNumber>_<stateNumber> = $self->input->LA(<k>);<\n>
<edges; separator="\nls">
else {
<if(eotPredictsAlt)>
 $alt<decisionNumber> = <eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 my $nvae =
 ANTLR::Runtime::NoViableAltException->new({
 grammar_decision_description => "<description>",
 decision_number => <decisionNumber>,
 state_number => <stateNumber>,
 input => $self->input,
 });<\n>
 <@noViableAltException()>
 croak $nvae;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
my $LA<decisionNumber>_<stateNumber> = $self->input->LA(<k>);<\n>
<edges; separator="\nls">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<

```

```

my $LA<decisionNumber>_<stateNumber> = $self->input->LA(<k>);<\n>
<edges; separator="\nls"><\n>
<if(eotPredictsAlt)>
<if(!edges)>
$alt<decisionNumber> = <eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
 $alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "$alt<decisionNumber> = <alt>";

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) {
 <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ($self->input->LA(<k>)) {
 <edges; separator="\n">
 else {
 <if(eotPredictsAlt)>
 $alt<decisionNumber> = <eotPredictsAlt>;
 <else>
 <ruleBacktrackFailure()>
 my $nvae =
 ANTLR::Runtime::NoViableAltException->new({
 grammar_decision_description => "<description>",
 decision_number => <decisionNumber>,
 state_number => <stateNumber>,
 input => $self->input,
 });<\n>
 <@noViableAltException()>
 croak $nvae;<\n>

```

```

 <endif>
 }
}<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ($self->input->LA(<k>)) {
 <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ($self->input->LA(<k>)) {
 <edges; separator="\n"><\n>
 <if(eotPredictsAlt)>
 else { $alt<decisionNumber> = <eotPredictsAlt> }<\n>
 <endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
case [<labels: { <it> }; separator=", ">] { <targetState> }
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
$alt<decisionNumber> = $self->dfa<decisionNumber>->predict($self->input);
>>

/* Dump DFA tables as run-length-encoded Strings of octal values.
 * Can't use hex as compiler translates them before compilation.
 * These strings are split into multiple, concatenated strings.
 * Java puts them back together at compile time thankfully.
 * Java cannot handle large static arrays, so we're stuck with this
 * encode/decode approach. See analysis and runtime DFA for
 * the encoding methods.
 */
cyclicDFA(dfa) ::= <<
Readonly my $DFA<dfa.decisionNumber>_eot => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedEOT; separator=", ">]);
Readonly my $DFA<dfa.decisionNumber>_eof => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedEOF; separator=", ">]);
Readonly my $DFA<dfa.decisionNumber>_min => ANTLR::Runtime::DFA->unpack_rle([

```

```

<dfa.javaCompressedMin; separator=", ">]);
Readonly my $DFA<dfa.decisionNumber>_max => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedMax; separator=", ">]);
Readonly my $DFA<dfa.decisionNumber>_accept => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedAccept; separator=", ">]);
Readonly my $DFA<dfa.decisionNumber>_special => ANTLR::Runtime::DFA->unpack_rle([
<dfa.javaCompressedSpecial; separator=", ">]);
Readonly my $DFA<dfa.decisionNumber>_transition => [
<dfa.javaCompressedTransition:{s|ANTLR::Runtime::DFA->unpack_rle([<s; separator=", ">])}; separator=", ">];

{
package <name>::DFA<dfa.decisionNumber>;
use ANTLR::Runtime::Class;

use strict;
use warnings;

extends 'ANTLR::Runtime::DFA';

sub BUILD {
 my $self = shift;
 my $param_ref = __PACKAGE__->unpack_params(@_, {
 spec => [
 {
 name => 'recognizer',
 isa => 'ANTLR::Runtime::BaseRecognizer'
 },
]
 });

 $self->recognizer($param_ref->{recognizer});
 $self->decision_number(<dfa.decisionNumber>);
 $self->eot($DFA<dfa.decisionNumber>_eot);
 $self->eof($DFA<dfa.decisionNumber>_eof);
 $self->min($DFA<dfa.decisionNumber>_min);
 $self->max($DFA<dfa.decisionNumber>_max);
 $self->accept($DFA<dfa.decisionNumber>_accept);
 $self->special($DFA<dfa.decisionNumber>_special);
 $self->transition($DFA<dfa.decisionNumber>_transition);
}

sub get_description {
 return "<dfa.description>";
}

<@errorMethod()>

<if(dfa.specialStateSTs)>

```

```

sub special_state_transition {
 my ($self, $param_ref) = unpack_params(@_, {
 spec => [
 {
 name => 's',
 type => SCALAR,
 },
 {
 name => 'input',
 isa => 'ANTLR::Runtime::IntStream',
 }
]
 });
 my $s = $param_ref->{s};
 my $input = $param_ref->{input};

 switch ($s) {
 <dfa.specialStateSTs:{state |
 case <i0> \{ <! compressed special state numbers 0..n-1 !>
 <state>}; separator="\n">
 }
 }
 }

 <if(backtracking)>
 if ($self->state->backtracking > 0) {
 $self->state->failed = 1;
 return -1;
 }<\n>
 <endif>

 my $nvae =
 ANTLR::Runtime::NoViableAltException->new({
 grammar_decision_description => $self->get_description(),
 decision_number => <dfa.decisionNumber>,
 state_number => $s,
 input => $input,
 });<\n>
 $self->error($nvae);
 $nvae->throw();
 }<\n>
 <endif>
 }<\n>
 >>

 /** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
 cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<

```

```

my $input = $self->input;
my $LA<decisionNumber>_<stateNumber> = $input->LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
my $index<decisionNumber>_<stateNumber> = $input->index();
$input->rewind();<\n>
<endif>
s = -1;
<edges; separator="\nls">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if (s>=0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) { s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "(<left> && <right>)"

orPredicates(operands) ::= "(<first(operands)><rest(operands):{o | ||<o>}>)"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "$LA<decisionNumber>_<stateNumber> eq <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "$self->input->LA(<k>) eq <atom>"

```

```

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
($LA<decisionNumber>_<stateNumber> ge <lower> && $LA<decisionNumber>_<stateNumber> le <upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "($self->input->LA(<k>) ge
<lower> && $self->input->LA(<k>) le <upper>)"

setTest(ranges) ::= "<ranges; separator=\\\" || \\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
 <scope.attributes:{<it.decl>;}; separator=\\\"\\n">
}
protected Stack <scope.name>_stack = new Stack();<\\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
 <scope.attributes:{<it.decl>;}; separator=\\\"\\n">
}
protected Stack <scope.name>_stack = new Stack();<\\n>
<endif>
>>

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.name>_return
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

/** Generate the Java type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.name>_return

```

```

<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "undef".
 */
initValue(typeName) ::= <<
<if(typeName)>
<perlTypeInitMap.(typeName)>
<else>
undef
<endif>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
my $<label.label.text> = <initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
{
package <returnType()>;
use ANTLR::Runtime::Class;

extends 'ANTLR::Runtime::<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope';

<scope.attributes:{public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>
}
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<$<it.name>}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<$<attr.name>"

```



```

parameterSetAttributeRef(attr,expr) ::= "$<attr.name> =<expr>";

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name>
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name> =<expr>;
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name> =<expr>;
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name> =<expr>;
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
$<scope>.<attr.name>
<else>
$<scope>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
$<attr.name>
<endif>
>>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> =<expr>;
<else>
$<attr.name> =<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "$<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "$<scope>->get_text()"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>.getType()"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>.getLine()"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>.getCharPositionInLine()"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>.getChannel()"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>.getTokenIndex()"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"

ruleLabelPropertyRef_start(scope,attr) ::= "((<labelType>)<scope>.start)"
ruleLabelPropertyRef_stop(scope,attr) ::= "((<labelType>)<scope>.stop)"
ruleLabelPropertyRef_tree(scope,attr) ::= "((<ASTLabelType>)<scope>.tree)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(<scope>.start),
input.getTreeAdaptor().getTokenStopIndex(<scope>.start))
<else>
substr($self->input, $<scope>->start, $<scope>->stop)
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "<scope>.st"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "$<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "<scope>.getType()"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "<scope>.getLine()"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "<scope>.getCharPositionInLine()"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "<scope>.getChannel()"

```

```

lexerRuleLabelPropertyRef_index(scope,attr) ::= "<scope>.getTokenIndex()"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "<scope>.getText()"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "((<labelType>)retval.start)"
rulePropertyRef_stop(scope,attr) ::= "((<labelType>)retval.stop)"
rulePropertyRef_tree(scope,attr) ::= "((<ASTLabelType>)retval.tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.getTokenStream().toString(
input.getTreeAdaptor().getTokenStartIndex(retval.start),
input.getTreeAdaptor().getTokenStopIndex(retval.start))
<else>
input.toString(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "getText()"
lexerRulePropertyRef_type(scope,attr) ::= "$_type"
lexerRulePropertyRef_line(scope,attr) ::= "tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "$_channel"
lexerRulePropertyRef_start(scope,attr) ::= "tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(getCharIndex()-1)"
lexerRulePropertyRef_self(scope,attr) ::= "$self"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>;"

/** How to execute an action */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if (<actions.(actionScope).synpredgate>) {
<action>
}
<else>
if (backtracking==0) {
<action>
}
<endif>
<else>
<action>

```

```

<endif>
>>

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
Readonly my $<name> => ANTLR::Runtime::BitSet->new({ words64 => [<words64:{'<it>'};separator=", ">]
});<n>
>>

codeFileExtension() ::= ".pm"

true() ::= "1"
false() ::= "0"

Found in path(s):
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Perl5/Perl5.stg
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```

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\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/PythonTarget.java  
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\*/

/\*\* Templates for building ASTs during normal parsing.

\*

\* Deal with many combinations. Dimensions are:

\* Auto build or rewrite

\* no label, label, list label (label/no-label handled together)

\* child, root

\* token, set, rule, wildcard

\*

\* The situation is not too bad as rewrite (->) usage makes ^ and !

\* invalid. There is no huge explosion of combinations.

\*/

```

group ASTParser;

@rule.setErrorReturnValue() ::= <<
retval.tree = (<ASTLabelType>)adaptor.ErrorNode(input, retval.start, input.LT(-1), re);
<! System.out.WriteLine("<ruleName> returns "+((CommonTree)retval.tree).toStringTree()); !>
>>

// TOKEN AST STUFF

/** ID and output=AST */
tokenRef(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (state.backtracking==0) {<endif>
<label>_tree = <createNodeFromToken(...)>;
adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)>}<endif>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = <createNodeFromToken(...)>;
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)>}<endif>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>

```

```

// SET AST

// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.

matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={<if(backtracking)>if (<actions.(actionScope).synpredgate>)
<endif>adaptor.AddChild(root_0, <createNodeFromToken(...)>);}>
>>

matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>

matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"

// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)

matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<if(label)>
<label>=(<labelType>)input.LT(1);<\n>
<endif>
<super.matchSet(..., postmatchCode={<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_0
= (<ASTLabelType>)adaptor.BecomeRoot(<createNodeFromToken(...)>, root_0);}>
>>

// RULE REF AST

/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>adaptor.AddChild(root_0, <label>.Tree);
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<

```

```

<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_0 =
(<ASTLabelType>)adaptor.BecomeRoot(<label>.Tree, root_0);
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabel(elem=label+".Tree",...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabel(elem=label+".Tree",...)>
>>

// WILDCARD AST

wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
adaptor.AddChild(root_0, <label>_tree);
<if(backtracking)>}<endif>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)adaptor.Create(<label>);
root_0 = (<ASTLabelType>)adaptor.BecomeRoot(<label>_tree, root_0);
<if(backtracking)>}<endif>
>>

createNodeFromToken(label,hetero) ::= <<
<if(hetero)>
new <hetero>(<label>) <! new MethodNode(IDLabel) !>
<else>
(<ASTLabelType>)adaptor.Create(<label>)

```



```

<endif>
>>

ruleCleanup() ::= <<
<super.ruleCleanup()>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<\n><endif>
retval.tree = (<ASTLabelType>)adaptor.RulePostProcessing(root_0);
adaptor.SetTokenBoundaries(retval.tree, retval.start, retval.stop);
<if(backtracking)>}<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp3/ASTParser.stg

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```

```

*/

```

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```

```

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\*/

group ActionScript implements ANTLRCore;

asTypeInitMap ::= [

"int": "0",

"uint": "0",

"Number": "0.0",

"Boolean": "false",

default: "null" // anything other than an atomic type

]

/\*\* The overall file structure of a recognizer; stores methods for rules

\* and cyclic DFAs plus support code.

\*/

outputFile(LEXER,PARSER,TREE\_PARSER, actionScope, actions,

docComment, recognizer,

name, tokens, tokenNames, rules, cyclicDFAs,

bitsets, buildTemplate, buildAST, rewriteMode, profile,

backtracking, synpreds, memoize, numRules,

fileName, ANTLRVersion, generatedTimestamp, trace,

```

scopes, superClass, literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>
package<if(actions.(actionScope).package)> <actions.(actionScope).package><endif> {
 <actions.(actionScope).header>
 <@imports>
import org.antlr.runtime.*;
<if(TREE_PARSER)>
 import org.antlr.runtime.tree.*;
<endif>
 <@end>

 <docComment>
 <recognizer>
}
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
 filterMode, superClass="Lexer") ::= <<
public class <grammar.recognizerName> extends
<if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else><@superClassName><superClass>
<@end><endif> {
 <tokens:{public static const <it.name>:int=<it.type>;}; separator="\n">
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
 <actions.lexer.members>

 // delegates
 <grammar.delegates:
 {g|public var <g.delegateName()>:<g.recognizerName>;}; separator="\n">
 // delegators
 <grammar.delegators:
 {g|public var <g.delegateName()>:<g.recognizerName>;}; separator="\n">
 <last(grammar.delegators):{g|public var gParent:<g.recognizerName>;}>

 public function <grammar.recognizerName>(<grammar.delegators:{g<g.delegateName()>:<g.recognizerName>,
}>input:CharStream = null, state:RecognizerSharedState = null) {
 super(input, state);
 <cyclicDFAs:cyclicDFACTor()>
 <if(memoize)>
 <if(grammar.grammarIsRoot)>
 this.state.ruleMemo = new Array(<numRules>+1);<\n> <! index from 1..n !>
 <endif>
 <endif>
 <grammar.directDelegates:
 {g<g.delegateName()> = new <g.recognizerName>(<trunc(g.delegators):{p<p.delegateName()>, }>this,
input, this.state);}; separator="\n">
 <grammar.delegators:
 {g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">

```

```

 <last(grammar.delegators):{g|gParent = <g:delegateName(>};}>
 }
 public override function get grammarFileName():String { return "<fileName>"; }

<if(filterMode)>
 <filteringNextToken(>
<endif>
 <rules; separator="\n\n">

 <synpreds:{p | <lexerSynpred(p)>}>

 <cyclicDFAs:cyclicDFA(> <! dump tables for all DFA !>

}
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
public override function nextToken():Token {
 while (true) {
 if (input.LA(1)==CharStreamConstants.EOF) {
 return TokenConstants.EOF_TOKEN;
 }
 this.state.token = null;
 this.state.channel = TokenConstants.DEFAULT_CHANNEL;
 this.state.tokenStartCharIndex = input.index;
 this.state.tokenStartCharPositionInLine = input.charPositionInLine;
 this.state.tokenStartLine = input.line;
 this.state.text = null;
 try {
 var m:int = input.mark();
 this.state.backtracking=1; <! means we won't throw slow exception !>
 this.state.failed=false;
 mTokens();
 this.state.backtracking=0;
 <! mTokens backtracks with synpred at backtracking==2
 and we set the synpredgate to allow actions at level 1. !>
 if (this.state.failed) {
 input.rewindTo(m);
 input.consume(); <! advance one char and try again !>
 }
 }
 else {
 emit();
 }
 }
}

```

```

 return this.state.token;
 }
}
catch (re:RecognitionException) {
 // shouldn't happen in backtracking mode, but...
 reportError(re);
 recover(re);
}
}
// Not reached - For ActionScript compiler
throw new Error();
}

public override function memoize(input:IntStream,
 ruleIndex:int,
 ruleStartIndex:int):void
{
 if (this.state.backtracking>1) super.memoize(input, ruleIndex, ruleStartIndex);
}

public override function alreadyParsedRule(input:IntStream, ruleIndex:int):Boolean {
 if (this.state.backtracking>1) return super.alreadyParsedRule(input, ruleIndex);
 return false;
}
>>

actionGate() ::= "this.state.backtracking==0"

filteringActionGate() ::= "this.state.backtracking==1"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass, filterMode,
 ASTLabelType="Object", labelType, members, rewriteElementType) ::= <<
public class <grammar.recognizerName> extends
<if(actions.(actionScope).superClass)><actions.(actionScope).superClass><else><@superClassName><superClass>
><@end><endif> {
<if(grammar.grammarIsRoot)>
 public static const tokenNames:Array = [
 "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
];<\n>
<endif>
 <tokens:{public static const <it.name>:int=<it.type>;}; separator="\n">

 // delegates
 <grammar.delegates:
 {g|public var <g.delegateName()>:<g.recognizerName>;}; separator="\n">
 // delegators

```

```

<grammar.delegators:
 { g|public var <g.delegateName():><g.recognizerName>;}; separator="\n">
<last(grammar.delegators):{ g|public var gParent:<g.recognizerName>;}>

<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<@members>
<! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
public function <grammar.recognizerName>(<grammar.delegators:{ g|<g.delegateName():><g.recognizerName>,
}>input:<inputStreamType>, state:RecognizerSharedState = null) {
 super(input, state);
 <cyclicDFAs:cyclicDFACTOR(>
 <parserCtorBody(>
 <grammar.directDelegates:
 { g|<g.delegateName()> = new <g.recognizerName>(<trunc(g.delegators):{ p|<p.delegateName()>, }>this,
input, this.state);}; separator="\n">
 <grammar.indirectDelegates:{ g | <g.delegateName()> = <g.delegator.delegateName()>.<g.delegateName()>;};
separator="\n">
 <last(grammar.delegators):{ g|gParent = <g.delegateName()>;}>
 }
 <@end>

 public override function get tokenNames():Array { return
<grammar.composite.rootGrammar.recognizerName>.tokenNames; }
 public override function get grammarFileName():String { return "<fileName>"; }

 <members>

 <rules; separator="\n\n">

 <! generate rule/method definitions for imported rules so they
 appear to be defined in this recognizer. !>
 // Delegated rules
 <grammar.delegatedRules:{ ruleDescriptor|
 public function
 <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):<returnType(> \{
 <if(ruleDescriptor.hasReturn Value)>return
 <endif><ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes:
 { a|<a.name>; separator=", ">; \} }); separator="\n">

 <synpreds:{ p | <synpred(p)>>

 <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

 <bitsets:bitset(name={ FOLLOW_<it.name>_in_<it.inName><it.tokenIndex> },
 words64=it.bits)>
 }
 >>

```

```

parserCtorBody() ::= <<
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo = new Array(<length(grammar.allImportedRules)>+1);<\n> <! index from 1..n !>
<endif>
<endif>
<grammar.delegators:
{g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType="Object",
superClass="Parser", labelType="Token", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="TokenStream", rewriteElementType="Token", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="Object", superClass="TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="TreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
public final function <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):void {
 <ruleLabelDefs()>
<if(trace)>
 traceIn("<ruleName>_fragment", <ruleDescriptor.index>);
 try {
 <block>
 }
 finally {
 traceOut("<ruleName>_fragment", <ruleDescriptor.index>);
 }
<else>
 <block>
<endif>
}

```

```

// $ANTLR end <ruleName>
>>

synpred(name) ::= <<
public final function <name>():Boolean {
 this.state.backtracking++;
 <@start()>
 var start:int = input.mark();
 try {
 <name>_fragment(); // can never throw exception
 } catch (re:RecognitionException) {
 trace("impossible: "+re);
 }
 var success:Boolean = !this.state.failed;
 input.rewindTo(start);
 <@stop()>
 this.state.backtracking--;
 this.state.failed=false;
 return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if (this.state.backtracking>0 && alreadyParsedRule(input, <ruleDescriptor.index>)) { return <ruleReturnValue()>;
}
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if (this.state.failed) return <ruleReturnValue()>;<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (this.state.backtracking>0) { this.state.failed=true; return <ruleReturnValue()>;}<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>

```



```

// $ANTLR start <ruleName>
// <fileName>:<description>
public final function <ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>:<returnType()> {
 <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleDescriptor.actions.init>
 <@preamble()>
 try {
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>
 }
 <if(exceptions)>
 <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n}>>
 <else>
 <if(!emptyRule)>
 <if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
 <else>
 catch (re:RecognitionException) {
 reportError(re);
 recoverStream(input,re);
 <@setErrorReturnValue()>
 }<\n>
 <endif>
 <endif>
 <endif>
 finally {
 <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
 }
 <@postamble()>
 return <ruleReturnValue()>;
}
// $ANTLR end <ruleName>
>>

catch(decl,action) ::= <<
catch (<e.decl>) {
 <e.action>
}
>>

```

```

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
var retval:<returnType()> = new <returnType()>();
retval.start = input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes:{ a |
var <a.name>:<a.type> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
var <ruleDescriptor.name>_startIndex:int = input.index;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes:{<it>_stack.push(new Object());}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_stack.push(new Object());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes:{<it>_stack.pop();}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_stack.pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
:{var <it.label.text>:<labelType>=null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
:{var list_<it.label.text>:Array=null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels:{ll|var <ll.label.text>:RuleReturnScope = null;}; separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
:{var <it.label.text>:<labelType>=null;}; separator="\n"
>
<ruleDescriptor.charLabels:{var <it.label.text>:int;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
:{var list_<it.label.text>:Array=null;}; separator="\n"
>
>>

```

```

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
>>

```

```

ruleCleanUp() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.stop = input.LT(-1);<\n>
<endif>
<endif>
>>

```

```

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (this.state.backtracking>0) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex); }
<endif>
<endif>
>>

```

```

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */

```

```

lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start <ruleName>
public final function m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):void {
 <if(trace)>traceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 try {
<if(nakedBlock)>
 <ruleMemoization(name=ruleName)>
 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block><\n>
<else>
 var _type:int = <ruleName>;
 var _channel:int = DEFAULT_TOKEN_CHANNEL;
 <ruleMemoization(name=ruleName)>

```

```

 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block>
 <ruleCleanUp()>
 this.state.type = _type;
 this.state.channel = _channel;
 <(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally {
 <if(trace)>traceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeCleanUp()>
 <memoize()>
}
}
// $ANTLR end <ruleName>
>>

```

```

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */

```

```

tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
public override function mTokens():void {
 <block><\n>
}
>>

```

```

// S U B R U L E S

```

```

/** A (...) subrule with multiple alternatives */

```

```

block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var alt<decisionNumber>:int=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
}
<@postbranch()>
>>

```

```

/** A rule block with multiple alternatives */

```

```

ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var alt<decisionNumber>:int=<maxAlt>;

```

```

<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
var cnt<decisionNumber>:int=0;
<decls>
<@preloop()>
loop<decisionNumber>:
do {
 var alt<decisionNumber>:int=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
 default :
 if (cnt<decisionNumber> >= 1) break loop<decisionNumber>;
 <ruleBacktrackFailure()>
 throw new EarlyExitException(<decisionNumber>, input);
 <! Need to add support for earlyExitException debug hook !>
 }
 cnt<decisionNumber>++;
}

```

```

} while (true);
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// <fileName>:<description>
<decls>
<@preloop()>
loop<decisionNumber>:
do {
 var alt<decisionNumber>:int=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
 default :
 break loop<decisionNumber>;
 }
} while (true);
<@postloop()>
>>

```

closureBlockSingleAlt ::= closureBlock

```

/** Optional blocks (x)? are translated to (x|) by before code generation
* so we can just use the normal block template
*/

```

optionalBlock ::= block

optionalBlockSingleAlt ::= block

```

/** A case in a switch that jumps to an alternative given the alternative
* number. A DFA predicts the alternative and then a simple switch
* does the jump to the code that actually matches that alternative.
*/

```

```

altSwitchCase() ::= <<
case <i> :
 <@prealt()>
 <it>
 break;<\n>
>>

```

```

/** An alternative is just a list of elements; at outermost level */

```

```

alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
// <fileName>:<description>
{
<@declarations()>
<elements:element()>
<rew>
<@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
* mode, does nothing.
*/
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label>=<labelType><(endif>matchStream(input,<token>,FOLLOW_<token>_in_<ruleName><element
Index><if(label)><endif>; <checkRuleBacktrackFailure()>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label>==null) list_<label>=new Array();
list_<label>.push(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
match(<char>); <checkRuleBacktrackFailure()>
>>

```

```

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
matchRange(<a>,); <checkRuleBacktrackFailure()>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>
<else>
<label>=<labelType>(input.LT(1));<\n>
<endif>
<endif>
if (<s>) {
 input.consume();
 <postmatchCode>
<if(!LEXER)>
 this.state.errorRecovery=false;
<endif>
 <if(backtracking)>this.state.failed=false;<endif>
}
else {
 <ruleBacktrackFailure()>
 <@mismatchedSetException()>
<if(LEXER)>
 throw recover(new MismatchedSetException(null,input));<\n>
<else>
 throw new MismatchedSetException(null,input);
 <! use following code to make it recover inline; remove throw mse;
 recoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
 !>
<endif>
}<\n>
>>

matchRuleBlockSet ::= matchSet

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label) ::= <<

```



```

<if(label)>
var <label>Start:int = charIndex;
matchString(<string>); <checkRuleBacktrackFailure()>
<label> = CommonToken.createFromStream(input, TokenConstants.INVALID_TOKEN_TYPE,
TokenConstants.DEFAULT_CHANNEL, <label>Start, charIndex-1);
<else>
matchString(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label>=<labelType>(input.LT(1));<\n>
<endif>
matchAny(input); <checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
matchAny(); <checkRuleBacktrackFailure()>
>>

```

```

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 *
 * GMS: Note: do not use post-decrement operator! ASC produces bad code for exceptions in this case.
 * See: https://bugs.adobe.com/jira/browse/ASC-3625
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
pushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)><label>=<endif><if(scope)><scope.delegateName()>.<endif><rule.name>(<args; separator=", ">);<\n>
state._fsp = state._fsp - 1;

```

```

<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
var <label>Start<elementIndex>:int = charIndex;
<if(scope)><scope:delegateName()>.<endif>m<rule.name>(<args; separator=" ">);
<checkRuleBacktrackFailure()>
<label> = CommonToken.createFromStream(input, TokenConstants.INVALID_TOKEN_TYPE,
TokenConstants.DEFAULT_CHANNEL, <label>Start<elementIndex>, charIndex-1);
<else>
<if(scope)><scope:delegateName()>.<endif>m<rule.name>(<args; separator=" ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
var <label>Start<elementIndex>:int = charIndex;
match(EOF); <checkRuleBacktrackFailure()>
var <label>:<labelType> = CommonToken.createFromStream(input, EOF,
TokenConstants.DEFAULT_CHANNEL, <label>Start<elementIndex>, charIndex-1);
<else>
match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */

```

```

tree(root, actionsAfterRoot, children, nullableChildList,
 enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1)==TokenConstants.DOWN) {
 matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
 <children:element()>
 matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
}
<else>
matchStream(input, TokenConstants.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
matchStream(input, TokenConstants.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)) {
 <ruleBacktrackFailure()>
 throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(<k>);<\n>
<edges; separator="\nelse ">
else {
<if(eotPredictsAlt)>
 alt<decisionNumber>=<eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 throw new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <! Need to add hook for noViableAltException() !>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */

```

```

dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

```

```

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */

```

```

dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else {
 alt<decisionNumber>=<eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

```

```

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber>=<alt>";

```

```

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */

```

```

dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) {
 <targetState>
}
>>

```

```

// F i x e d D F A (switch case)

```

```

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */

```

```

dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
<edges; separator="\n">
default:
<if(eotPredictsAlt)>

```

```

 alt<decisionNumber>=<eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 throw new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <! Need to add hook for noViableAltException !>
<endif>
}<\n>
>>

```

```

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
 <edges; separator="\n">
}<\n>
>>

```

```

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
default:
 alt<decisionNumber>=<eotPredictsAlt>;
 break;<\n>
<endif>
}<\n>
>>

```

```

dfaEdgeSwitch(labels, targetState) ::= <<
<labels: { case <it>:}; separator="\n">
{
 <targetState>
}
break;
>>

```

// C y c l i c D F A

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */

```

```

dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = dfa<decisionNumber>.predict(input);
>>

```

```

cyclicDFActor(dfa) ::= <<

```

```

dfa<dfa.decisionNumber> = new DFA(this, <dfa.decisionNumber>,
 "<dfa.description>",

```

```

 DFA<dfa.decisionNumber>_eot, DFA<dfa.decisionNumber>_eof, DFA<dfa.decisionNumber>_min,
 DFA<dfa.decisionNumber>_max, DFA<dfa.decisionNumber>_accept, DFA<dfa.decisionNumber>_special,
 DFA<dfa.decisionNumber>_transition<if(dfa.specialStateSTs)>,
DFA<dfa.decisionNumber>_specialStateTransition<endif>;

```

```
>>
```

```
/* Dump DFA tables as run-length-encoded Strings of octal values.
```

```
* Can't use hex as compiler translates them before compilation.
```

```
* These strings are split into multiple, concatenated strings.
```

```
* Java puts them back together at compile time thankfully.
```

```
* Java cannot handle large static arrays, so we're stuck with this
```

```
* encode/decode approach. See analysis and runtime DFA for
```

```
* the encoding methods.
```

```
*/
```

```
cyclicDFA(dfa) ::= <<
```

```
private const DFA<dfa.decisionNumber>_eot:Array =
```

```
 DFA.unpackEncodedString("<dfa.javaCompressedEOT; wrap=\"\"+\n \>");
```

```
private const DFA<dfa.decisionNumber>_eof:Array =
```

```
 DFA.unpackEncodedString("<dfa.javaCompressedEOF; wrap=\"\"+\n \>");
```

```
private const DFA<dfa.decisionNumber>_min:Array =
```

```
 DFA.unpackEncodedString("<dfa.javaCompressedMin; wrap=\"\"+\n \>", true);
```

```
private const DFA<dfa.decisionNumber>_max:Array =
```

```
 DFA.unpackEncodedString("<dfa.javaCompressedMax; wrap=\"\"+\n \>", true);
```

```
private const DFA<dfa.decisionNumber>_accept:Array =
```

```
 DFA.unpackEncodedString("<dfa.javaCompressedAccept; wrap=\"\"+\n \>");
```

```
private const DFA<dfa.decisionNumber>_special:Array =
```

```
 DFA.unpackEncodedString("<dfa.javaCompressedSpecial; wrap=\"\"+\n \>");
```

```
private const DFA<dfa.decisionNumber>_transition:Array = [
```

```
 <dfa.javaCompressedTransition:{s|DFA.unpackEncodedString("<s; wrap=\"\"+\n\>")}; separator=",\n">
```

```
];
```

```
<if(dfa.specialStateSTs)>
```

```
private function DFA<dfa.decisionNumber>_specialStateTransition(dfa:DFA, s:int, _input:InputStream):int {
```

```
 <if(LEXER)>
```

```
 var input:InputStream = _input;
```

```
 <endif>
```

```
 <if(PARSER)>
```

```
 var input:TokenStream = TokenStream(_input);
```

```
 <endif>
```

```
 <if(TREE_PARSER)>
```

```
 var input:TreeNodeStream = TreeNodeStream(_input);
```

```
 <endif>
```

```
var _s:int = s;
```

```
switch (s) {
```

```
 <dfa.specialStateSTs:{state |
```

```
 case <i0> : <! compressed special state numbers 0..n-1 !>
```

```
 <state>; separator="\n">
```

```
 }
```

```

<if(backtracking)>
 if (this.state.backtracking>0) {this.state.failed=true; return -1;}<\n>
<endif>
 throw dfa.error(new NoViableAltException(dfa.description, <dfa.decisionNumber>, _s, input));
} <\n>
<endif>

protected var dfa<dfa.decisionNumber>:DFA; // initialized in constructor

>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
var LA<decisionNumber>_<stateNumber>:int = input.LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
var index<decisionNumber>_<stateNumber>:int = input.index;
input.rewind();<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if (s>=0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) {s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

```

```

orPredicates(operands) ::= "<first(operands)><rest(operands):{ o | ||<o>}>"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>===<atomAsInt>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atomAsInt>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber>|>=<lowerAsInt> &&
LA<decisionNumber>_<stateNumber>|<=<upperAsInt>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::=
"(input.LA(<k>)|>=<lowerAsInt> && input.LA(<k>)|<=<upperAsInt>)"

setTest(ranges) ::= "<ranges; separator=\\\"|\\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected var <scope.name>_stack:Array = new Array();<\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected var <scope.name>_stack:Array = new Array();<\n>
<endif>
>>

returnStructName() ::= "<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>

```



```

void
<endif>
<endif>
>>

/** Generate the Java type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<returnStructName()>
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<asTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
var <label.label.text>:<ruleLabelType(referencedRule=label.referencedRule)> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public static class <returnType()> extends <if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope {
 <scope.attributes:{public <it.decl>;}; separator="\n">
 <@ruleReturnMembers()>
};
<endif>

```

>>

```
parameterScope(scope) ::= <<
<scope.attributes:{<it.name>:<it.type>} ; separator=", ">
>>
```

```
parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";
```

```
scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
<scope>_stack[<scope>_stack.length-<negIndex>-1].<attr.name>
<else>
<if(index)>
<scope>_stack[<index>].<attr.name>
<else>
<scope>_stack[<scope>_stack.length-1].<attr.name>
<endif>
<endif>
>>
```

```
scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
<scope>_stack[<scope>_stack.length-<negIndex>-1].<attr.name> =<expr>;
<else>
<if(index)>
<scope>_stack[<index>].<attr.name> =<expr>;
<else>
<scope>_stack[<scope>_stack.length-1].<attr.name> =<expr>;
<endif>
<endif>
>>
```

```
/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"
```

```
/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(<scope>!=null?<scope>.values.<attr.name>:<initValue(attr.type)>)
<else>
<scope>
<endif>
>>
```

```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.values.<attr.name>
<else>
<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.values.<attr.name> =<expr>;
<else>
<attr.name> =<expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(<scope>!=null?<scope>.text:null)"
tokenLabelPropertyRef_type(scope,attr) ::= "(<scope>!=null?<scope>.type:0)"
tokenLabelPropertyRef_line(scope,attr) ::= "(<scope>!=null?<scope>.line:0)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(<scope>!=null?<scope>.charPositionInLine:0)"
tokenLabelPropertyRef_channel(scope,attr) ::= "(<scope>!=null?<scope>.channel:0)"
tokenLabelPropertyRef_index(scope,attr) ::= "(<scope>!=null?<scope>.tokenIndex:0)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(<scope>!=null?int(<scope>.text):0)"

ruleLabelPropertyRef_start(scope,attr) ::= "(<scope>!=null?<labelType>(<scope>.start):null)"
ruleLabelPropertyRef_stop(scope,attr) ::= "(<scope>!=null?<labelType>(<scope>.stop):null)"
ruleLabelPropertyRef_tree(scope,attr) ::= "(<scope>!=null?<ASTLabelType>(<scope>.tree):null)"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
(<scope>!=null?(input.tokenStream.toStringWithRange(
input.treeAdaptor.getTokenStartIndex(<scope>.start),
input.treeAdaptor.getTokenStopIndex(<scope>.start))):null)
<else>
(<scope>!=null?input.toStringWithRange(<scope>.start,<scope>.stop):null)
<endif>
>>

ruleLabelPropertyRef_st(scope,attr) ::= "(<scope>!=null?<scope>.st:null)"

```

```

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::=
 "<scope>!=null?<scope>.type:0)"
lexerRuleLabelPropertyRef_line(scope,attr) ::=
 "<scope>!=null?<scope>.lien:0)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::=
 "<scope>!=null?<scope>.charPositionInLine:0)"
lexerRuleLabelPropertyRef_channel(scope,attr) ::=
 "<scope>!=null?<scope>.channel:0)"
lexerRuleLabelPropertyRef_index(scope,attr) ::=
 "<scope>!=null?<scope>.tokenIndex:0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::=
 "<scope>!=null?<scope>.text:null)"
lexerRuleLabelPropertyRef_int(scope,attr) ::=
 "<scope>!=null?int(<scope>.text):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "<labelType>(retval.start)"
rulePropertyRef_stop(scope,attr) ::= "<labelType>(retval.stop)"
rulePropertyRef_tree(scope,attr) ::= "<ASTLabelType>(retval.tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.tokenStream.toStringWithRange(
 input.treeAdaptor.getTokenStartIndex(retval.start),
 input.treeAdaptor.getTokenStopIndex(retval.start))
<else>
input.toStringWithRange(retval.start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.st"

lexerRulePropertyRef_text(scope,attr) ::= "text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(charIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int(<scope>.text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.tree =<expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.st =<expr>;"

```

```

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {
 <action>
}
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static const <name>:BitSet = new BitSet([<words64:{<it>};separator=", ">]);<\n>
>>

codeFileExtension() ::= ".as"

true() ::= "true"
false() ::= "false"

Found in path(s):
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/ActionScript/ActionScript.stg
No license file was found, but licenses were detected in source scan.

/*
[The "BSD license"]
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```

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\*/

```
group Ruby implements ANTLRCore;
```

```
/** The overall file structure of a recognizer; stores methods for rules
```

```
* and cyclic DFAs plus support code.
```

```
*/
```

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer, name, tokens, tokenNames, rules,
 cyclicDFAs, bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals) ::=
```

```
<<
```

```
<name> (<fileName>)
```

```
Generated by ANTLR <ANTLRVersion> on <generatedTimestamp>
```

```
<docComment>
```

```
<recognizer>
```

```
>>
```

```
/**
```

```
* Inherits parameters from outputFile(...)
```

```
*
```

```
* labelType is not used for Ruby (no explicit type declarations)
```

```
*/
```

```
lexer(grammar, name, tokens, scopes, rules, numRules, labelType, filterMode,
 superClass) ::=
```

```
<<
```

```
class <name>
```

```
 require 'stringio'
```

```
<tokens:{<it.name>=<it.type>}; separator="\n">
```

```
 def initialize(input)
```

```
 input = StringIO.new(input) if input.respond_to?(:to_str)
```

```
 @input = CharStream.new(input)
```

```
 @backtracking = 0
```

```
 @failed = false
```

```

 <actions.lexer.init>
end

def next_token
 # TODO: catch exceptions
 @token = nil
 @channel = nil
 @text = nil

 @start = @input.index
 @line = @input.line
 @pos = @input.column

 @type = nil
 @type_int = nil

 return :EOF if <LA(1)> == :EOF

 match_Tokens()

 if @token == nil
 @text ||= @input.substring(@start, @input.index - 1)
 @token = Token.new(@type, @type_int, @line, @pos, @text, @channel)
 end

 <if(trace)>
 puts @token.inspect
 <endif>
 return @token
end

class Token
 attr_reader :token_type
 attr_reader :int_type
 attr_reader :line
 attr_reader :pos
 attr_reader :text
 attr_reader :channel

 def initialize(token_type, int_type, line, pos, text, channel = nil)
 @token_type = token_type
 @int_type = int_type
 @line = line
 @pos = pos
 @text = text
 @channel = channel
 end
end

```

```

alias :to_i :int_type
end

<actions.lexer.members>

private

class CharStream
 attr_reader :line
 attr_reader :column
 attr_reader :index

 def initialize(input)
 @buffer = ""
 @input = input
 @line = 1
 @column = 0

 @index = 0;
 end

 # returns a Fixnum between 0 and 0xFFFF or :EOF
 def look_ahead(pos)
 offset = @index + pos - 1
 if @buffer.length < offset + 1
 char = @input.read(offset + 1 - @buffer.length)
 @buffer <<< char if not char.nil?
 end

 if offset < @buffer.length
 @buffer[offset]
 else
 :EOF
 end
 end

 def mark
 @state = { :index => @index, :line => @line, :column => @column }
 return 0
 end

 def rewind(marker)
 @index = @state[:index]
 @line = @state[:line]
 @column = @state[:column]
 end
end

```



```

def consume
 look_ahead(1) # force a read from the input if necessary
 @column = @column + 1
 if @buffer[@index] == ?\n
 @line = @line + 1
 @column = 0
 end
 @index = @index + 1
end

def substring(start, stop)
 @buffer.slice(start, stop - start + 1)
end

def match(value = nil)
 @failed = false
 case
 when value.nil?
 @input.consume()
 when value.respond_to?(:to_str)
 catch(:done) do
 value.each_byte do |c|
 @failed ||= !(<isolatedLookaheadTest(atom="c", k=1)>)
 @input.consume() if !@failed
 throw :done if @failed
 end
 end
 else
 @failed = !(<isolatedLookaheadTest(atom="value", k=1)>)
 @input.consume() if !@failed
 end
end

if @failed && @backtracking \<= 0
 raise "Expected #{value.respond_to?(:chr) ? value.chr : value}"
end

def match_range(from, to)
 char = <LA(1)>

 if char != :EOF && (char \>= from || char \<= to)
 @failed = false
 match()
 elsif @backtracking > 0
 @failed = true
 else

```

```

 raise "Expected [#{from.chr}..#{to.chr}]"
 end
 end
 end

 <rules; separator="\n\n">

 <synpreds: synpred(); separator="\n\n">

 <dfaClass()>
 <cyclicDFAs: cyclicDFA()>
 end
 >>

 parser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, ASTLabelType, superClass,
 labelType, members) ::=
 <<
 require '<grammar.name>Lexer'

 class <name>
 attr_reader :lexer

 TOKENS = [
 <tokenNames: {[<i>, <i>]}; separator=",\n">
].inject({}) { |hash, pair|
 name = pair[0]
 index = pair[1] + 3 # hardcoded for now... no way to get this value from ANTLR

 if name[0] == '?'
 hash["T#{index}"] = index
 else
 hash["#{name}"] = index
 end

 hash
 }

 TOKENS[:EOF] = -1

 def initialize(input)
 if input.respond_to?(:to_str) || input.respond_to?(:read)
 input = <grammar.name>Lexer.new(input)
 end

 @lexer = input
 @input = TokenStream.new(input)
 @backtracking = 0
 @failed = false

```

```

<actions.parser.init>

<if(trace)>
 @indent = 0
<endif>
end

<rules; separator="\n\n">

<actions.parser.members>

private

class TokenStream
 attr_reader :index

 def initialize(input)
 @buffer = []
 @input = input
 @channel = nil

 @index = 0;
 end

 # returns a Token
 def look_ahead(pos)
 offset = @index + pos - 1

 while @buffer[-1] != :EOF && @buffer.length < offset + 1
 token = @input.next_token
 if token == :EOF || token.channel == @channel
 @buffer <<< token
 end
 end

 offset = -1 if offset >= @buffer.length
 if offset < @buffer.length
 @buffer[offset]
 end
 end

 def mark
 @state = { :index => @index }
 return 0
 end

 def rewind(marker)

```

```

 @index = @state[:index]
 end

 def consume
 look_ahead(1) # force a read from the input if necessary
 @index = @index + 1
 end
end

def match(token = nil)
 if token.nil? || <LA(1)> == token
 @input.consume
 @failed = false
 return
 elsif @backtracking > 0
 @failed = true
 else
 raise "Expected #{token}"
 end
end

def look_ahead(k)
 token = @input.look_ahead(k)
 if token != :EOF
 token = token.token_type
 end

 token
end

<synpreds: synpred(); separator="\n\n">

<dfaClass()>
 <cyclicDFAs: cyclicDFA()>
end
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules,
 numRules, bitsets, labelType, ASTLabelType,
 superClass, members) ::=
<<
 raise "treeParser not implemented"
>>

/** A simpler version of a rule template that is specific to the imaginary

```

```

* rules created for syntactic predicates. As they never have return values
* nor parameters etc..., just give simplest possible method. Don't do
* any of the normal memoization stuff in here either; it's a waste.
* As predicates cannot be inlined into the invoking rule, they need to
* be in a rule by themselves.
*/
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
<description>
def <ruleName>_fragment
 <block>
end
>>

/** How to generate code for a rule. This includes any return type
* data aggregates required for multiple return values.
*/
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::=
<<
<description>
def <ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
 <ruleDescriptor.returnScope.attributes:
 { _retval_<it.name> = nil }; separator = "\n"
 >
 <ruleLabelDefs()>

 <if(trace)>
 puts " " * @indent + "+<ruleName>"
 @indent += 1
 <endif>

 <ruleDescriptor.actions.init>

 <block>

 <if(trace)>
 @indent -= 1
 puts " " * @indent + "-<ruleName>"
 <endif>

 <if(!ruleDescriptor.isSynPred)>
 <if(ruleDescriptor.hasReturnValue)>
 <if(ruleDescriptor.hasMultipleReturnValues)>
 return {<ruleDescriptor.returnScope.attributes:{ a |:<a.name> => _retval_<a.name> }; separator = ">"}
 # TODO: need "Attribute.index" for this to work: return <ruleDescriptor.returnScope.attributes:{ a |
 retval<a.name> }; separator = ">"}
 <else>

```

```

 return _retval_<ruleDescriptor.singleValueReturnName>
 <endif>
<endif>
<endif>
end
>>

ruleLabelDefs() ::= <<
<ruleDescriptor.tokenLabels :{<it.label.text> = nil}; separator="\n">
<[ruleDescriptor.tokenListLabels, ruleDescriptor.ruleListLabels]
 :{list_<it.label.text> = nil}; separator="\n"
>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::=
<<
def match_<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
 <ruleDescriptor.actions.init>

 <lexerRuleLabelDefs(>
 <if(nakedBlock)>
 <block><\n>
 <else>
 @type = :<ruleName>
 @type_int = <ruleName>
 <block>
 <endif>
 end
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels, ruleDescriptor.ruleLabels]
 :{<it.label.text> = nil}; separator="\n"
>
<ruleDescriptor.charLabels:{<it.label.text> = nil}; separator="\n">
<[ruleDescriptor.tokenListLabels, ruleDescriptor.ruleListLabels]
 :{list_<it.label.text> = nil}; separator="\n"
>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.

```

```

*/
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::=
<<
<lexerRule(...)>
>>

filteringNextToken() ::=
<<
 raise "filteringNextToken not implemented"
>>

filteringActionGate() ::=
<<
 raise "filteringActionGate not implemented"
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
<switchBlock(...)>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
<switchBlock(...)>
>>

/**
* decision, decisionNumber don't seem to be relevant in this template
* alts actually has a single element
*/
ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::=
<<
<plainBlock(...)>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::=
<<
<plainBlock(...)>
>>

/** A (..)+ block with 0 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,descriptio

```

```

n) ::=
<<
<description>
matchedOnce<decisionNumber> = false
<decls>
while true
 alt<decisionNumber> = <maxAlt>
 <decision>
 case alt<decisionNumber>
 <alts:switchCase(); separator="\n">
 else
 break
 end
 matchedOnce<decisionNumber> = true
end

if !matchedOnce<decisionNumber>
 raise "Expected at least one match: <description>"
end
>>

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 0 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
<description>
<decls>
while true
 alt<decisionNumber> = <maxAlt>
 <decision>
 case alt<decisionNumber>
 <alts:switchCase(); separator="\n">
 else
 break
 end
end
end
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

```



```

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::=
<<
<description>
<elements: element(); separator="\n">
>>

```

```

// E L E M E N T S

```

```

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::=
<<
<if(label)>
_<label> = @input.look_ahead(1)<\n>
<endif>
match(:<token>)
>>

```

```

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::=
<<
<tokenRef(...)>
<listLabel(elem=label, ...)>
>>

```

```

listLabel(label,elem)::=
<<
list_<label> ||= []
list_<label> \<< _<elem>
>>

```

```

/** match a character */
charRef(char,label)::=
<<
<if(label)>
_<label> = <char><\n>
<endif>
match(<char>)
>>

```

```

/** match a character range */
charRangeRef(a,b,label)::=
<<
<if(label)>
_<label> = <LA(1)><\n>
<endif>

```

```

match_range(<a>,)
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode)::=
<<
<if(label)>
_<label> = <LA(1)><\n>
<endif>
if <s>
 match()
 <postmatchCode>
else
 raise "Expected set"
end
end
>>

matchSetAndListLabel(s,label,elementIndex,postmatchCode)::=
<<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

/** Match a string literal */
lexerStringRef(string,label)::=
<<
<if(label)>
_<label> = <string><\n>
<endif>
match(<string>)<\n>
>>

wildcard(label, elementIndex)::=
<<
<if(label)>
_<label> = <LA(1)><\n>
<endif>
match()
>>

wildcardAndListLabel(label,elementIndex)::=
<<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex)::=
<<
<if(label)>
_<label> = <LA(1)><\n>
<endif>
match()
>>

wildcardCharListLabel(label, elementIndex)::=
<<
raise "wildcardCharListLabel not implemented"
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values.
 */
ruleRef(rule,label,elementIndex,args,scope) ::=
<<
<if(label)>
_<label> = <rule>(<args; separator=","><\n>
<else>
<rule>(<args; separator=","><\n>
<endif>
>>

/** ids+=ID */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::=
<<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/**

A: b=B;
B: .;

TODO: Should we use a real token type instead of :invalid? How do we get it?

 */
lexerRuleRef(rule,label,args,elementIndex,scope)::=
<<
<if(label)>
_<label>_start_<elementIndex> = @input.index
_<label>_line_<elementIndex> = @input.line
_<label>_pos_<elementIndex> = @input.column

```

```

match_<rule>(<args; separator=", ">
 _<label> = Token.new(:invalid, 0,
 _<label>_line_<elementIndex>,
 _<label>_pos_<elementIndex>,
 @input.substring(_<label>_start_<elementIndex>, @input.index - 1), nil)
<else>
match_<rule>(<args; separator=", ">
<endif>
>>

```

```

lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::=
<<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex)::=
<<
<if(label)>
_<label> = :EOF<\n>
<endif>
match(:EOF)
>>

```

```

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList, enclosingTreeLevel,
 treeLevel) ::=
<<
raise "tree not implemented"
>>

```

```

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description)::=
<<
<description>
if !<evalPredicate(...)>
 raise "Semantic predicate failed: #{<description>}"
end
>>

```

```

// F i x e d D F A (if-then-else)

```

```

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)::=
<<

```

```

<description>
look_ahead<decisionNumber>_<stateNumber> = <LA(k)>
<if(LEXER)>
look_ahead<decisionNumber>_<stateNumber> = -1 if look_ahead<decisionNumber>_<stateNumber> == :EOF
<endif>

if <edges; separator="\nelsif ">
else
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt><\n>
<else>
 raise "Expected: <description>"<\n>
<endif>
end
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 *
 * If a semPredState, don't force lookahead lookup; preds might not
 * need.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)::=
<<
<description>
look_ahead<decisionNumber>_<stateNumber> = <LA(k)>

<if(LEXER)>
look_ahead<decisionNumber>_<stateNumber> = -1 if look_ahead<decisionNumber>_<stateNumber> == :EOF
<endif>

if <edges; separator="\nelsif ">
end
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a
 * rule anything other than 'a' predicts exiting.
 *
 * If a semPredState, don't force lookahead lookup; preds might not
 * need.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState)::=

```

```

<<
<description>
look_ahead<decisionNumber>_<stateNumber> = <LA(k)>
<if(LEXER)>
look_ahead<decisionNumber>_<stateNumber> = -1 if look_ahead<decisionNumber>_<stateNumber> == :EOF
<endif>

if <edges; separator="\nelsif ">
<if(eotPredictsAlt)>
else
 alt<decisionNumber> = <eotPredictsAlt>
<endif>
end
>>

/** An accept state indicates a unique alternative has been predicted */
/** It is not clear that decisionNumber is available here */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates)::=
<<
<labelExpr> <if(predicates)>&& <predicates><endif>
 <targetState>
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState)::=
<<
<description>
case <LA(k)>
 <edges; separator="\n">
 else
 <if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt><\n>
 <else>
 raise "Expected: <description>"<\n>
 <endif>
 end
>>

```

```

/**
 * eotPredictsAlt is not relevant here
 */
dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState)::=
<<
<description>
case <LA(k)>
 <edges; separator="\n">
end
>>

```

```

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState)::=
<<
<description>
case <LA(k)>
 <edges; separator="\n">
 <if(eotPredictsAlt)><\n>
 else
 alt<decisionNumber> = <eotPredictsAlt>
 <endif>
end
>>

```

```

dfaEdgeSwitch(labels, targetState)::=
<<
<if(PARSER)>
when <labels: {<it>} ; separator=","><\n>
<else>
when <labels: {<it>} ; separator=","><\n>
<endif>
 <targetState>
>>

```

// C y c l i c D F A

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */

```

```

dfaDecision(decisionNumber,description)::=
<<
alt<decisionNumber> = DFA<decisionNumber>.predict(self, @input)
>>

```

```

/** Generate the tables and support code needed for the DFAState object
 * argument. Unless there is a semantic predicate (or syn pred, which
 * become sem preds), all states should be encoded in the state tables.

```

```

* Consequently, cyclicDFAState/cyclicDFAEdge,eotDFAEdge templates are
* not used except for special DFA states that cannot be encoded as
* a transition table.
*/
cyclicDFA(dfa)::=
<<

DFA<dfa.decisionNumber> = DFA.new(
 [<dfa.eot; wrap="\n ", separator=",", null="-1">],
 [<dfa.eof; wrap="\n ", separator=",", null="-1">],
 [<dfa.min; wrap="\n ", separator=",", null="0">],
 [<dfa.max; wrap="\n ", separator=",", null="0">],
 [<dfa.accept; wrap="\n ", separator=",", null="-1">],
 [<dfa.special; wrap="\n ", separator=",", null="-1">],
 [
 <dfa.transition: {s | [<s; wrap="\n ", separator=",", null="-1">]}; separator=",\n", null="">
]
)

def special_state_transition(s)
<if(dfa.specialStateSTs)>
case s
 <dfa.specialStateSTs: {state |
 when <i0>
 <state>}; separator="\n">
end

 raise "Expected: <dfa.description>"
<else>
-1
<endif>
end

public :special_state_transition
>>

/** A special state in a cyclic DFA; special means has a semantic predicate
* or it's a huge set of symbols to check.
*/
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState)::=
<<
<if(semPredState)>
@input.rewind(0)
<else>
look_ahead_<decisionNumber>_<stateNumber> = <LA(1)>
<endif>
s = -1
<edges>
return s if s >= 0

```



```

>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful. Again, this is for special
 * states.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates)::=
<<
return s = <targetStateNumber> if (<labelExpr>) <if(predicates)>&& (<predicates>)<endif><\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates)::=
<<
s = <targetStateNumber><\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right)::= "<left> && <right>"

orPredicates(operands)::=
<<
(<operands; separator=" || ">)
>>

notPredicate(pred)::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description)::= "<pred>"

evalSynPredicate(pred,description)::= "<pred>()"

/**
 * It's not really clear that decisionNumber and stateNumber are available here
 */
lookaheadTest(atom,k,atomAsInt)::=
<<
<if(LEXER)>
look_ahead<decisionNumber>_<stateNumber> == <atom>
<else>
look_ahead<decisionNumber>_<stateNumber> == :<atom>
<endif>
>>

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable

```

```

* somewhere. Must ask for the lookahead directly.
*/
isolatedLookaheadTest(atom,k,atomAsInt) ::=
<<
<if(LEXER)>
<LA(k)> == <atom>
<else>
<LA(k)> == :<atom>
<endif>
>>

/**
* It's not really clear that decisionNumber and stateNumber are available here
*/
lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt)::=
<<
<if(LEXER)>
(look_ahead<decisionNumber>_<stateNumber> \>= <lower> && look_ahead<decisionNumber>_<stateNumber>
\<= <upper>)
<else>
(TOKENS[look_ahead<decisionNumber>_<stateNumber>] \>= <lowerAsInt> &&
TOKENS[look_ahead<decisionNumber>_<stateNumber>] \<= <upperAsInt>)
<endif>
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::=
<<
<if(LEXER)>
(<LA(k)> \>= <lower> && <LA(k)> \<= <upper>)
<else>
(TOKENS[<LA(k)>] \>= <lowerAsInt> && TOKENS[<LA(k)>] \<= <upperAsInt>)
<endif>
>>

setTest(ranges) ::=
<<
<ranges; separator=" || ">
>>

// A T T R I B U T E S

parameterAttributeRef(attr)::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>"

scopeAttributeRef(scope,attr,index,negIndex)::=
<<
raise "scopeAttributeRef not implemented"

```

```

>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::=
<<
 raise "scopeSetAttributeRef not implemented"
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size(>)>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope)::=
<<
 raise "isolatedDynamicScopeRef not implemented"
>>

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr)::=
<<
<if(referencedRule.hasMultipleReturnValues)>
 _<scope>[:<attr.name>]
<else>
 _<scope>
<endif>
>>

/**
<if(referencedRule.hasMultipleReturnValues)>
<scope>[<attr.index>] # TODO: need "Attribute.index" for this to work
<else>
<scope>
<endif>
>>
**/

returnAttributeRef(ruleDescriptor,attr)::=
<<
 retval<attr.name>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::=
<<
 retval<attr.name> = <expr>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label)::= "_<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label)::= "list_<label>"

// not sure the next are the right approach; and they are evaluated early;
// they cannot see TREE_PARSER or PARSER attributes for example :(

tokenLabelPropertyRef_text(scope,attr)::= "_<scope>.text"
tokenLabelPropertyRef_type(scope,attr)::= "_<scope>.token_type"
tokenLabelPropertyRef_line(scope,attr)::= "_<scope>.line"
tokenLabelPropertyRef_pos(scope,attr) ::= "_<scope>.pos"
tokenLabelPropertyRef_channel(scope,attr)::= "_<scope>.channel"
tokenLabelPropertyRef_index(scope,attr)::= "_<scope>.index"

tokenLabelPropertyRef_tree(scope,attr)::= <<
 raise "tokenLabelPropertyRef_tree not implemented"
>>

ruleLabelPropertyRef_start(scope,attr)::=
<<
 raise "ruleLabelPropertyRef_start not implemented"
>>

ruleLabelPropertyRef_stop(scope,attr)::=
<<
 raise "ruleLabelPropertyRef_stop not implemented"
>>

ruleLabelPropertyRef_tree(scope,attr)::=
<<
 raise "ruleLabelPropertyRef_tree not implemented"
>>

ruleLabelPropertyRef_text(scope,attr)::=
<<
 raise "ruleLabelPropertyRef_text not implemented"
>>

ruleLabelPropertyRef_st(scope,attr)::=
<<
 raise "ruleLabelPropertyRef_st not implemented"
>>

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label)::=

```

```
<<
 raise "lexerRuleLabel not implemented"
>>

lexerRuleLabelPropertyRef_type(scope,attr)::=
<<
 raise "lexerRuleLabelPropertyRef_type not implemented"
>>

lexerRuleLabelPropertyRef_line(scope,attr)::=
<<
 raise "lexerRuleLabelPropertyRef_line not implemented"
>>

lexerRuleLabelPropertyRef_pos(scope,attr)::=
<<
 raise "lexerRuleLabelPropertyRef_pos not implemented"
>>

lexerRuleLabelPropertyRef_channel(scope,attr)::=
<<
 raise "lexerRuleLabelPropertyRef_channel not implemented"
>>

lexerRuleLabelPropertyRef_index(scope,attr)::=
<<
 raise "lexerRuleLabelPropertyRef_index not implemented"
>>

lexerRuleLabelPropertyRef_text(scope,attr)::=
<<
 raise "lexerRuleLabelPropertyRef_text not implemented"
>>

lexerRulePropertyRef_text(scope,attr) ::= "@text"
lexerRulePropertyRef_type(scope,attr) ::= <<
 raise "lexerRulePropertyRef_type not implemented"
>>

lexerRulePropertyRef_line(scope,attr) ::= "@line"
lexerRulePropertyRef_pos(scope,attr) ::= "@pos"

lexerRulePropertyRef_index(scope,attr) ::= <<
 raise "lexerRulePropertyRef_index not implemented"
>>
lexerRulePropertyRef_channel(scope,attr) ::= "@channel"

lexerRulePropertyRef_start(scope,attr) ::= "@start"
```

```

lexerRulePropertyRef_stop(scope,attr) ::= <<
 raise "lexerRulePropertyRef_stop not implemented"
>>

ruleSetPropertyRef_tree(scope,attr,expr) ::= <<
 raise "ruleSetPropertyRef_tree not implemented"
>>
ruleSetPropertyRef_st(scope,attr,expr) ::= <<
 raise "ruleSetPropertyRef_st not implemented"
>>

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr)::=
<<
 raise "rulePropertyRef_start not implemented"
>>

rulePropertyRef_stop(scope,attr)::=
<<
 raise "rulePropertyRef_stop not implemented"
>>

rulePropertyRef_tree(scope,attr)::=
<<
 raise "rulePropertyRef_tree not implemented"
>>

rulePropertyRef_text(scope,attr)::=
<<
 raise "rulePropertyRef_text not implemented"
>>

rulePropertyRef_st(scope,attr)::=
<<
 raise "rulePropertyRef_st not implemented"
>>

/** How to execute an action */
/** TODO: add syntactic predicate & backtracking gates */
execAction(action)::=
<<
<action>
>>

// M I S C (properties, etc...)

```

```

codeFileExtension()::=".rb"

true()::="true"
false()::="false"

noRewrite(rewriteBlockLevel, treeLevel) ::= ""

////////// ----- private templates -----

bitset() ::=
<<
 raise "bitset not implemented"
>>

element() ::= "<it.el>"

plainBlock(decls, alts, description) ::=
<<
<decls>
<alts>
>>

switchBlock(description, decisionNumber, maxAlt, alts, decls, decision) ::=
<<
<description>
alt<decisionNumber> = <maxAlt>
<decls>
<decision>
case alt<decisionNumber>
 <alts:switchCase(); separator="\n">
end
>>

switchCase() ::=
<<
when <i>
 <it>
>>

LA(k) ::=
<<
<if(LEXER)>
 @input.look_ahead(<k>)
<else>
 look_ahead(<k>)

```

```
<endif>
```

```
>>
```

```
synpred(name) ::= <<
```

```
def <name>
```

```
 start = @input.mark()
```

```
 @backtracking += 1
```

```
 <name>_fragment()
```

```
 @backtracking -= 1
```

```
 success = !@failed
```

```
 @input.rewind(start)
```

```
 @failed = false
```

```
 return success
```

```
end
```

```
>>
```

```
parameterScope(scope) ::= <<
```

```
<scope.attributes:{<it.decl>}; separator=", ">
```

```
>>
```

```
dfaClass() ::= <<
```

```
<if(cyclicDFAs)>
```

```
 class DFA
```

```
 def initialize(eot, eof, min, max, accept, special, transition)
```

```
 @eot = eot
```

```
 @eof = eof
```

```
 @min = min
```

```
 @max = max
```

```
 @accept = accept
```

```
 @special = special
```

```
 @transition = transition
```

```
 end
```

```
 def predict(parser, input)
```

```
 mark = input.mark()
```

```
 s = 0 # we always start at s0
```

```
 begin
```

```
 loop do
```

```
 special_state = @special[s]
```

```
 if special_state >= 0
```

```
 s = parser.special_state_transition(special_state)
```

```
 input.consume()
```

```
 next
```

```
 end
```



```

if @accept[s] >= 1
 return @accept[s]
end

look for a normal char transition
c = input.look_ahead(1).to_i
if c != :EOF && c >= @min[s] && c <= @max[s]
 next_state = @transition[s][c - @min[s]] # move to next state
 if next_state < 0
 # was in range but not a normal transition
 # must check EOT, which is like the else clause.
 # eot[s]>=0 indicates that an EOT edge goes to another
 # state.
 if @eot[s] >= 0 # EOT Transition to accept state?
 s = @eot[s]
 input.consume()
 next
 end
 raise "No viable alt"
 end
 s = next_state
 input.consume()
 next
end
if @eot[s] >= 0 # EOT Transition?
 s = @eot[s]
 input.consume()
 next
end
if c == :EOF && @eof[s] >= 0 # EOF Transition to accept state?
 return @accept[@eof[s]]
end

not in range and not EOF/EOT, must be invalid symbol
raise "No viable alt"
end
ensure
 input.rewind(mark)
end
end
end
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/Ruby/Ruby.stg

No license file was found, but licenses were detected in source scan.

```
/*
 * [The "BSD licence"]
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 *
 * Conversion to C#:
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 * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
 * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */
/** Template overrides to add debugging to normal Java output;
 * If ASTs are built, then you'll also get ASTDbg.stg loaded.
 */
group Dbg;

@outputFile.imports() ::= <<
<@super.imports(>
using Antlr.Runtime.Debug;
using IOException = System.IO.IOException;
>>

@genericParser.members() ::= <<
<if(grammar.grammarIsRoot)>
public static readonly string[] ruleNames =
new string[]
```

```

{
 "invalidRule", <grammar.allImportedRules:{rST | "<rST.name>"}; wrap="\n ", separator=", ">
};<\n>
<endif>
<if(grammar.grammarIsRoot)><! grammar imports other grammar(s) !>
int ruleLevel = 0;
public virtual int RuleLevel { get { return ruleLevel; } }
public virtual void IncRuleLevel() { ruleLevel++; }
public virtual void DecRuleLevel() { ruleLevel--; }
<if(profile)>
 <ctorForProfilingRootGrammar()>
<else>
 <ctorForRootGrammar()>
<endif>
<ctorForPredefinedListener()>
<else><! imported grammar !>
public int RuleLevel { get { return <grammar.delegators:{g| <g.delegateName()>>.RuleLevel; } } }
public void IncRuleLevel() { <grammar.delegators:{g| <g.delegateName()>>.IncRuleLevel(); } }
public void DecRuleLevel() { <grammar.delegators:{g| <g.delegateName()>>.DecRuleLevel(); } }
 <ctorForDelegateGrammar()>
<endif>
<if(profile)>
public virtual bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
 ((Profiler)dbg).ExamineRuleMemoization(input, ruleIndex,
 <grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 return super.AlreadyParsedRule(input, ruleIndex);
}<\n>
public virtual void Memoize(IIntStream input, int ruleIndex, int ruleStartIndex)
{
 ((Profiler)dbg).Memoize(input, ruleIndex, ruleStartIndex,
 <grammar.composite.rootGrammar.recognizerName>.ruleNames[ruleIndex]);
 super.Memoize(input, ruleIndex, ruleStartIndex);
}<\n>
<endif>
protected virtual bool EvalPredicate(bool result, string predicate)
{
 dbg.SemanticPredicate(result, predicate);
 return result;
}<\n>
>>

ctorForRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
<! Same except we add port number and profile stuff if root grammar !>
public <name>(<inputStreamType> input)
: this(input, DebugEventSocketProxy.DEFAULT_DEBUGGER_PORT, new RecognizerSharedState())
{

```

```

}
public <name>(<inputStreamType> input, int port, RecognizerSharedState state)
: base(input, state)
{
<parserCtorBody()>
<createListenerAndHandshake()>
<grammar.directDelegates:{g|<g:delegateName()> = new <g.recognizerName>(input, dbg, this.state,
this<grammar.delegators:{g|, <g:delegateName()>>);}; separator="\n">
<@finally()>
}<\n>
>>

ctorForProfilingRootGrammar() ::= <<
<! bug: can't use <@super.members()> cut-n-paste instead !>
public <name>(<inputStreamType> input)
: this(input, new Profiler(null), new RecognizerSharedState())
{
}
public <name>(<inputStreamType> input, IDebugEventListener dbg, RecognizerSharedState state)
: base(input, dbg, state)
{
Profiler p = (Profiler)dbg;
p.setParser(this);
<parserCtorBody()>
<grammar.directDelegates:
{g|<g:delegateName()> = new <g.recognizerName>(input, dbg, this.state, this<grammar.delegators:{g|,
<g:delegateName()>>);}; separator="\n">
<@finally()>
}
}<\n>
>>

/** Basically we don't want to set any dbg listeners are root will have it. */
ctorForDelegateGrammar() ::= <<
public <name>(<inputStreamType> input, IDebugEventListener dbg, RecognizerSharedState
state<grammar.delegators:{g|, <g.recognizerName> <g:delegateName()>> }>)
: base(input, dbg, state)
{
<parserCtorBody()>
<grammar.directDelegates:
{g|<g:delegateName()> = new <g.recognizerName>(input, this, this.state<grammar.delegators:{g|,
<g:delegateName()>>);}; separator="\n">
}<\n>
}<\n>
>>

ctorForPredefinedListener() ::= <<
public <name>(<inputStreamType> input, IDebugEventListener dbg)
<@superClassRef>: base(input, dbg, new RecognizerSharedState())<@end>

```

```

{
<if(profile)>
 Profiler p = (Profiler)dbg;
 p.setParser(this);
<endif>
<parserCtorBody()>
<grammar.directDelegates:{g|<g:delegateName()> = new <g.recognizerName>(input, dbg, this.state,
this<grammar.delegators:{g|, <g:delegateName()>}>);}; separator="\n">
<@finally()>
}<\n>
>>

```

```

createListenerAndHandshake() ::= <<
<if(TREE_PARSER)>
DebugEventSocketProxy proxy = new DebugEventSocketProxy(this, port, input.TreeAdaptor);<\n>
<else>
DebugEventSocketProxy proxy = new DebugEventSocketProxy(this, port, null);<\n>
<endif>
DebugListener = proxy;
try
{
 proxy.Handshake();
}
catch (IOException ioe)
{
 ReportError(ioe);
}
>>

```

```

@genericParser.superClassName() ::= "Debug<@super.superClassName()>"

```

```

@rule.preamble() ::= <<
try
{
 dbg.EnterRule(GrammarFileName, "<ruleName>");
 if (RuleLevel == 0)
 {
 dbg.Commence();
 }
 IncRuleLevel();
 dbg.Location(<ruleDescriptor.tree.line>, <ruleDescriptor.tree.charPositionInLine>);<\n>
>>

```

```

@rule.postamble() ::= <<
dbg.Location(<ruleDescriptor.EORNode.line>, <ruleDescriptor.EORNode.charPositionInLine>);<\n>
}
finally
{

```

```

dbg.ExitRule(GrammarFileName, "<ruleName>");
DecRuleLevel();
if (RuleLevel == 0)
{
 dbg.Terminate();
}
}<\n>
>>

@synpred.start() ::= "dbg.BeginBacktrack(state.backtracking);"

@synpred.stop() ::= "dbg.EndBacktrack(state.backtracking, success);"

// Common debug event triggers used by region overrides below

enterSubRule() ::= <<
try
{
 dbg.EnterSubRule(<decisionNumber>);<\n>
}
>>

exitSubRule() ::= <<
}
finally
{
 dbg.ExitSubRule(<decisionNumber>);
}<\n>
>>

enterDecision() ::= <<
try
{
 dbg.EnterDecision(<decisionNumber>);<\n>
}
>>

exitDecision() ::= <<
}
finally
{
 dbg.ExitDecision(<decisionNumber>);
}<\n>
>>

enterAlt(n) ::= "dbg.EnterAlt(<n>);<\n>"

// Region overrides that tell various constructs to add debugging triggers

@block.predecision() ::= "<enterSubRule()><enterDecision()>"

```

```

@block.postdecision() ::= "<exitDecision(>"

@block.postbranch() ::= "<exitSubRule(>"

@ruleBlock.predecision() ::= "<enterDecision(>"

@ruleBlock.postdecision() ::= "<exitDecision(>"

@ruleBlockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@blockSingleAlt.prealt() ::= "<enterAlt(n=\"1\")>"

@positiveClosureBlock.preloop() ::= "<enterSubRule(>"

@positiveClosureBlock.postloop() ::= "<exitSubRule(>"

@positiveClosureBlock.predecision() ::= "<enterDecision(>"

@positiveClosureBlock.postdecision() ::= "<exitDecision(>"

@positiveClosureBlock.earlyExitException() ::=
"dbg.RecognitionException(eee<decisionNumber>);<n>"

@closureBlock.preloop() ::= "<enterSubRule(>"

@closureBlock.postloop() ::= "<exitSubRule(>"

@closureBlock.predecision() ::= "<enterDecision(>"

@closureBlock.postdecision() ::= "<exitDecision(>"

@altSwitchCase.prealt() ::= "<enterAlt(n=i)>"

@element.prematch() ::=
"dbg.Location(<it.line>, <it.pos>);"

@matchSet.mismatchedSetException() ::=
"dbg.RecognitionException(mse);"

@dfaState.noViableAltException() ::= "dbg.RecognitionException(nvae);"

@dfaStateSwitch.noViableAltException() ::= "dbg.RecognitionException(nvae);"

dfaDecision(decisionNumber,description) ::= <<
try
{
isCyclicDecision = true;

```

```

<super.dfaDecision(...)>
}
catch (NoViableAltException nvae)
{
 dbg.RecognitionException(nvae);
 throw nvae;
}
>>

```

```

@cyclicDFA.errorMethod() ::= <<
public override void Error(NoViableAltException nvae)
{
 ((DebugParser)recognizer).dbg.RecognitionException(nvae);
}
>>

```

```

/** Force predicate validation to trigger an event */
evalPredicate(pred,description) ::= <<
EvalPredicate(<pred>, "<description>")
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp3/Dbg.stg

```

No license file was found, but licenses were detected in source scan.

/\*

[The "BSD licence"]

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\*/

group Cpp implements ANTLRCore;

cppTypeInitMap ::= [

"int":"0",

"long":"0",

"float":"0.0",

"double":"0.0",

"bool":"false",

"byte":"0",

"short":"0",

"char":"0",

default:"0" // anything other than an atomic type

]

// What we generate lexer/parser/treeparser, used a suffix in a few places

generatedType() ::= <<

<if(LEXER)>Lexer<endif><if(PARSER)>Parser<endif><if(TREE\_PARSER)>TreeParser<endif>

>>

leadIn(type) ::=

<<

/\*\* \file

\*

\* This <type> file was generated by ANTLR version <ANTLRVersion>

\*

\* - From the grammar source file : <fileName>

\* - On : <generatedTimestamp>

<if(LEXER)>

\* - for the lexer : <name><\n>

<endif>

<if(PARSER)>

\* - for the parser : <name><\n>

<endif>

<if(TREE\_PARSER)>

\* - for the tree parser : <name><\n>

<endif>

\*

\* Edit at your own peril.

\*/

>>

standardHeaders() ::=

<<

```

#include \<antlr3/<generatedType()>.h>

<if(profile)>
#warning "No profiling support.."
<endif>
<if(TREE_PARSER)>
#warning "No tree parsing yet..."
<endif>
>>

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass) ::=
<<
<leadIn("C++ source")>
<@includes>
#include "<name><headerFileExtension()>"
<@end>
<if(actions.(actionScope).header)>
// Header action start =====
<actions.(actionScope).header>
// Header action end =====
<endif>

<headerAction>

<standardHeaders()>

<docComment>
<recognizer>
>>
parserHeaderFile() ::= <<
>>
treeParserHeaderFile() ::= <<
>>
lexerHeaderFile() ::= <<
template<typename StreamType, typename TokenType, typename TokenBuilder>
class <name> : public antlr3::Lexer<StreamType,TokenType,TokenBuilder> {
// carry over general types
typedef typename StreamType::position_type position_type;
typedef typename StreamType::char_type char_type;

```

```

typedef antlr3::tokenid_type tokenid_type;
typedef antlr3::channel_type channel_type;
typedef antlr3::decision_type decision_type;
// exception shorthands
typedef antlr3::MismatchException\<position_type,char_type> MismatchException;
typedef antlr3::MismatchedRangeException\<position_type,char_type> MismatchedRangeException;
typedef antlr3::MismatchedSetException\<position_type,char_type> MismatchedSetException;
typedef antlr3::EarlyExitException\<position_type> EarlyExitException;
typedef antlr3::NoViableAltException\<position_type> NoViableAltException;
<if(backtracking)>
// @TODO backtracking ruleMemo = new HashMap\<numRules>+1];<\n> <! index from 1..n !>
<endif>

public:
<tokens:{ static const tokenid_type <tokenPrefix()><it.name> = <it.type>;}; separator="\n">
<scopes:{ <if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<actions.lexer.members>

<name>(StreamType* input)
: antlr3::Lexer\<StreamType,TokenType,TokenBuilder>(input)
{
}

<!if(filterMode)!>
<!filteringNextToken()!>
<endif!>
<rules; separator="\n\n">

// syn preds
<synpreds:{p | <lexerSynpred(p)>}>

// cyclic dfa's
<cyclicDFAs:{ dfa | DFA<dfa.decisionNumber> dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this);}; separator="\n">
// dfa tables..
}; // class <name><\n>
>>

headerFile(LEXER,
 PARSER,
 TREE_PARSER,
 actionScope,
 actions,
 docComment,
 recognizer,
 name,
 tokens,

```

```

 tokenNames,
 rules,
 cyclicDFAs,
 bitsets,
 buildTemplate,
 profile,
 backtracking,
 synpreds,
 memoize,
 numRules,
 fileName,
 ANTLRVersion,
 generatedTimestamp,
 trace,
 scopes,
 superClass
) ::=
<<
#ifdef _<name>_H
#define _<name>_H
<leadIn("C++ header")>
<actions.(actionScope).headerfile>

<@includes>
<standardHeaders()>
<@end>

<if(LEXER)>
<lexerHeaderFile()>
<endif>
<if(PARSER)>
<parserHeaderFile()>
<endif>
<if(TREE_PARSER)>
<treeParserHeaderFile()>
<endif>

#endif // _<name>_H<\n>
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
 filterMode) ::= <<

<cyclicDFAs:cyclicDFA()> <!-- dump tables for all DFA !>

>>

```

```

filteringNextToken() ::= <<
/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
public Token nextToken() {
while (true) {
if (input.LA(1)==CharStream.EOF) {
return Token.EOF_TOKEN;
}
this->token = 0;
tokenStartCharIndex = getCharIndex();
try {
int m = input.mark();
backtracking=1; <! means we won't throw slow exception !>
failed=false;
mTokens();
backtracking=0;
<! mTokens backtracks with synpred at backtracking==2
and we set the synpredgate to allow actions at level 1. !>
if (failed) {
input.rewind(m);
input.consume(); <! advance one char and try again !>
}
else {
return token;
}
}
catch (RecognitionException re) {
// shouldn't happen in backtracking mode, but...
reportError(re);
recover(re);
}
}
}

public void memoize(IntStream input, int ruleIndex, int ruleStartIndex)
{
if (backtracking > 1)
super.memoize(input, ruleIndex, ruleStartIndex);
}

public boolean alreadyParsedRule(IntStream input, int ruleIndex)
{
if (backtracking > 1)
return super.alreadyParsedRule(input, ruleIndex);
}

```

```

return false;
}
>>

```

```

filteringActionGate() ::= "backtracking == 1"

```

```

/** How to generate a parser */
genericParser(
 grammar, name, scopes, tokens, tokenNames, rules, numRules, cyclicDFAs,
 bitsets, inputStreamType, superClass, ASTLabelType="Object",
 labelType, members, filterMode
) ::= <<
// genericParser
class <name> : public <@superClassName><superClass><@end> {
public:
 static const char* tokenNames[] = {
 "\<invalid>", "\<EOR>", "\<DOWN>", "\<UP>", <tokenNames; separator=", ">
 };
 <tokens:{static tokenId_type <tokenPrefix()><it.name>=<it.type>;}; separator="\n">
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>>}>
 <@members>

 <name>(StreamType* input)
 : <superClass>\<StreamType,TokenType>(input)
 {
 <if(backtracking)>
 ruleMemo = new HashMap[<numRules>+1];<n> <! index from 1..n !>
 <endif>
 }
 <@end>

 //@TODO public String[] getTokenNames() { return tokenNames; }
 //@TODO public String getGrammarFileName() { return "<fileName>"; }
 <members>

 <rules; separator="\n\n">

 <synpreds:{p | <synpred(p)>>}>

 <cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber> = new
 DFA<dfa.decisionNumber>(this);}; separator="\n">
 <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

 <bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
 words64=it.bits)>
 };
>>

```

```

parser(
 grammar, name, scopes, tokens, tokenNames,
 rules, numRules, bitsets, ASTLabelType,
 superClass="Parser", labelType="Token",
 members={ <actions.parser.members> }) ::= <<
<genericParser(inputStreamType="TokenStream", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction,
 rules, numRules,
 bitsets,
 labelType={ <ASTLabelType> }, ASTLabelType="Object",
 superClass="TreeParser", members={ <actions.treeparser.members> }, filterMode
) ::= <<
<genericParser(inputStreamType="TreeNodeStream", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start <ruleName>
public void <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) throws
RecognitionException {
 <if(trace)>System.out.println("enter <ruleName> "+input.LT(1)+" failed="+failed+"
backtracking="+backtracking);<endif>
<if(trace)>
 try {
 <block>
 }
 finally {
 System.out.println("exit <ruleName> "+input.LT(1)+" failed="+failed+" backtracking="+backtracking);
 }
<else>
 <block>
<endif>
}
// $ANTLR end <ruleName>
>>

```

```

synpred(name) ::= <<
public boolean <name>() {
 this->backtracking++;
 <@start()>
 int start = input.mark();
 try {
 <name>_fragment(); // can never throw exception
 } catch (RecognitionException re) {
 System.err.println("impossible: "+re);
 }
 boolean success = ! this->failed;
 input.rewind(start);
 <@stop()>
 this->backtracking--;
 this->failed = false;
 return success;
}<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if (backtracking > 0 && alreadyParsedRule(input, <ruleDescriptor.index>))
 return <ruleReturnValue()>;
<endif>
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>
if (failed)
 return <ruleReturnValue()>;
<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>
if (backtracking > 0)
{
 failed = true;
 return <ruleReturnValue()>;
}
<endif>
>>

```



```

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start <ruleName>
// <fileName>:<description>
public <returnType()> <ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
throw(antlr3::BaseRecognitionException)
{
<if(trace)>
antlr3::Tracer trace(this,"<ruleName>");
System.out.println("enter <ruleName> "+input.LT(1)+" failed="+failed+" backtracking="+backtracking);
<endif>
<ruleDeclarations()>
<ruleLabelDefs()>
<ruleDescriptor.actions.init>
<@preamble()>
try {
<ruleMemoization(name=ruleName)>
<block>
}
<if(exceptions)>
<exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
<actions.(actionScope).rulecatch>
<else>
catch (RecognitionException re) {
reportError(re);
recover(input,re);
}<\n>
<endif>
<endif>
<endif>
finally {
<if(trace)>System.out.println("exit <ruleName> "+input.LT(1)+" failed="+failed+"
backtracking="+backtracking);<endif>
<ruleCleanUp()>
<(ruleDescriptor.actions.finally):execAction()>
}
<@postamble()>
return <ruleReturnValue()>;
}

```

```

// $ANTLR end <ruleName>
>>

catch(decl,action) ::= <<
catch (<e.decl>) {
 <e.action>
}
>>

ruleDeclarations() ::= <<
<ruleDescriptor.useScopes:{<it>_stack.push(new <it>_scope());}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_stack.push(new <it.name>_scope());}; separator="\n">
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> retval = new <returnType()>();
retval.start = input.LT(1);<n>
<else>
<ruleDescriptor.returnScope.attributes:{ a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.index();
<endif>
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {<labelType> <it.label.text>=null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {List list_<it.label.text>=null;}; separator="\n"
>
<[ruleDescriptor.ruleLabels,ruleDescriptor.ruleListLabels]
: ruleLabelDef(label=it); separator="\n"
>
<[ruleDescriptor.allRuleRefsInAltsWithRewrites,ruleDescriptor.allTokenRefsInAltsWithRewrites]
: {List list_<it>=new ArrayList();}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>

```

```

<endif>
<endif>
>>

ruleCleanUp() ::= <<
<ruleDescriptor.useScopes:{<it>_stack.pop();}; separator="\n">
<ruleDescriptor.ruleScope:{<it.name>_stack.pop();}; separator="\n">
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.stop = input.LT(-1);<\n>
<endif>
<if(memoize)>
<if(backtracking)>
if (backtracking > 0) { memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_startIndex); }
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
void m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
throw(antlr3::BaseRecognitionException)
{
<if(trace)>
antlr3::Tracer trace(this,"<ruleName>");
<endif>
antlr3::CountScope nestingTracker(this->ruleNestingLevel);
StreamType& input(this->getInput());
<if(nakedBlock)>
<ruleDescriptor.actions.init>
<ruleMemoization(name=ruleName)>
<block><\n>
<else>
tokenid_type type = <tokenPrefix()><ruleName>;
channel_type channel = antlr3::Token::DEFAULT_CHANNEL;
position_type start(input.getPosition());
<ruleDescriptor.actions.init>
<ruleMemoization(name=ruleName)>
<block>
<! create token if none exists *and* we are an outermost token !>
<execAction({if (this->token == 0 && this->ruleNestingLevel == 1) {
TokenType *tt = TokenBuilder::build(type,start,input,channel);
std::cout << (*tt) << std::endl;
this->emit(tt);
}<\n>
})>
<endif>

```

```

}
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
void mTokens() throw(antlr3::BaseRecognitionException)
{
StreamType& input(this->getInput());
<block><\n>
}
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,
maxK,maxAlt,description) ::= <<
// block <fileName>:<description>
decision_type alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
switch (alt<decisionNumber>) {
<alts:altSwitchCase()>
}
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// ruleBlock <fileName>:<description>
decision_type alt<decisionNumber>=<maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
switch (alt<decisionNumber>) {
<alts:altSwitchCase()>
}
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// ruleBlockSingleAlt <fileName>:<description>
<decls>

```

```

<@prealt(>
<alts>
<@postalt(>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
// <fileName>:<description>
<decls>
<@prealt(>
<alts>
<@postalt(>
>>

/** A (..)+ block with 0 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// positiveClosureBlock <fileName>:<description>
decision_type cnt<decisionNumber>=0;
<decls>
<@preloop(>
do {
decision_type alt<decisionNumber>=<maxAlt>;
<@predecision(>
<decision>
<@postdecision(>
switch (alt<decisionNumber>) {
<alts:altSwitchCase(>
default :
if (cnt<decisionNumber> >= 1)
goto loop<decisionNumber>;
EarlyExitException eee(input.getPosition(), <decisionNumber>);
<@earlyExitException(>
throw eee;
}
cnt<decisionNumber>++;
} while (true);
loop<decisionNumber>; ;
<@postloop(>
>>

positiveClosureBlockSingleAlt ::= positiveClosureBlock

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// closureBlock <fileName>:<description>
<decls>

```

```

<@preloop()>
do {
 decision_type alt<decisionNumber>=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
 default :
 goto loop<decisionNumber>;
 }
} while (true);
loop<decisionNumber>; ;
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
case <i> :
 <@prealt()>
 <i>
 break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt) ::= <<
// alt <fileName>:<description>
{
 <@declarations()>
 <elements:element()>
 <@cleanup()>
}
>>

// E L E M E N T S

```

```

/** Dump the elements one per line */
element() ::= <<
// element <fileName>:<description>
<@prematch()>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex) ::= <<
// tokenRef
<if(label)>
<label> = input.LT(1);<\n>
<endif>
this->match(input,<token>,FOLLOW_<token>_in_<ruleName><elementIndex>);
<checkRuleBacktrackFailure()>
>>

/** ids+=ID no AST building */
tokenRefAndListLabel(token,label,elementIndex) ::= <<
<tokenRef(...)>
<listLabel(...)>
>>

listLabel(label) ::= <<
if (list_<label>==null) list_<label>=new ArrayList();
list_<label>.add(<label>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
// charRef
<if(label)>
<tokenid_type()> <label> = input.LA(1);<\n>
<endif>
this->match(<char>);
<checkRuleBacktrackFailure()>
>>

/** match a character range */
charRangeRef(a,b) ::= "this->matchRange(<a>,); <checkRuleBacktrackFailure()>"

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
// matchSet
<if(label)>
<label> = input.LT(1);<\n>
<endif>
if (<s>)

```

```

{
 <postmatchCode>
 input.consume();
 <if(!LEXER)>
 errorRecovery=false;
 <endif>
 <if(backtracking)>failed=false;<endif>
}
else
{
 <ruleBacktrackFailure()>
 MismatchedSetException mse(input.getPosition(),input.LA(1));
 <@mismatchedSetException()>
 <if(LEXER)>
 this->recover(mse);
 <else>
 this->recoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
 <endif>
 throw mse;
}<\n>
>>

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(...)>
>>

/** Match a string literal */
lexerStringRef(string,label) ::= <<
// lexerStringRef
<if(label)>
position_type <label>Start(input.getPosition());
this->match(<string>);
<checkRuleBacktrackFailure()>
TokenType* <label> =
TokenBuilder::build(Token.INVALID_TOKEN_TYPE,<label>Start,input,Token.DEFAULT_CHANNEL);
<else>
this->match(<string>);
<checkRuleBacktrackFailure()><\n>
<endif>
>>

wildcard(label,elementIndex) ::= <<
<if(label)>
<label> = input.LT(1);<\n>
<endif>
this->matchAny(input);
<checkRuleBacktrackFailure()>

```



```

>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(...)>
>>

/** Match . wildcard */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<tokenid_type() <label> = input.LA(1);<\n>
<endif>
this->matchAny();
<checkRuleBacktrackFailure()>
>>

tokenid_type() ::= "<if(LEXER)>char_type<else>tokenid_type<endif>"

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values.
 */
ruleRef(rule,label,elementIndex,args) ::= <<
following.push(FOLLOW_<rule>_in_<ruleName><elementIndex>);
<if(label)>
<label>=<rule><args>;<\n>
<else>
<rule><args>;<\n>
<endif>
following.pop();
<checkRuleBacktrackFailure()>
>>

/** ids+=ID */
ruleRefAndListLabel(rule,label,elementIndex,args) ::= <<
<ruleRef(...)>
<listLabel(...)>
>>

/** A lexer rule reference */
lexerRuleRef(rule,label,args) ::= <<
<if(label)>
position_type <label>Start(input.getPosition());
m<rule><args>;

```

```

<checkRuleBacktrackFailure()>
TokenType* <label> =
TokenBuilder::build(Token.INVALID_TOKEN_TYPE,<label>Start,input,Token.DEFAULT_CHANNEL);
<else>
m<rule>(<args>);
<checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** EOF in the lexer */
lexerMatchEOF(label) ::= <<
<if(label)>
position_type <label>Start(input.getPosition());
match(EOF);
<checkRuleBacktrackFailure()>
TokenType* <label> = TokenBuilder::build(Token.EOF,<label>Start,input,Token.DEFAULT_CHANNEL);
<else>
match(EOF);
<checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** match ^(root children) in tree parser */
tree(root, children, nullableChildList) ::= <<
<root:element()>
<if(nullableChildList)>
if (input.LA(1)==antlr3::Token::DOWN) {
 match(input, antlr3::Token::DOWN, null);
 <checkRuleBacktrackFailure()>
 <children:element()>
 match(input, antlr3::Token::UP, null);
 <checkRuleBacktrackFailure()>
}
<else>
match(input, antlr3::Token::DOWN, null);
<checkRuleBacktrackFailure()>
<children:element()>
match(input, antlr3::Token::UP, null);
<checkRuleBacktrackFailure()>
<endif>
>>

```

```

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)) {
 <ruleBacktrackFailure()>

```

```

 throw new FailedPredicateException(input, "<ruleName>", "<description>");
 }
 >>

// F i x e d D F A (if-then-else)
dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
<if(!semPredState)>
<tokenid_type()> LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<endif>
<edges; separator="\nelse ">
else
{
<if(eotPredictsAlt)>
alt<decisionNumber> = <eotPredictsAlt>;<\n>
<else>
<ruleBacktrackFailure()>
NoViableAltException nvae(input.getPosition(), "<description>", <decisionNumber>, <stateNumber>);<\n>
<@noViableAltException()>
throw nvae;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
<if(!semPredState)>
<tokenid_type()> LA<decisionNumber>_<stateNumber> = input.LA(<k>);
<endif>
<edges; separator="\nelse ">
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
<if(!semPredState)>
<tokenid_type()> LA<decisionNumber>_<stateNumber> = input.LA(<k>);
<endif>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
else

```

```

{
 alt<decisionNumber> = <eotPredictsAlt>;
}
<\n>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>;"

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>)
{
 <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
 <edges; separator="\n">
 default:
 <if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>;
 <else>
 NoViableAltException nvae(input.getPosition(), "<description>", <decisionNumber>, <stateNumber>);<\n>
 <@noViableAltException()>
 throw nvae;<\n>
 <endif>
}
<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
 <edges; separator="\n">
}
<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>)) {
 <edges; separator="\n"><\n>
}
>>

```

```

<if(eotPredictsAlt)>
default:
alt<decisionNumber> = <eotPredictsAlt>;
break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{ case <it>:}; separator="\n"> {
 <targetState>
} break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
// dfaDecision
alt<decisionNumber> = predictDFA<decisionNumber>(input);
>>

/** The overall cyclic DFA chunk; contains all the DFA states */
cyclicDFA(dfa) ::= <<
/* cyclicDFA=<dfa>
*/
// cyclic = <dfa.cyclic>
// numstates = <dfa.numberOfStates>

// startState = <dfa.startState>
// startState.numberOfTransitions = <dfa.startState.NumberOfTransitions>
// startState.lookaheadDepth = <dfa.startState.LookaheadDepth>

const static short <name>dfa<dfa.decisionNumber>_eot[<dfa.numberOfStates>] = {
 <dfa.eot; wrap="\n ", separator=",", null="-1">
};
const static short <name>dfa<dfa.decisionNumber>_eof[<dfa.numberOfStates>] = {
 <dfa.eof; wrap="\n ", separator=",", null="-1">
};
const static unichar <name>dfa<dfa.decisionNumber>_min[<dfa.numberOfStates>] = {
 <dfa.min; wrap="\n ", separator=",", null="0">
};
const static unichar <name>dfa<dfa.decisionNumber>_max[<dfa.numberOfStates>] = {
 <dfa.max; wrap="\n ", separator=",", null="0">
};

```

```

const static short <name>dfa<dfa.decisionNumber>_accept[<dfa.numberofStates>] = {
 <dfa.accept; wrap="\n ", separator=",", null="-1">
};
const static short <name>dfa<dfa.decisionNumber>_special[<dfa.numberofStates>] = {
 <dfa.special; wrap="\n ", separator=",", null="-1">
};
<dfa.edgeTransitionClassMap.keys: { table |
const static short <name>dfa<dfa.decisionNumber>_transition<i0>[] = {
 <table; separator=", ", wrap="\n ", null="-1">
};
}; null="">
const static short <name>dfa<dfa.decisionNumber>_transition[] = {
 <dfa.transitionEdgeTables: { whichTable|<name>dfa<dfa.decisionNumber>_transition<whichTable>, };
separator="\n", null="0 /* fixme? */">
};
<! add attribute for the DFA !>
DFA\<char_type> dfa<dfa.decisionNumber>;
<! this should go in the initializer of the thing
- (id) init
{
 if ((self = [super init]) != nil) {
 eot = <name>dfa<dfa.decisionNumber>_eot;
 eof = <name>dfa<dfa.decisionNumber>_eof;
 min = <name>dfa<dfa.decisionNumber>_min;
 max = <name>dfa<dfa.decisionNumber>_max;
 accept = <name>dfa<dfa.decisionNumber>_accept;
 special = <name>dfa<dfa.decisionNumber>_special;
 if (!(transition = calloc(<dfa.numberofStates>, sizeof(void*)))) {
 [self release];
 return nil;
 }
 <dfa.transitionEdgeTables: { whichTable|transition[<i0>] =
<name>dfa<dfa.decisionNumber>_transition<whichTable>;}; separator="\n", null="">
 }
 return self;
}
!>

<if(dfa.specialStateSTs)>
int specialStateTransition(int state)
{
 int s = state;
 switch (s) {
 <dfa.specialStateSTs: { state |
 case <i0> : <! compressed special state numbers 0..n-1 !>
 <state>;}; separator="\n">
 }
}
<if(backtracking)>

```

```

if (recognizer.isBacktracking()) {
 recognizer.setFailed();
 return -1;
}<\n>
<endif>
noViableAlt(s, input);
}<\n>
<endif>

<\n>

// <dfa.description>
decision_type predictDFA<dfa.decisionNumber>(StreamType& input)
{
 /* mark current location (rewind automatically when the rewinder goes
 * out of scope */
 antlr3::Rewinder<position_type> markPoint(input.getPosition());
 goto s0; // goto start...
 // ...
 throw NoViableAltException(input.getPosition(), "<dfa.description>", <dfa.decisionNumber>, 0 /* fixme */);<\n>
}<\n>
>>

/** A state in a cyclic DFA */
cyclicDFASState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
// cyclicDFASState
s<stateNumber>: {
 <if(semPredState)>
 input.rewind();<\n>
 <else>
 <tokenid_type()> LA<decisionNumber>_<stateNumber> = input.LA(1);
 <endif>
 <edges>
 <if(needErrorClause)>
 throw NoViableAltException(input.getPosition(), "<description>", <decisionNumber>, <stateNumber>);<\n>
 <endif><\n>
}<\n>
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
* state to jump to next if successful.
*/
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
// cyclicDFAEdge
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>)
{
 input.consume();

```

```

 goto s<targetStateNumber>;
 }<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= "goto s<targetStateNumber>";

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left> && <right>"

orPredicates(operands) ::= "<first(operands)><rest(operands):{o ||<o>}>"

notPredicate(pred) ::= "!<pred>"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>==<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>)==<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber>\>=<lower> && LA<decisionNumber>_<stateNumber>\<=<upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(input.LA(<k>)\>=<lower>
&& input.LA(<k>)\<=<upper>)"

setTest(ranges) ::= "<ranges; separator=\\\"\\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name> {
 <scope.attributes:{<it.decl>;}; separator="\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

```



```

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected static class <scope.name>_scope {
 <scope.attributes:{<it.decl>;}; separator="\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

```

```

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.name>_return
<else>
<if(ruleDescriptor.singleValueReturnType)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

```

```

ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.name>_return
<else>
<if(referencedRule.singleValueReturnType)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

```

```

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */

```

```

initValue(typeName) ::= <<
<javaTypeInitMap.(typeName)>
>>

```

```

ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

```

```

returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public static class <returnType()> {

```

```

 <labelType> start, stop;
<if(buildAST)>
 <ASTLabelType> tree;
<else>
<if(buildTemplate)>
 StringTemplate st;
<endif>
<endif>
 <scope.attributes:{<it.decl>;}; separator="\n">
};
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>;}; separator=", ">
>>

/** Used in codegen.g to translate $x.y references.
 * I could have left actions as StringTemplates to be inserted in
 * the output (so they could use attributes inherited from surrounding
 * templates), but really wanted to pass in AttributeScope and Attribute
 * objects so this translation could query them. So, translation of
 * $x.y to executable code occurs before recognizerST.toString() occurs.
 * I.e., actions are just text strings during final code generation.
 */
globalAttributeRef(scope,attr) ::= <<
((<scope><scope>_stack.peek()).<attr.name>
>>

parameterAttributeRef(attr) ::= "<attr.name>"

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack.elementAt(<scope>_stack.size()-<negIndex>-1)).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack.elementAt(<index>)).<attr.name>
<else>
((<scope>_scope)<scope>_stack.peek()).<attr.name>
<endif>
<endif>
>>

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like { $function.size()>0 && $function::name.equals("foo") }?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"

```

```

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.singleValueReturnType)>
<scope>
<else>
<scope>.<attr.name>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.singleValueReturnType)>
<attr.name>
<else>
retval.<attr.name>
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach; and they are evaluated early;
// they cannot see TREE_PARSER or PARSER attributes for example. :(

tokenLabelPropertyRef_text(scope,attr) ::= "<scope>.getText()"
tokenLabelPropertyRef_type(scope,attr) ::= "<scope>.getType()"
tokenLabelPropertyRef_line(scope,attr) ::= "<scope>.getLine()"
tokenLabelPropertyRef_pos(scope,attr) ::= "<scope>.getCharPositionInLine()"
tokenLabelPropertyRef_channel(scope,attr) ::= "<scope>.getChannel()"
tokenLabelPropertyRef_index(scope,attr) ::= "<scope>.getTokenIndex()"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"

ruleLabelPropertyRef_start(scope,attr) ::= "<scope>.start"
ruleLabelPropertyRef_stop(scope,attr) ::= "<scope>.stop"
ruleLabelPropertyRef_tree(scope,attr) ::= "<scope>.tree"
ruleLabelPropertyRef_text(scope,attr) ::= "input.toString(<scope>.start,<scope>.stop)"
ruleLabelPropertyRef_st(scope,attr) ::= "<scope>.st"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "<scope>.getType()"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "<scope>.getLine()"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "<scope>.getCharPositionInLine()"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "<scope>.getChannel()"

```

```

lexerRuleLabelPropertyRef_index(scope,attr) ::= "<scope>.getTokenIndex()"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "<scope>.getText()"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "((<labelType>)retval.start)"
rulePropertyRef_stop(scope,attr) ::= "((<labelType>)retval.stop)"
rulePropertyRef_tree(scope,attr) ::= "((<ASTLabelType>)retval.tree)"
rulePropertyRef_text(scope,attr) ::= "input.toString(retval.start,input.LT(-1))"
rulePropertyRef_st(scope,attr) ::= "retval.st"

// A C T I O N S

emit(type) ::= "emit(<type>);"

setType(type) ::= "setType(<type>);"

/** How to execute an action */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if (<actions.(actionScope).synpredgate>)
{
<action>
}
<else>
if (backtracking == 0)
{
<action>
}
<endif>
<else>
<action>
<endif>
>>

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static final BitSet <name> = new BitSet(new long[] { <it>L }; separator=", ">);<\n>
>>

tokenPrefix() ::= "TOK_"
codeFileExtension() ::= ".cpp"
// used in CPPTarget.java to generate the headerfile extension
headerFileExtension() ::= ".h"

true() ::= "true"
false() ::= "false"

```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CPP/ CPP.stg
```

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```
/*
```

```
[The "BSD licence"]
```

```
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```
*/
```

```
/** Template overrides to add debugging to AST stuff. Dynamic inheritance
```

```
* hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.
```

```
*/
```

```
group ASTDbg;
```

```
parserMembers() ::= <<
```

```
protected DebugTreeAdaptor adaptor =
```

```
 new DebugTreeAdaptor(null,new CommonTreeAdaptor());
```

```
public void setTreeAdaptor(TreeAdaptor adaptor) {
```

```
 this.adaptor = new DebugTreeAdaptor(dbg,adaptor);
```

```
}
```

```
public TreeAdaptor getTreeAdaptor() {
 return adaptor;
}<\n>
>>
```

```
parserCtorBody() ::= <<
>>
```

```
createListenerAndHandshake() ::= <<
<super.createListenerAndHandshake(>
>>
```

```
ctorForPredefinedListener() ::= <<
>>
```

```
@rewriteElement.pregen() ::= ""
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/C/ASTDbg.stg
```

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```
/*
```

```
[The "BSD licence"]
```

```
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```

```
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```

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\*/

/\*

New style messages. This file contains the actual layout of the messages emitted by ANTLR.  
The text itself is coming out of the languages/\*stg files, according to the chosen locale.  
This file contains the default format ANTLR uses.

\*/

group antlr;

location(file, line, column) ::= "<file>:<line>:<column>:"

message(id, text) ::= "<id> <text>"

report(location, message, type) ::= "<type><message.id>: <location> <message.text>"

wantsSingleLineMessage() ::= "false"

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/tool/templates/messages/formats/antlr.stg

No license file was found, but licenses were detected in source scan.

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\*/

group Delphi implements ANTLRCore;

csharpTypeInitMap ::= [

```
"int":"0",
"uint":"0",
"long":"0",
"ulong":"0",
"float":"0.0",
"double":"0.0",
"bool":"False",
"byte":"0",
"sbyte":"0",
"short":"0",
"ushort":"0",
"char":"#0",
"string":"",
"String":"",
default:"nil" // anything other than an atomic type
]
```

/\*\* The overall file structure of a recognizer; stores methods for rules

\* and cyclic DFAs plus support code.

\* LEXER (Boolean): should we generate lexer code?

\* PARSER (Boolean): should we generate parser code?

\* TREE\_PARSER (Boolean): should we generate tree parser code?

\* actionScope (String): 'lexer', 'parser', 'tree\_parser' or custom scope

\* actions (HashMap):

\* docComment (String): document comment

\* recognizer (Object): recognizer class generator

\* name (String): name of grammar

\* tokens (HashMap<name: String, type: Integer>):

\* tokenNames:

\* rules:

\* cyclicDFAs:

\* bitsets:

\* buildTemplate (Boolean): should we generate a string template?

\* buildAST (Boolean): should we generate an AST?

\* rewriteMode (Boolean): are we rewriting nodes?

\* profile (Boolean):

\* backtracking (Boolean): backtracking mode?

\* synpreds (): syntactic predicates

\* memoize (Boolean): should we memoize?

\* numRules (Integer): number of rules

\* fileName (String): fully qualified name of original .g file

\* ANTLRVersion (String): ANTLR version in Major.Minor.Build format



```

* generatedTimestamp (String): date/time when the file is generated
* trace (Boolean): should we trace input/output?
* scopes:
* superClass (String): name of base class, or empty string
* literals:
*/
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals) ::=
<<
unit <name>;

{$HINTS OFF}

// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<actions.(actionScope).header>

interface

<@imports>
uses<\n>
<@end>
<actions.(actionScope).usesInterface>
<if(TREE_PARSER)>
 Antlr.Runtime.Tree,<\n>
<endif>
 Antlr.Runtime,
 Antlr.Runtime.Collections,
 Antlr.Runtime.Tools;

<docComment>
<recognizer>
>>

/** Generates source code for the lexer class
* grammar (Grammar object)
*/
lexer(grammar, name, tokens, scopes, rules, numRules, labelType="Token",
 filterMode, superClass="Lexer") ::= <<
type
I<grammar.recognizerName> = interface(I<@superClassName><superClass><@end>)
end;

```

```

T<grammar.recognizerName> = class(T<@superClassName><superClass><@end>,
I<grammar.recognizerName>)
strict private
 FCnt: array [0..<grammar.numberOfDecisions>] of Byte;
 FLA: array [0..<grammar.numberOfDecisions>, 0..255] of Integer;
 FException: ERecognitionException;
 procedure InitializeCyclicDFAs;
 <cyclicDFAs:cyclicDFADeclaration()>
public
 const
 <tokens:{<it.name> = <it.type>;}; separator="\n">
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
strict private
 <actions.(actionScope).memberDeclarations>
public
 // delegates
 <grammar.delegates: {g|<g.delegateName(): I<superClass>; {<g.recognizerName>}}; separator="\n">
public
 // delegators
 <grammar.delegators: {g|<g.delegateName(): Pointer; {<g.recognizerName>}}; separator="\n">
 <last(grammar.delegators):{g|gParent: Pointer; {<g.recognizerName>}}>
protected
 { IBaseRecognizer }
 function GetGrammarFileName: String; override;
<if(filterMode)>
 function AlreadyParsedRule(const Input: IIntStream;
 const RuleIndex: Integer): Boolean; override;
 procedure Memoize(const Input: IIntStream; const RuleIndex,
 RuleStartIndex: Integer); override;
protected
 { ILexer }
 function NextToken: IToken; override;<\n>
<endif>
protected
 { ILexer }
 procedure DoTokens; override;
public
 constructor Create; overload;
 constructor Create(const AInput: ICharStream<grammar.delegators:{g}; const A<g.delegateName():
IBaseRecognizer{<g.recognizerName>}>); overload;
 constructor Create(const AInput: ICharStream; const AState: IRecognizerSharedState<grammar.delegators:{g};
const A<g.delegateName(): IBaseRecognizer{<g.recognizerName>}>); overload;

 <rules: {r | <if(!r.ruleDescriptor.isSynPred)><lexerRuleDeclaration(r)><endif>}>
 <synpreds:{p | <lexerSynpredDeclaration(p)>}; separator="\n">
end;

```

implementation

```

uses
<grammar.delegates: {g|<g.recognizerName>,}; separator="\n">
<grammar.delegators: {g|<g.recognizerName>,}; separator="\n">
<actions.(actionScope).usesImplementation>
SysUtils,
StrUtils,
Math;

{ T<grammar.recognizerName> }

constructor T<grammar.recognizerName>.Create;
begin
 InitializeCyclicDFAs;
end;

constructor T<grammar.recognizerName>.Create(const AInput: ICharStream<grammar.delegators:{g}; const
A<g:delegateName():>: IBaseRecognizer{<g.recognizerName>}>);
begin
 Create(AInput, nil<grammar.delegators:{g}, A<g:delegateName()>>);
end;

constructor T<grammar.recognizerName>.Create(const AInput: ICharStream; const AState:
IRecognizerSharedState<grammar.delegators:{g}; const A<g:delegateName():>:
IBaseRecognizer{<g.recognizerName>}>);
begin
 inherited Create(AInput, AState);
 InitializeCyclicDFAs; { TODO: Necessary in Delphi??? Not removed yet. }
 <if(memoize)>
 <if(grammar.grammarIsRoot)>
 State.RuleMemoCount := <numRules>+1;<\n> <! index from 1..n !>
 <endif>
 <endif>
 <grammar.directDelegates:
 {g|<g:delegateName()> := T<g.recognizerName>.Create(AInput, State<trunc(g.delegators):{p|,
<p:delegateName()>>, Self);}; separator="\n">
 <grammar.delegators:
 {g|<g:delegateName()> := Pointer(A<g:delegateName()>);}; separator="\n">
 <last(grammar.delegators):{g|gParent := Pointer(A<g:delegateName()>);}>
 <actions.(actionScope).memberInitializations>
end;
<actions.(actionScope).memberImplementations>
function T<grammar.recognizerName>.GetGrammarFileName: String;
begin
 Result := '<fileName>';
end;

<if(filterMode)>

```

```

<filteringNextToken()>
<endif>

<rules; separator="\n\n">
<synpreds: {p | <lexerSynpred(p)>}>

procedure T<grammar.recognizerName>.InitializeCyclicDFAs;
begin
 <cyclicDFAs: {dfa | FDFA<dfa.decisionNumber> :=
 TDFA<dfa.decisionNumber>.Create(Self<@debugAddition()>);}; separator="\n">
 <cyclicDFAs: {dfa | <if(dfa.specialStateSTs)>FDFA<dfa.decisionNumber>.SpecialStateTransitionHandler :=
 DFA<dfa.decisionNumber>_SpecialStateTransition;<endif>}; separator="\n">
end;

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>
end.>>

lexerRuleDeclaration(rule) ::= <<
procedure m<rule.ruleName>(<rule.ruleDescriptor.parameterScope:parameterScope(scope=rule)>);<n>
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 *
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
function T<grammar.recognizerName>.NextToken: IToken;
var
 M: Integer;
begin
 while (True) do
 begin
 if (Input.LA(1) = Integer(cscEOF)) then
 Exit(TToken.EOF_TOKEN);

 State.Token := nil;
 State.Channel := TToken.DEFAULT_CHANNEL;
 State.TokenStartCharIndex := Input.Index;
 State.TokenStartCharPositionInLine := Input.CharPositionInLine;
 State.TokenStartLine := Input.Line;
 State.Text := "";
 try
 M := Input.Mark();
 State.Backtracking := 1; <! means we won't throw slow exception !>
 State.Failed := False;

```

```

 mTokens();
 State.Backtracking := 0;
<!
 mTokens backtracks with synpred at backtracking==2
 and we set the synpredgate to allow actions at level 1.
!>
 if (State.Failed) then
 begin
 Input.Rewind(M);
 Input.Consume; <! // advance one char and try again !>
 end
 else
 begin
 Emit;
 Exit(State.Token);
 end;
except
 on RE: ERecognitionException do
 begin
 // shouldn't happen in backtracking mode, but...
 ReportError(RE);
 Recover(RE);
 end;
end;
end;
end;

function T<grammar.recognizerName>.AlreadyParsedRule(const Input: IIntStream;
const RuleIndex: Integer): Boolean;
begin
 if (State.Backtracking > 1) then
 Result := inherited AlreadyParsedRule(Input, RuleIndex)
 else
 Result := False;
 end;
end;

procedure T<grammar.recognizerName>.Memoize(const Input: IIntStream; const RuleIndex,
RuleStartIndex: Integer);
begin
 if (State.Backtracking > 1) then
 inherited Memoize(Input, RuleIndex, RuleStartIndex);
 end;
end;

>>

filteringActionGate() ::= "(State.Backtracking = 1)"

/** How to generate a parser */

```

```

genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass, filterMode,
 ASTLabelType="ANTLRInterface", labelType, members, rewriteElementType) ::= <<
type
<rules: {r | <genericParserRuleReturnType(rule=r, ruleDescriptor=r.ruleDescriptor)>>
I<grammar.recognizerName> = interface(I<@superClassName><superClass><@end>)
 <rules: {r | <genericParserRuleInterface(rule=r, ruleDescriptor=r.ruleDescriptor)>>
end;

T<grammar.recognizerName> = class(T<@superClassName><superClass><@end>,
I<grammar.recognizerName>)
<if(grammar.grammarIsRoot)>
public
 const
 TOKEN_NAMES: array [0..<length(tokenNames)>+3] of String = (
 '\<invalid>',
 '\<EOR>',
 '\<DOWN>',
 '\<UP>',
 <tokenNames; separator=",\n">);<\n>
<endif>
public
 const
 <tokens: {<it.name> = <it.type>;}; separator="\n">
public
 // delegates
 <grammar.delegates: {g|<g.delegateName(): I<superClass>; {<g.recognizerName>}}; separator="\n">
public
 // delegators
 <grammar.delegators: {g|<g.delegateName(): Pointer; {<g.recognizerName>}}; separator="\n">
 <last(grammar.delegators): {g|gParent: Pointer; {<g.recognizerName>}}>

 <scopes: {<if(it.isDynamicGlobalScope)><globalAttributeScopeDeclaration(scope=it)><endif>}>
<@members>
 <! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>
public
 constructor Create(const AInput: <inputStreamType><grammar.delegators: {g}; const A<g.delegateName():
IBaseRecognizer{<g.recognizerName>}}>); overload;
 constructor Create(const AInput: <inputStreamType>; const AState:
IRecognizerSharedState<grammar.delegators: {g}; const A<g.delegateName():
IBaseRecognizer{<g.recognizerName>}}>); overload;
<@end>
protected
 { IBaseRecognizer }
 function GetTokenNames: TStringArray; override;
 function GetGrammarFileName: String; override;
strict private
 <actions.(actionScope).memberDeclarations>

```

```

<rules: {r | <genericParserRuleDeclaration(rule=r, ruleDescriptor=r.ruleDescriptor)>}>

<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
// Delegated rules
<grammar.delegatedRules:{ruleDescriptor| <delegatedRuleDeclaration(ruleDescriptor)>}>

<synpreds:{p | <synpredDeclaration(p)>}; separator="\n">
<cyclicDFAs:cyclicDFADeclaration()>
strict private
 FException: ERecognitionException;
 FLA: array [0..<grammar.numberofDecisions>, 0..255] of Integer;
 FCnt: array [0..<grammar.numberofDecisions>] of Byte;
 procedure InitializeCyclicDFAs;
<if(bitsets)>
public
 class var
 <bitsets:bitsetDecl(name={ FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>})>
public
 class procedure InitializeBitsets; static;<\n>
<endif>
end;

implementation

uses
 <grammar.delegates: {g|<g.recognizerName>,}; separator="\n">
 <grammar.delegators: {g|<g.recognizerName>,}; separator="\n">
 <actions.(actionScope).usesImplementation>
 SysUtils,
 StrUtils,
 Math;

{ T<grammar.recognizerName> }

constructor T<grammar.recognizerName>.Create(const AInput: <inputStreamType><grammar.delegators:{g|; const
A<g:delegateName(): IBaseRecognizer{<g.recognizerName>} }>);
begin
 Create(AInput, TRecognizerSharedState.Create<grammar.delegators:{g|, A<g:delegateName()>}>);
end;

constructor T<grammar.recognizerName>.Create(const AInput: <inputStreamType>;
const AState: IRecognizerSharedState<grammar.delegators:{g|; const A<g:delegateName()>};
IBaseRecognizer{<g.recognizerName>} }>);
begin
 inherited Create(AInput, AState);
<@membersConstructor>
<@end>

```

```

<parserCtorBody()>
<grammar.directDelegates:{g|<g.delegateName()> := T<g.recognizerName>.Create(Input,
State<trunc(g.delegators):{p| <p.delegateName()>}>, Self)}; separator="\n">
<grammar.indirectDelegates:{g | <g.delegateName()> := <g.delegator.delegateName()>.<g.delegateName()>;};
separator="\n">
<last(grammar.delegators):{g|gParent := Pointer(A<g.delegateName()>)}>
<rules: {r | <ruleAttributeScopeInit(scope=r.ruleDescriptor.ruleScope)>}>
<scopes:{ <if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
<actions.(actionScope).memberInitializations>
end;
<actions.(actionScope).memberImplementations>

<grammar.delegatedRules:{ruleDescriptor| <delegatedRuleImplementation(ruleDescriptor)>} separator="\n">
procedure T<grammar.recognizerName>.InitializeCyclicDFAs;
begin
<cyclicDFAs:{ dfa | FDFA<dfa.decisionNumber> := TDFA<dfa.decisionNumber>.Create(Self)}; separator="\n">
<cyclicDFAs:{ dfa | <if(dfa.specialStateSTs)>FDFA<dfa.decisionNumber>.SpecialStateTransitionHandler :=
DFA<dfa.decisionNumber>_SpecialStateTransition;<endif>} separator="\n">
end;

<if(bitsets)>
class procedure T<grammar.recognizerName>.InitializeBitsets;
begin
<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>
end;
<endif>

<@membersImplementation>
<@end>

function T<grammar.recognizerName>.GetTokenNames: TStringArray;
var
I: Integer;
begin
SetLength(Result,Length(T<grammar.composite.rootGrammar.recognizerName>.TOKEN_NAMES));
for I := 0 to Length(T<grammar.composite.rootGrammar.recognizerName>.TOKEN_NAMES) - 1 do
Result[I] := T<grammar.composite.rootGrammar.recognizerName>.TOKEN_NAMES[I];
end;

function T<grammar.recognizerName>.GetGrammarFileName: String;
begin
Result := '<fileName>';
end;

<rules; separator="\n\n">
<synpreds:{p | <synpred(p)>}>

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

```



```

<if(bitsets)>
initialization
 T<grammar.recognizerName>.InitializeBitsets;<\n>
<endif>
end.>>

delegatedRuleDeclaration(ruleDescriptor) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
function <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):
I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<returnType()>;<\n>
<else>
procedure <ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>);<\n>
<endif>
<endif>
>>

delegatedRuleImplementation(ruleDescriptor) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
function
T<grammar.recognizerName>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
): I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function
T<grammar.recognizerName>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
): <returnType()>;<\n>
<else>
procedure
T<grammar.recognizerName>.<ruleDescriptor.name>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>
);<\n>
<endif>
<endif>
begin
<if(ruleDescriptor.hasReturnValue)>Result :=<endif>
T<ruleDescriptor.grammar.recognizerName>(<ruleDescriptor.grammar:delegateName()>.Implementor).<ruleDescriptor.name>(<ruleDescriptor.parameterScope.attributes: { a|<a.name> }; separator="," ">);
end;

>>

parserCtorBody() ::= <<
InitializeCyclicDFAs;
<if(memoize)>
<if(grammar.grammarIsRoot)>

```

```

State.RuleMemoCount := <length(grammar.allImportedRules)>+1;<\n><! index from 1..n !>
<endif>
<endif>
<grammar.delegators: {g|<g:delegateName()> := Pointer(A<g:delegateName()>);}; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType, superClass="Parser",
labelType="Token", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ITokenStream", rewriteElementType="Token", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="object", superClass="TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start "<ruleName>"
procedure
T<grammar.recognizerName>.<ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>)
;
var
Alt: array [0..<grammar.numberOfDecisions>] of Integer;
<ruleLabelDefVars()>
begin
<ruleLabelDefs()>
<if(trace)>
TraceIn('<ruleName>_fragment', <ruleDescriptor.index>);
try
<block>
finally
TraceOut('<ruleName>_fragment', <ruleDescriptor.index>);
end;
<else>
<block>
<endif>

```

```

end;
// $ANTLR end "<ruleName>"
>>

synpredDecls(name) ::= <<
SynPredPointer <name>;<\n>
>>

synpred(name) ::= <<

function T<grammar.recognizerName>.<name>: Boolean;
var
 Start: Integer;
 Success: Boolean;
begin
 State.Backtracking := State.Backtracking + 1;
 <@start(>
 Start := Input.Mark;
 try
 <name>_fragment(); // can never throw exception
 except
 on RE: ERecognitionException do
 WriteLn('Impossible: ' + RE.ToString);
 end;
 Success := not State.Failed;
 Input.Rewind(Start);
 <@stop(>
 State.Backtracking := State.Backtracking - 1;
 State.Failed := False;
 Result := Success;
end;<\n>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

lexerSynpredDeclaration(name) ::= <<
function <name>: Boolean;
procedure <name>_fragment;
>>

synpredDeclaration(name) ::= <<
function <name>: Boolean;
procedure <name>_fragment;
>>

ruleMemoization(name) ::= <<

```

```

<if(memoize)>
if ((State.Backtracking > 0) and AlreadyParsedRule(Input, <ruleDescriptor.index>)) then
 Exit(<ruleReturnValue(>);
<endif>
>>

```

```

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)><\n>if (State.Failed) then Exit(<ruleReturnValue(>);<\n><endif>
>>

```

```

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if (State.Backtracking > 0) then
begin
 State.Failed := True;
 Exit(<ruleReturnValue(>);
end;<endif>
>>

```

```

genericParserRuleDeclaration(rule, ruleDescriptor) ::= <<
<if(ruleDescriptor.isSynPred)>
<else>
<ruleAttributeScopeDeclaration(scope=ruleDescriptor.ruleScope)>
<returnScopeDeclaration(scope=ruleDescriptor.returnScope)>
public
<if(ruleDescriptor.hasMultipleReturnValues)>
 function <rule.ruleName>: I<returnType(>);<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
 function <rule.ruleName>: <returnType(>);<\n>
<else>
 procedure <rule.ruleName>;<\n>
<endif>
<endif>
<endif>
>>

```

```

genericParserRuleInterface(rule, ruleDescriptor) ::= <<
<if(ruleDescriptor.isSynPred)>
<else>
<if(ruleDescriptor.hasMultipleReturnValues)>
function <rule.ruleName>: I<returnType(>);<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function <rule.ruleName>: <returnType(>);<\n>
<else>
 procedure <rule.ruleName>;<\n>

```

```

<endif>
<endif>
<endif>
>>

genericParserRuleReturnType(rule, ruleDescriptor) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(ruleDescriptor.isSynPred)>
<else>
I<returnType()> = interface(I<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope)
end;<\n>
<endif>
<endif>
>>

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
(* <fileName>:<description> *)
<if(ruleDescriptor.hasMultipleReturnValues)>
function T<grammar.recognizerName>.<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):
I<returnType()>;
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
function T<grammar.recognizerName>.<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>):
<returnType()>;
<else>
procedure
T<grammar.recognizerName>.<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>);
<endif>
<endif>

var
<ruleDescriptor.actions.vars>
Locals: TLocalStorage;
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal: I<returnType()>;<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
RetVal: <returnType()>;<\n>
<else>
<endif>
<endif>

```

```

Alt: array [0..<grammar.numberOfDecisions>] of Integer;
<ruleDeclarationVars()>
<ruleLabelDefVars()>
begin
Locals.Initialize;
try
 <if(trace)>TraceIn('<ruleName>', <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleDescriptor.actions.init>
 <@preamble()>
 try
 try
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>
 <if(exceptions)>
 <exceptions: {e|<catch(decl=e.decl,action=e.action)><\n}>}
 <else>
 <if(!emptyRule)>
 <if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
 <else>
 except
 on RE: ERecognitionException do
 begin
 ReportError(RE);
 Recover(Input,RE);
 <@setErrorReturnValue()>
 end;<\n>
 <endif>
 <endif>
 <endif>
 end;
 finally
 <if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>
 end;
 <@postamble()>
finally
 Locals.Finalize;
end;
Exit(<ruleReturnValue()>);
end;

```

```

// $ANTLR end "<ruleName>"
>>

catch(decl,action) ::= <<
catch (<e.decl>)
{
 <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal := T<returnType>.Create;
RetVal.Start := Input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.name> := <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_StartIndex := Input.Index();
<endif>
>>

ruleDeclarationVars() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.name>: <a.type>;
}>
<endif>
<if(memoize)>
<ruleDescriptor.name>_StartIndex: Integer;
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: {<it>Stack.Push(T<it>Scope.Create);}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>Stack.Push(T<it.name>Scope.Create);}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: {<it>Stack.Pop();}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>Stack.Pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]: {<it.label.text> := nil;}; separator="\n">

```

```

<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]:{list_<it.label.text> := nil;}; separator="\n">
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels:{ll<ll.label.text> := nil;}; separator="\n">
>>

ruleLabelDefVars() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]:{<it.label.text>: I<labelType>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]:{list_<it.label.text>: IList<IANTLRInterface>;};
separator="\n">
<ruleDescriptor.ruleLabels:ruleLabelDefVar(label=it); separator="\n">
<ruleDescriptor.ruleListLabels:{ll<ll.label.text>: <ruleLabelType(referencedRule=ll.referencedRule)>;};
separator="\n">
>>

lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<it.label.text> := nil;}; separator="\n"
>
<ruleDescriptor.charLabels:{int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {List_<it.label.text> := nil;}; separator="\n"
>
>>

lexerRuleLabelDefDeclarations() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleLabels]
: {<it.label.text>: I<labelType>;}; separator="\n"
>
<ruleDescriptor.charLabels:{int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleListLabels]
: {List_<it.label.text>: IList;}; separator="\n"
>
>>

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>

```



```

RetVal
<endif>
<else>
<! nil !>
<endif>
<endif>
>>

ruleCleanup() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
RetVal.Stop := Input.LT(-1);
<endif>
<endif>
>>

memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (State.Backtracking > 0) then
Memoize(Input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex);
<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
<ruleDescriptor.parameterScope>
procedure
T<grammar.recognizerName>.m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>);
var
<ruleDescriptor.actions.vars>
Locals: TLocalStorage;
TokenType, Channel: Integer;
Alt: array [0..<grammar.numberofDecisions>] of Integer;
<lexerRuleLabelDefDeclarations(>
begin
Locals.Initialize;
try
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<if(trace)>TraceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
try
<if(nakedBlock)>

```

```

 <ruleMemoization(name=ruleName)>
 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block><\n>
<else>
 TokenType := <ruleName>;
 Channel := DEFAULT_TOKEN_CHANNEL;
 <ruleMemoization(name=ruleName)>
 <lexerRuleLabelDefs()>
 <ruleDescriptor.actions.init>
 <block>
 <ruleCleanup()>
 State.TokenType := TokenType;
 State.Channel := Channel;
 <(ruleDescriptor.actions.after):execAction()>
<endif>
 finally
 <if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeCleanup()>
 <memoize()>
 end;
 finally
 Locals.Finalize;
 end;
end;
// $ANTLR end "<ruleName>"
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
procedure T<grammar.recognizerName>.mTokens;
var
 Alt: array [0..<grammar.numberOfDecisions>] of Integer;
begin
 <block>
end;

procedure T<grammar.recognizerName>.DoTokens;
begin
 mTokens;
end;
>>

// S U B R U L E S

/** A (...) subrule with multiple alternatives */

```

```

block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
(* <fileName>:<description> *)
Alt[<decisionNumber>] := <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
<@prebranch()>
case Alt[<decisionNumber>] of
<alts:altSwitchCase()>
end;
<@postbranch()>
>>

/** A rule block with multiple alternatives */
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
(* <fileName>:<description> *)
Alt[<decisionNumber>] := <maxAlt>;
<decls>
<@predecision()>
<decision>
<@postdecision()>
case Alt[<decisionNumber>] of
<alts:altSwitchCase()>
end;
>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
(* <fileName>:<description> *)
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A special case of a (...) subrule with a single alternative */
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
(* <fileName>:<description> *)
<decls>
<@prealt()>
<alts>
<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
(* <fileName>:<description> *)

```

```

FCnt[<decisionNumber>] := 0;
<decls>
<@preloop()>
while (True) do
begin
Alt[<decisionNumber>] := <maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
case Alt[<decisionNumber>] of
 <alts:altSwitchCase()>
else
 begin
 if (FCnt[<decisionNumber>] >= 1) then
 Break;
 <ruleBacktrackFailure()>
 raise EEarlyExitException.Create(<decisionNumber>, Input);
 <@earlyExitException()>
 end;
end;
Inc(FCnt[<decisionNumber>]);
end;
<@postloop()>
>>

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

*/\*\* A (..)\* block with 1 or more alternatives \*/*

```

closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
(* <fileName>:<description> *)
<decls>
<@preloop()>
while (True) do
begin
Alt[<decisionNumber>] := <maxAlt>;
<@predecision()>
<decision>
<@postdecision()>
case Alt[<decisionNumber>] of
 <alts:altSwitchCase()>
else
 Break;
end;
end;
<@postloop()>
>>

```

```

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
<i>:
 <@prealt()>
 <it><\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<
(* <fileName>:<description> *)
begin
 <@declarations()>
 <elements:element()>
 <rew>
 <@cleanup()>
end;
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label> := <endif>Match(Input, <token>,
FOLLOW_<token>_in_<ruleName><elementIndex><if(label)> as
I<labelType><endif>;<\n><checkRuleBacktrackFailure()>

```

>>

```
/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>
```

```
listLabel(label,elem) ::= <<
if (list_<label> = nil) then list_<label> := TList<<IANTLRInterface>>.Create;
list_<label>.Add(<elem>);<\n>
>>
```

```
/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> := Input.LA(1);<\n>
<endif>
Match(<char>); <checkRuleBacktrackFailure()>
>>
```

```
/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> := Input.LA(1);<\n>
<endif>
MatchRange(<a>,); <checkRuleBacktrackFailure()>
>>
```

```
/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label> := Input.LA(1);<\n>
<else>
<label> := Input.LT(1) as I<labelType>;<\n>
<endif>
<endif>
if (<s>) then
begin
Input.Consume;
<postmatchCode>
<if(!LEXER)>
State.ErrorRecovery := False;<endif>
<if(backtracking)>State.Failed := False;<endif>
end
else
begin
```

```

<ruleBacktrackFailure()>
FException := EMismatchedSetException.Create(nil, Input);
<@mismatchedSetException()>
<if(LEXER)>
Recover(FException);
raise FException;<\n>
<else>
raise FException;
<! use following code to make it recover inline; remove throw mse;
RecoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
!>
<endif>
end;<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
Locals.AsInteger['<label>Start'] := CharIndex;
Match(<string>); <checkRuleBacktrackFailure()>
<label> := TCommonToken.Create(Input, TToken.INVALID_TOKEN_TYPE, TToken.DEFAULT_CHANNEL,
Locals.AsInteger['<label>Start'], CharIndex-1);
<else>
Match(<string>); <checkRuleBacktrackFailure()>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label> := Input.LT(1) as I<labelType>;<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<

```

```

<if(label)>
<label> := Input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)>
<label> := <if(scope)><scope:delegateName()>.<endif><rule.name><(args; separator=", ">);<\n>
<else>
<if(scope)>T<scope.recognizerName>(IANTLRObject(<scope:delegateName()>).Implementor).<endif><rule.name>
><(args; separator=", ">);<\n>
<endif>
State.FollowingStackPointer := State.FollowingStackPointer - 1;
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
Locals.AsInteger['<label>Start<elementIndex>'] := CharIndex;
<if(scope)><scope:delegateName()>.<endif>m<rule.name><(args; separator=", ">);
<checkRuleBacktrackFailure()>
<label> := TCommonToken.Create(Input, TToken.INVALID_TOKEN_TYPE, TToken.DEFAULT_CHANNEL,
Locals.AsInteger['<label>Start<elementIndex>'], CharIndex - 1);

```



```

<else>
<if(scope)><scope.delegateName().Implementor as T<scope.recognizerName>>.endof>m<rule.name><args;
separator=", ">; <checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
Locals.AsInteger['<label>Start<elementIndex>'] := CharIndex;
Match(EOF); <checkRuleBacktrackFailure()>
Locals['<label>'] := TCommonToken.Create(Input, EOF, TToken.DEFAULT_CHANNEL,
Locals.AsInteger['<label>Start<elementIndex>'], CharIndex-1);
<else>
Match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (Input.LA(1) = TToken.DOWN) then
begin
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil); <checkRuleBacktrackFailure()>
end;
<else>
Match(Input, TToken.DOWN, nil); <checkRuleBacktrackFailure()>
<children:element()>
Match(Input, TToken.UP, nil); <n><checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if (not (<evalPredicate(...)>)) then

```

```

begin
 <ruleBacktrackFailure()>
 raise EFailedPredicateException.Create(Input, '<ruleName>', '<description>');
end;<\n>
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(<k>);<\n>
<edges; separator="\nelse ">
else
begin
<if(eotPredictsAlt)>
 Alt[<decisionNumber>] := <eotPredictsAlt>;<\n>
<else>
 <ruleBacktrackFailure()>
 raise ENoViableAltException.Create('<description>', <decisionNumber>, <stateNumber>, Input);<\n>
<endif>
end;
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(<k>);<\n>
<edges; separator="\nelse ">;
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(<k>);
<edges; separator="\nelse ">;<\n>
<if(eotPredictsAlt)>
<if(!edges)>
 Alt[<decisionNumber>] := <eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
begin
 Alt[<decisionNumber>] := <eotPredictsAlt>;

```

```

end;<\n>
<endif>
<endif>
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "Alt[<decisionNumber>] := <alt>";

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr>)<if(predicates)> and (<predicates>)<endif>) then
begin
<targetState>
end <! no ; here !>
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
case Input.LA(<k>) of
<edges; separator="\n">
else
begin
<if(eotPredictsAlt)>
Alt[<decisionNumber>] := <eotPredictsAlt>;
<else>
<ruleBacktrackFailure()>
<@noViableAltException()>
raise ENoViableAltException.Create('<description>', <decisionNumber>, <stateNumber>, Input);<\n>
<endif>
end;
end;<\n>
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
case Input.LA(<k>) of
<edges; separator="\n">
end;<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
case Input.LA(<k>) of

```

```

<edges; separator="\n"><\n>
<if(eotPredictsAlt)>
else
Alt[<decisionNumber>] := <eotPredictsAlt>;<\n>
<endif>
end;<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{<it>}; separator=",\n">:
begin
<targetState>
end;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
Alt[<decisionNumber>] := FDFA<decisionNumber>.Predict(Input);
>>

/* Dump DFA tables.
 */
cyclicDFADeclaration(dfa) ::= <<
strict protected
type
T DFA<dfa.decisionNumber> = class(TDFA)
protected
{ IDFA }
function Description: String; override;
public
constructor Create(const ARecognizer: IBaseRecognizer);
end;
var
FDFA<dfa.decisionNumber>: IDFA;
<if(dfa.specialStateSTs)>
strict protected
function DFA<dfa.decisionNumber>_SpecialStateTransition(const DFA: IDFA; S: Integer;
const AInput: IIntStream): Integer;<endif>
>>

cyclicDFA(dfa) ::= <<
{ T<grammar.recognizerName>.T DFA<dfa.decisionNumber> }

```

```

constructor T<grammar.recognizerName>.TDFA<dfa.decisionNumber>.Create(const ARecognizer:
IBaseRecognizer);
const
DFA<dfa.decisionNumber>_EOT = '<dfa.javaCompressedEOT; wrap=""+\n "'>;
DFA<dfa.decisionNumber>_EOF = '<dfa.javaCompressedEOF; wrap=""+\n "'>;
DFA<dfa.decisionNumber>_MIN = '<dfa.javaCompressedMin; wrap=""+\n "'>;
DFA<dfa.decisionNumber>_MAX = '<dfa.javaCompressedMax; wrap=""+\n "'>;
DFA<dfa.decisionNumber>_ACCEPT = '<dfa.javaCompressedAccept; wrap=""+\n "'>;
DFA<dfa.decisionNumber>_SPECIAL = '<dfa.javaCompressedSpecial; wrap=""+\n "'>;
DFA<dfa.decisionNumber>_TRANSITION: array [0..<length(dfa.javaCompressedTransition)>-1] of String = (
 <dfa.javaCompressedTransition:{s|<s; wrap=""+\n"'>}; separator=",\n">);
begin
inherited Create;
Recognizer := ARecognizer;
DecisionNumber := <dfa.decisionNumber>;
EOT := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_EOT);
EOF := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_EOF);
Min := TDFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_MIN);
Max := TDFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_MAX);
Accept := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_ACCEPT);
Special := TDFA.UnpackEncodedString(DFA<dfa.decisionNumber>_SPECIAL);
Transition := TDFA.UnpackEncodedStringArray(DFA<dfa.decisionNumber>_TRANSITION);
end;

function T<grammar.recognizerName>.TDFA<dfa.decisionNumber>.Description: String;
begin
 Result := '<dfa.description>';
end;<\n>
<if(dfa.specialStateSTs)>
function T<grammar.recognizerName>.DFA<dfa.decisionNumber>_SpecialStateTransition(const DFA: IDFA; S:
Integer;
const AInput: IIntStream): Integer;
var
 Locals: TLocalStorage;
 <if(LEXER)>
 Input: IIntStream;
 <endif>
 <if(PARSER)>
 Input: ITokenStream;
 <endif>
 <if(TREE_PARSER)>
 Input: ITreeNodeStream;
 <endif>
 _S: Integer;
 NVAE: ENoViableAltException;
begin
 Result := -1;
 Locals.Initialize;

```

```

try
 <if(LEXER)>
 Input := AInput;
 <endif>
 <if(PARSER)>
 Input := AInput as ITokenStream;
 <endif>
 <if(TREE_PARSER)>
 Input := AInput as ITreeNodeStream;
 <endif>
 _S := S;
 case S of
 <dfa.specialStateSTs:{state | <i0>: begin<! compressed special state numbers 0..n-1 !>
 <state> <\n> end;}; separator="\n">
 end;
 <if(backtracking)>
 if (State.Backtracking > 0) then
 begin
 State.Failed := True;
 Exit(-1);
 end;<\n>
 <endif>
 NVAE := ENoViableAltException.Create(DFA.Description, <dfa.decisionNumber>, _S, Input);
 DFA.Error(NVAE);
 raise NVAE;
 finally
 Locals.Finalize;
 end;
end;<\n>
<endif>
>>

/** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
FLA[<decisionNumber>,<stateNumber>] := Input.LA(1);<\n>
<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
Locals.AsInteger['index<decisionNumber>_<stateNumber>'] := Input.Index;
Input.Rewind;<\n>
<endif>
S := -1;
<edges; separator="\nelse ">;
<if(semPredState)> <! return input cursor to state before we rewound !>
Input.Seek(Locals.AsInteger['index<decisionNumber>_<stateNumber>']);<\n>
<endif>
if (S >= 0) then
 Exit(S);

```

```

>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr><if(predicates)> and (<predicates><endif>) then
 S := <targetStateNumber>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
S := <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "((<left>) and (<right>))"

orPredicates(operands) ::= "((<first(operands)><rest(operands):{o | or (<o>)}>))"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "FLA[<decisionNumber>,<stateNumber>] = <atomAsInt>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "Input.LA(<k>) = <atomAsInt>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
((FLA[<decisionNumber>,<stateNumber>] \>= <lowerAsInt>) and (FLA[<decisionNumber>,<stateNumber>] \<=
<upperAsInt>))
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(Input.LA(<k>) \>=
<lowerAsInt>) and (Input.LA(<k>) \<= <upperAsInt>)"

setTest(ranges) ::= "<ranges; separator=\|) or (\|>"

// A T T R I B U T E S

```

```

globalAttributeScope(scope) ::= <<
<scope.name>Stack := TStackList\<I<scope.name>Scope>|.Create;<\n>
<endif>
>>

```

```

globalAttributeScopeDeclaration(scope) ::= <<
<if(scope.attributes)>
strict protected
type
 I<scope.name>Scope = interface(IANTLRObject)
 end;
 T<scope.name>Scope = class(TANTLRObject, I<scope.name>Scope)
 protected
 <scope.attributes:{<it.name>: <it.type>;}; separator="\n">
 end;
strict protected
<scope.name>Stack: IStackList\<I<scope.name>Scope>;
<endif>
>>

```

```

ruleAttributeScopeDeclaration(scope) ::= <<
<if(scope.attributes)>
strict protected
type
 I<scope.name>Scope = interface(IANTLRObject)
 end;
 T<scope.name>Scope = class(TANTLRObject, I<scope.name>Scope)
 protected
 <scope.attributes:{<it.name>: <it.type>;}; separator="\n">
 end;
strict protected
<scope.name>Stack: IStackList\<I<scope.name>Scope>;
<endif>
>>

```

```

ruleAttributeScope(scope) ::= <<
<! protected Stack <scope.name>Stack = new Stack();<\n> !>
>>

```

```

ruleAttributeScopeInit(scope) ::= <<
<if(scope)>
<scope.name>Stack := TStackList\<I<scope.name>Scope>|.Create;<\n>
<endif>
>>

```

```

returnStructName() ::= "<it.name>_return"

```



```

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor:returnStructName()>
<! I<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope !>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
<! Pointer/void !>
<endif>
<endif>
>>

/** Generate the C# type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
I<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<csharpTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<label.label.text> := <initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

ruleLabelDefVar(label) ::= <<
<label.label.text>: <ruleLabelType(referencedRule=label.referencedRule)>;
>>

```

```

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
{ T<ruleDescriptor:returnStructName()> }

<scope.attributes:{public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>
<endif>
>>

returnScopeDeclaration(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public
type
T<ruleDescriptor:returnStructName()> =
class(T<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope, I<ruleDescriptor:returnStructName()>)
<scope.attributes:{public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>
end;
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>;}; separator="," >
>>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> := <expr>;"

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
(<scope>Stack[<scope>Stack.Count-<negIndex>-1] as T<scope>Scope).<attr.name>
<else>
<if(index)>
(<scope>Stack[<index>] as T<scope>Scope).<attr.name>
((<scope>_scope)<scope>_stack[<index>]).<attr.name>
<else>
(<scope>Stack.Peek.Implementor as T<scope>Scope).<attr.name>
<endif>
<endif>
>>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
(<scope>Stack[<scope>Stack.Count-<negIndex>-1] as T<scope>Scope).<attr.name> := <expr>;<\n>

```

```

<else>
<if(index)>
(<scope>Stack[<index>] as T<scope>Scope).<attr.name> := <expr>;<n>
<else>
(<scope>Stack.Peek.Implementor as T<scope>Scope).<attr.name> := <expr>;<n>
<endif>
<endif>
>>

```

```

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>Stack"

```

```

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
(IfThen(Assigned(<scope>),Def(<scope>).<attr.name>,<initValue(attr.type)>))
<else>
<scope>
<endif>
>>

```

```

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal.<attr.name>
<else>
<attr.name>
<endif>
>>

```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
RetVal.<attr.name> := <expr>;
<else>
<attr.name> := <expr>;
<endif>
>>

```

```

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

```

```

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

```

```

// not sure the next are the right approach

```

```

tokenLabelPropertyRef_text(scope,attr) ::= "(Def(<scope>).Text)"
tokenLabelPropertyRef_type(scope,attr) ::= "(Def(<scope>).TokenType)"
tokenLabelPropertyRef_line(scope,attr) ::= "(Def(<scope>).Line)"
tokenLabelPropertyRef_pos(scope,attr) ::= "(Def(<scope>).CharPositionInLine)"
tokenLabelPropertyRef_channel(scope,attr) ::= "(Def(<scope>).Channel)"
tokenLabelPropertyRef_index(scope,attr) ::= "(Def(<scope>).TokenIndex)"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(StrToIntDef(Def(<scope>).Text,0))"

ruleLabelPropertyRef_start(scope,attr) ::= "(IfThen(Assigned(<scope>), Def(<scope>).Start, nil) as I<labelType>)"
ruleLabelPropertyRef_stop(scope,attr) ::= "(Def(<scope>).Stop as I<labelType>)"
ruleLabelPropertyRef_tree(scope,attr) ::= "(Def(Def(<scope>).Tree as I<ASTLabelType>))"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
IfThen(Assigned(<scope>), Input.TokenStream.ToString(
 Input.TreeAdaptor.GetTokenStartIndex(Def(<scope>).Start),
 Input.TreeAdaptor.GetTokenStopIndex(Def(<scope>).Start)), ")
<else>
IfThen(Assigned(<scope>), Input.ToString(
 (Def(<scope>).Start) as IToken,(Def(<scope>).Stop) as IToken), ")
<endif>
>>
ruleLabelPropertyRef_st(scope,attr) ::= "((<scope> != null) ? <scope>.ST : null)"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "(Def(<scope>).TokenType)"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "(Def(<scope>).Line)"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "(IfThen(Assigned(<scope>),Def(<scope>).CharPositionInLine,-1))"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "(Def(<scope>).Channel)"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "(Def(<scope>).TokenIndex)"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "(Def(<scope>).Text)"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "(StrToIntDef(Def(<scope>).Text,0))"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "(RetVal.Start as I<labelType>)"
rulePropertyRef_stop(scope,attr) ::= "(RetVal.Stop as I<labelType>)"
rulePropertyRef_tree(scope,attr) ::= "(RetVal.Tree as I<ASTLabelType>)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
Input.TokenStream.ToString(
 Input.TreeAdaptor.GetTokenStartIndex(RetVal.Start),
 Input.TreeAdaptor.GetTokenStopIndex(RetVal.Start))
<else>
Input.ToString(RetVal.Start as IToken,Input.LT(-1))
<endif>

```

```

>>
rulePropertyRef_st(scope,attr) ::= "RetVal.ST"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "TokenType"
lexerRulePropertyRef_line(scope,attr) ::= "State.TokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "State.TokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "Channel"
lexerRulePropertyRef_start(scope,attr) ::= "State.TokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(CharIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "StrToInt(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "RetVal.Tree := <expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "RetVal.ST := <expr>;"

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
<if(actions.(actionScope).synpredgate)>
if (<actions.(actionScope).synpredgate>) then
begin
 <action>
end;
<else>
if (State.Backtracking = 0) then
begin
 <action>
end;<\n>
<endif>
<else>
<action>
<endif>
>>

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
<name> := TBitSet.Create([<words64: {<it>}separator=",">]);<\n>
>>

```

```
bitsetDecl(name) ::= <<
<name>: IBitSet;<\n>
>>
```

```
codeFileExtension() ::= ".pas"
```

```
true() ::= "True"
false() ::= "False"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Delphi/Delphi.stg
```

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```
/*
```

```
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```

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```
*/
```

```
/** Templates for building ASTs during normal parsing.
```

```
*
```

```
* Deal with many combinations. Dimensions are:
```

```

* Auto build or rewrite
* no label, label, list label (label/no-label handled together)
* child, root
* token, set, rule, wildcard
*
* The situation is not too bad as rewrite (->) usage makes ^ and !
* invalid. There is no huge explosion of combinations.
*/
group ASTParser;

@rule.setErrorReturnValue() ::= <<
retval.tree = (<ASTLabelType>)(ADAPTOR->errorNode(ADAPTOR, INPUT, retval.start, LT(-1), EXCEPTION));
>>

// TOKEN AST STUFF

/** ID and output=AST */
tokenRef(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>));
ADAPTOR->addChild(ADAPTOR, root_0, <label>_tree);
<if(backtracking)>}<endif>
>>

/** ID! and output=AST (same as plain tokenRef) */
tokenRefBang(token,label,elementIndex) ::= "<super.tokenRef(...)>"

/** ID^ and output=AST */
tokenRefRuleRoot(token,label,elementIndex,hetero) ::= <<
<super.tokenRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = <createNodeFromToken(...)>;
root_0 = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_0));
<if(backtracking)>}<endif>
>>

/** ids+=ID! and output=AST */
tokenRefBangAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<listLabel(elem=label,...)>
>>

/** label+=TOKEN when output=AST but not rewrite alt */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>

```

>>

```
/** Match label+=TOKEN^ when output=AST but not rewrite alt */
tokenRefRuleRootAndListLabel(token,label,hetero,elementIndex) ::= <<
<tokenRefRuleRoot(...)>
<listLabel(elem=label,...)>
>>
```

// SET AST

```
// the match set stuff is interesting in that it uses an argument list
// to pass code to the default matchSet; another possible way to alter
// inherited code. I don't use the region stuff because I need to pass
// different chunks depending on the operator. I don't like making
// the template name have the operator as the number of templates gets
// large but this is the most flexible--this is as opposed to having
// the code generator call matchSet then add root code or ruleroot code
// plus list label plus ... The combinations might require complicated
// rather than just added on code. Investigate that refactoring when
// I have more time.
```

```
matchSet(s,label,hetero,elementIndex,postmatchCode) ::= <<
<super.matchSet(..., postmatchCode={<if(backtracking)>if (<actions.(actionScope).synpredgate>)
<endif>ADAPTOR->addChild(ADAPTOR, root_0, <createNodeFromToken(...)>);}>
>>
```

```
matchRuleBlockSet(s,label,hetero,elementIndex,postmatchCode,treeLevel="0") ::= <<
<matchSet(...)>
>>
```

```
matchSetBang(s,label,elementIndex,postmatchCode) ::= "<super.matchSet(...)>"
```

```
// note there is no matchSetTrack because -> rewrites force sets to be
// plain old blocks of alts: (A|B|...|C)
```

```
matchSetRuleRoot(s,label,hetero,elementIndex,debug) ::= <<
<if(label)>
<label>=(<labelType>)LT(1);<\n>
<endif>
<super.matchSet(..., postmatchCode={<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_0
= (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <createNodeFromToken(...)>, root_0));}>
>>
```

// RULE REF AST

```
/** rule when output=AST */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
```



```

<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>ADAPTOR->addChild(ADAPTOR, root_0,
<label>.tree);
>>

/** rule! is same as normal rule ref */
ruleRefBang(rule,label,elementIndex,args,scope) ::= "<super.ruleRef(...)>"

/** rule^ */
ruleRefRuleRoot(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>root_0 = (<ASTLabelType>)(ADAPTOR-
>becomeRoot(ADAPTOR, <label>.tree, root_0));
>>

/** x+=rule when output=AST */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabelAST(...)>
>>

/** x+=rule! when output=AST is a rule ref with list addition */
ruleRefBangAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefBang(...)>
<listLabelAST(...)>
>>

/** x+=rule^ */
ruleRefRuleRootAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<listLabelAST(...)>
>>

// WILDCARD AST

wildcard(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>
<label>_tree = (<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>));
ADAPTOR->addChild(ADAPTOR, root_0, <label>_tree);
<if(backtracking)>}<endif>
>>

wildcardBang(label,elementIndex) ::= "<super.wildcard(...)>"

wildcardRuleRoot(label,elementIndex) ::= <<
<super.wildcard(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) {<endif>

```

```

<label>_tree = (<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>));
root_0 = (<ASTLabelType>)(ADAPTOR->becomeRoot(ADAPTOR, <label>_tree, root_0));
<if(backtracking)><endif>
>>

```

```

createNodeFromToken(label,hetero) ::= <<
<if(hetero)>
<hetero>New(<label>) <! new MethodNode(IDLabel) !>
<else>
(<ASTLabelType>)(ADAPTOR->create(ADAPTOR, <label>))
<endif>
>>

```

```

ruleCleanUp() ::= <<
<super.ruleCleanUp(...)>
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{<\n>
<endif>
<if(!ruleDescriptor.isSynPred)>
retval.stop = LT(-1);<\n>
<endif>
retval.tree = (<ASTLabelType>)(ADAPTOR->rulePostProcessing(ADAPTOR, root_0));
ADAPTOR->setTokenBoundaries(ADAPTOR, retval.tree, retval.start, retval.stop);
<ruleDescriptor.allTokenRefsInAltsWithRewrites
: {if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
: {if (stream_<it> != NULL) stream_<it>->free(stream_<it>);}; separator="\n">
<if(backtracking)>
}<\n>
<endif>
>>

```

Found in path(s):

```

* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/C/ASTParser.stg

```

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```

/*

```

```

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```

```

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```

```

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\*/

/\*

Template group file for the Objective C code generator.  
Heavily based on Java.stg

Written by Kay Roepke <kroepke(at)classdump.org>

This file is part of ANTLR and subject to the same license as ANTLR itself.

\*/

```
group ObjC implements ANTLRCore;
```

```
objcTypeInitMap ::= [
 "int": "0",
 "long": "0",
 "float": "0.0",
 "double": "0.0",
 "boolean": "false",
 "byte": "0",
 "short": "0",
 "char": "0",
 "id": "nil",
 default: "nil" // anything other than an atomic type
]
```

```
className() ::= "<name><! if(LEXER)>Lexer<else><if(TREE_PARSER)>Tree<endif>Parser<endif !>"
```

```
/** The overall file structure of a recognizer; stores methods for rules
```

```
* and cyclic DFAs plus support code.
```

```
*/
```

```
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
```

```

 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass,literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<@imports>
#import "<name><!if(LEXER)>Lexer<else><if(TREE_PARSER)>Tree<endif>Parser<endif!>.h"
<@end>

<docComment>
<recognizer>
>>

```

```

headerFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass,literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

```

```

<@imports>
#import \<Cocoa/Cocoa.h>
#import \<ANTLR/ANTLR.h>
<@end>

```

```

<actions.(actionScope).header>

```

```

<if(LEXER)>
<lexerHeaderFile(...)>
<endif>
<if(PARSER)>
<parserHeaderFile(...)>
<endif>
<if(TREE_PARSER)>
<treeParserHeaderFile(...)>
<endif>
>>

```

```

lexerHeaderFile() ::=
<<

```

```

<cyclicDFAs:cyclicDFAInterface(>

#pragma mark Rule return scopes start
<rules:{rule |
<rule:{ruleDescriptor | <returnScopeInterface(scope=ruleDescriptor.returnScope)>>
}>
#pragma mark Rule return scopes end

#pragma mark Tokens
<tokens:{#define <name>_<it.name> <it.type>}; separator="\n">

@interface <className()> : ANTLRLexer {
<cyclicDFAs:{dfa | <name>DFA<dfa.decisionNumber> *dfa<dfa.decisionNumber>;}; separator="\n">
<synpreds:{p | SEL <p>SyntacticPredicate;}; separator="\n">
<actions.lexer.ivars>
}

<actions.lexer.methodsdecl>

<rules:{rule |
- (<rule.ruleDescriptor:{ruleDescriptor|<returnType()>>})
<if(!rule.ruleDescriptor.isSynPred)>m<endif><rule.ruleName><if(rule.ruleDescriptor.parameterScope)><rule.ruleD
escriptor.parameterScope:parameterScope(scope=it)><endif>;
}>

@end
>>

lexer(grammar, name, tokens, scopes, rules, numRules, labelType="id<ANTLRToken> ",
 filterMode) ::= <<
<cyclicDFAs:cyclicDFA(>

/** As per Terence: No returns for lexer rules!
#pragma mark Rule return scopes start
<rules:{rule |
<rule.ruleDescriptor:{ruleDescriptor | <returnScope(scope=ruleDescriptor.returnScope)>>
}>
#pragma mark Rule return scopes end
*/
@implementation <className()>

static NSArray *tokenNames;

<actions.lexer.methods>

+ (void) initialize
{

```

```

// todo: get tokenNames into lexer - requires changes to CodeGenerator.java and ANTLRCore.sti
tokenNames = [[NSArray alloc] init];
}

- (id) initWithCharStream:(id<ANTLRCharStream>)anInput
{
if (nil!=(self = [super initWithCharStream:anInput])) {
<if(memoize)>
// initialize the memoization cache - the indices are 1-based in the runtime code!
[ruleMemo addObject:[NSNull null]]; // dummy entry to ensure 1-basedness.
for (int i = 0; i << <numRules>; i++) {
[[state ruleMemo] addObject:[NSMutableDictionary dictionary]];
}
<endif>
<synpreds:{ p | <lexerSynpred(name=p)>;separator="\n">
<cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = [[<name>DFA<dfa.decisionNumber> alloc]
initWithRecognizer:self];}; separator="\n">
<actions.lexer.init>
}
return self;
}

- (void) dealloc
{
<cyclicDFAs:{ dfa | [dfa<dfa.decisionNumber> release];}; separator="\n">
<actions.lexer.dealloc>
[super dealloc];
}

+ (NSString *) tokenNameForType:(int)aTokenType
{
return nil;
}

+ (NSArray *) tokenNames
{
return tokenNames;
}

- (NSString *) grammarFileName
{
return @"<fileName>";
}

<if(actions.lexer.reset)>
- (void) reset
{
<actions.lexer.reset>

```

```

[super reset];
}
<endif>

<if(filterMode)>
<filteringNextToken()>
<endif>

<rules; separator="\n\n">

@end
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 */
filteringNextToken() ::= <<
- (id<ANTLRToken>) nextToken
{
 <sharedStateLocalVarDefinition()>
 while (YES) {
 if ([input LA:1] == ANTLRCharStreamEOF) {
 return nil; // should really be a +eofToken call here -> go figure
 }
 [self setToken:nil];
 [_state setChannel:ANTLRTokenChannelDefault];
 [_state setTokenStartLine:[input line]];
 [_state setTokenCharPositionInLine:[input charPositionInLine]];
 [_state setTokenStartCharIndex:[self charIndex]];
 @try {
 int m = [input mark];
 [_state setBacktracking:1];
 [_state setIsFailed:NO];
 [self mTokens];
 [_state setBacktracking:0];
 if ([_state isFailed]) {
 [input rewind:m];
 [input consume]; <! // advance one char and try again !>
 } else {
 [self emit];
 return token;
 }
 }
 }
 @catch (ANTLRRecognitionException *re) {
 // shouldn't happen in backtracking mode, but...
 [self reportError:re];
 [self recover:re];
 }
}

```

```
 }
 }
}
>>
```

```
filteringActionGate() ::= "[_state backtracking] == 1"
```

```
treeParserHeaderFile(LEXER, PARSER, TREE_PARSER, actionScope, actions, docComment,
 recognizer, name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, profile, backtracking, synpreds,
 memoize, numRules, fileName, ANTLRVersion, generatedTimestamp, trace, scopes,
 superClass="ANTLRTreeParser") ::= <<
<parserHeaderFile(...)>
>>
```

```
parserHeaderFile(LEXER, PARSER, TREE_PARSER, actionScope, actions, docComment,
 recognizer, name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, profile, backtracking, synpreds,
 memoize, numRules, fileName, ANTLRVersion, generatedTimestamp, trace, scopes,
 superClass="ANTLRParser") ::=
<<
```

```
<cyclicDFAs:cyclicDFAInterface(>
```

```
#pragma mark Tokens
```

```
<tokens:{#define <name>_<it.name> <it.type>}; separator="\n">
```

```
#pragma mark Dynamic Global Scopes
```

```
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeDecl(scope=it)><endif>}>
```

```
#pragma mark Dynamic Rule Scopes
```

```
<rules:{rule |
```

```
<rule.ruleDescriptor:{ ruleDescriptor | <ruleAttributeScopeDecl(scope=ruleDescriptor.ruleScope)>}>
```

```
}>
```

```
#pragma mark Rule Return Scopes
```

```
<rules:{rule |
```

```
<rule.ruleDescriptor:{ ruleDescriptor | <returnScopeInterface(scope=ruleDescriptor.returnScope)>}>
```

```
}>
```

```
@interface <className(> : <@superClassName><superClass><@end> {
```

```
<cyclicDFAs:{dfa | <name>DFA<dfa.decisionNumber> *dfa<dfa.decisionNumber>;}; separator="\n">
```

```
<synpreds:{p | SEL <p>SyntacticPredicate;}; separator="\n">
```

```
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeIVar(scope=it)><endif>}>
```

```
<rules:{rule |
```

```
<rule.ruleDescriptor.ruleScope:ruleAttributeScopeIVar(scope=it)>
```



```

}>
<@ivars()>

<actions.(actionScope).ivars>
}

<actions.(actionScope).methodsdecl>

<rules:{rule |
- (<rule.ruleDescriptor:{ruleDescriptor|<returnType()>}>)>
<rule.ruleName><if(rule.ruleDescriptor.parameterScope)><rule.ruleDescriptor.parameterScope:parameterScope(scope=it)><endif>;
}>

<@methodsdecl()>

@end
>>

/** How to generate a parser */
genericParser(name, scopes, tokens, tokenNames, rules, numRules,
 cyclicDFAs, bitsets, inputStreamType, superClass,
 ASTLabelType="id", labelType, members) ::= <<

<cyclicDFAs:cyclicDFA()>

#pragma mark Bitsets
<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>

#pragma mark Dynamic Global Scopes
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeImpl(scope=it)><endif>}>

#pragma mark Dynamic Rule Scopes
<rules:{rule |
<rule.ruleDescriptor.ruleScope:ruleAttributeScopeImpl(scope=it)>
}>

#pragma mark Rule return scopes start
<rules:{rule |
<rule.ruleDescriptor:{ruleDescriptor | <returnScope(scope=ruleDescriptor.returnScope)>}>
}>

@implementation <className()>

static NSArray *tokenNames;

+ (void) initialize
{

```

```

<bitsets:bitsetInit(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>}, words64=it.bits)>
tokenNames = [[NSArray alloc] initWithObjects:@"\<invalid>", @"\<EOR>", @"\<DOWN>", @"\<UP>",
<tokenNames:{ @<it>}; separator=", ", wrap="\n ">, nil];
}

<if(PARSER)>
- (id) initWithTokenStream:(<inputStreamType>)aStream
{
if ((self = [super initWithTokenStream:aStream])) {
<else><!TREE_PARSER!>
- (id) initWithTreeNodeStream:(<inputStreamType>)aStream
{
if ((self = [super initWithTreeNodeStream:aStream])) {
<endif><\n>
<if(memoize)>
ruleMemo = [[NSMutableDictionary alloc] initWithCapacity:<numRules>+1];
<endif>
<cyclicDFAs:{ dfa | dfa<dfa.decisionNumber> = [[<name>DFA<dfa.decisionNumber> alloc]
initWithRecognizer:self];}; separator="\n">
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeInit(scope=it)><endif>}>
<rules:{rule |
<rule.ruleDescriptor.ruleScope:ruleAttributeScopeInit(scope=it)>
}>
<actions.(actionScope).init>
<@init()>
}
return self;
}

- (void) dealloc
{
<if(memoize)>
[ruleMemo release];
<endif>
<cyclicDFAs:{ dfa | [dfa<dfa.decisionNumber> release];}; separator="\n">
<scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScopeDealloc(scope=it)><endif>}>
<actions.(actionScope).dealloc>
<@dealloc()>
[super dealloc];
}

- (NSString *) grammarFileName
{
return @"<fileName>";
}

<actions.(actionScope).methods>

```

```

<rules; separator="\n\n">

<synpreds:{p | <synpred(p)>}>

<@methods()>

@end

>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType,
superClass="ANTLRParser", labelType="id<ANTLRToken> ", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="id<ANTLRTokenStream>", ...)>
>>

treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="id", superClass="ANTLRTreeParser",
members={<actions.treeparser.members>}) ::= <<
<genericParser(inputStreamType="id<ANTLRTreeNodeStream>", ...)>
>>

/** Maintain a local variable for the shared state object to avoid calling the accessor all the time. */
sharedStateLocalVarDefinition() ::= <<
<if(LEXER)>ANTLRLexerState<else>ANTLRBaseRecognizerState<endif> *_state = [self state];
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
- (void) <ruleName>
{
 <sharedStateLocalVarDefinition()>
 <if(trace)>NSLog(@"enter <ruleName> %d failed=%@ backtracking=%d", [input LA:1], [_state isFailed] ?
@"YES" : @"NO", [_state backtracking]);
 @try {
 <block>
 }
 @finally {
 NSLog(@"exit <ruleName> %d failed=%@ backtracking=%d", [input LA:1], [_state isFailed] ? @"YES" :
@"NO", [_state backtracking]);
 }
<else>
 <block>
}

```

```

<endif>
}
>>

/** How to test for failure and return from rule */
checkRuleBacktrackFailure() ::= <<
<if(backtracking)>if ([_state isFailed]) return <ruleReturnValue(>);<endif>
>>

/** This rule has failed, exit indicating failure during backtrack */
ruleBacktrackFailure() ::= <<
<if(backtracking)>if ([_state isBacktracking]) {[_state setIsFailed:YES]; return <ruleReturnValue(>);}<endif>
>>

synpred(name) ::= <<
<!name>SyntacticPredicate = @selector(<name>); !>
>>

lexerSynpred(name) ::= <<
<synpred(name)>
>>

ruleMemoization(name) ::= <<
<if(memoize)>
if ([_state isBacktracking] && [self alreadyParsedRule:input ruleIndex:<ruleDescriptor.index>]) { return
<ruleReturnValue(>); }
<endif>
>>

/** How to generate code for a rule.
 * The return type aggregates are declared in the header file (headerFile template)
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
// $ANTLR start <ruleName>
// <fileName>:<description>
- (<returnType(>) <ruleName><ruleDescriptor.parameterScope:parameterScope(scope=it)>
{
 <if(trace)>NSLog(@"enter <ruleName> %@ failed=%@ backtracking=%d", [input LT:1], [_state isFailed] ?
@"YES" : @"NO", [_state backtracking]);<endif>
 <sharedStateLocalVarDefinition(>
 <ruleScopeSetUp(>
 <ruleDeclarations(>
 <ruleLabelDefs(>
 <ruleDescriptor.actions.init>
 <@preamble(>
 <ruleMemoization(name=ruleName)>
 @try {

```

```

 <block>
 }
<if(exceptions)>
 <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
<else>
<if(!emptyRule)>
<if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
<else>
 @catch (ANTLRRecognitionException *re) {
 [self reportError:re];
 [self recover:input exception:re];
 }<\n>
<endif>
<endif>
<endif>
 @finally {
 <if(trace)>NSLog(@"exit <ruleName> %@ failed=%@ backtracking=%d", [input LT:1], [_state isFailed] ?
@"YES" : @"NO", [_state backtracking]);<endif>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.finally):execAction()>
 <ruleScopeCleanUp()>
 }
 <@postamble()>
 return <ruleReturnValue()>;
 }
// $ANTLR end <ruleName>
>>

catch(decl,action) ::= <<
catch (<e.decl>) {
 <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> _retval = [[[<returnTypeName()> alloc] init] autorelease];
[_retval setStart:[input LT:1]];<\n>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<returnType()> _<ruleDescriptor.singleValueReturnName> = <initValue(typeName=returnType())>;
<endif>
<endif>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = [input index];
<endif>
>>

```

```

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: {[<name>_<it>_stack addObject:[[[<name><it>Scope alloc] init] autorelease]]];
separator="\n">
<ruleDescriptor.ruleScope: {[<name>_<it.name>_stack addObject:[[[<name><it.name>Scope alloc] init]
autorelease]]]; separator="\n">
>>

```

```

ruleScopeCleanup() ::= <<
<ruleDescriptor.useScopes: {[<name>_<it>_stack removeLastObject];}; separator="\n">
<ruleDescriptor.ruleScope: {[<name>_<it.name>_stack removeLastObject];}; separator="\n">
>>

```

```

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels]
: {<labelType> _<it.label.text> = nil;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]
: {NSMutableArray *_list_<it.label.text> = nil;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: {ll|ANTLRRuleReturnScope <ll.label.text> = nil;}; separator="\n">
>>

```

```

ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
_<ruleDescriptor.singleValueReturnName>
<else>
_retval
<endif>
<endif>
<endif>
>>

```

```

ruleCleanup() ::= <<
// token+rule list labels
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels]:{[_list_<it.label.text> release];}; separator="\n">
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
[_retval setStop:[input LT:-1]];<\n>
<endif>
<endif>
<if(memoize)>
<if(backtracking)>
if ([_state isBacktracking]) { [self memoize:input ruleIndex:<ruleDescriptor.index>
startIndex:<ruleDescriptor.name>_startIndex]; }

```

```

<endif>
<endif>
>>

/** How to generate a rule in the lexer; naked blocks are used for
 * fragment rules.
 */
lexerRule(ruleName,nakedBlock,ruleDescriptor,block, memoize) ::= <<

- (void)
m<ruleName><if(ruleDescriptor.parameterScope)><ruleDescriptor.parameterScope:parameterScope(scope=it)><en
dif>
{
 <if(trace)>NSLog(@"enter <ruleName> %C line=%d:%d failed=%@ backtracking=%d", [input LA:1], [self line],
[self charPositionInLine], [_state isFailed] ? @"YES" : @"NO", [_state backtracking]);<endif>
 <sharedStateLocalVarDefinition()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleMemoization(name=ruleName)>
 @try {
<ruleDescriptor.actions.init>
<if(nakedBlock)>
 <block><<\n>
<else>
 int _type = <name>_<ruleName>;
 <block>
 [_state setTokenType:_type];<\n>
<endif>
 }
 @finally {
 <if(trace)>NSLog(@"exit <ruleName> %C line=%d:%d failed=%@ backtracking=%d", [input LA:1], [self
line], [self charPositionInLine], [_state isFailed] ? @"YES" : @"NO", [_state backtracking]);<endif>
 // rule cleanup
 <ruleCleanUp()>
 <(ruleDescriptor.actions.finally):execAction()>
 }
 return;
}
// $ANTLR end <ruleName>
>>

/** How to generate code for the implicitly-defined lexer grammar rule
 * that chooses between lexer rules.
 */
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
- (void) mTokens
{

```

```
<block><\n>
}
```

## // S U B R U L E S

```
/** A (...) subrule with multiple alternatives */
```

```
block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
```

```
// <fileName>:<description> // block
```

```
int alt<decisionNumber>=<maxAlt>;
```

```
<decls>
```

```
<@predecision()>
```

```
<decision>
```

```
<@postdecision()>
```

```
<@prebranch()>
```

```
switch (alt<decisionNumber>) {
```

```
<alts:altSwitchCase()>
```

```
}
```

```
<@postbranch()>
```

```
>>
```

```
/** A rule block with multiple alternatives */
```

```
ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
```

```
// <fileName>:<description> //ruleblock
```

```
int alt<decisionNumber>=<maxAlt>;
```

```
<decls>
```

```
<@predecision()>
```

```
<decision>
```

```
<@postdecision()>
```

```
switch (alt<decisionNumber>) {
```

```
<alts:altSwitchCase()>
```

```
}
```

```
>>
```

```
ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
```

```
// <fileName>:<description> // ruleBlockSingleAlt
```

```
<decls>
```

```
<@prealt()>
```

```
<alts>
```

```
<@postalt()>
```

```
>>
```

```
/** A special case of a (...) subrule with a single alternative */
```

```
blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<
```

```
// <fileName>:<description> // blockSingleAlt
```

```
<decls>
```

```
<@prealt()>
```

```
<alts>
```



```

<@postalt()>
>>

/** A (..)+ block with 0 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description> // positiveClosureBlock
int cnt<decisionNumber>=0;
<decls>
<@preloop()>

do {
 int alt<decisionNumber>=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
 default :
 if (cnt<decisionNumber> >= 1) goto loop<decisionNumber>;
 <if(backtracking)>
 <ruleBacktrackFailure()>
 <endif>
 ANTLREarlyExitException *eee = [ANTLREarlyExitException exceptionWithStream:input
decisionNumber:<decisionNumber>];
 <@earlyExitException()>
 @throw eee;
 }
 cnt<decisionNumber>++;
} while (YES); loop<decisionNumber>; ;
<@postloop()>
>>

```

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

```

/** A (..)* block with 0 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
<decls>
<@preloop()>
do {
 int alt<decisionNumber>=<maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>) {
 <alts:altSwitchCase()>
 default :

```

```

 goto loop<decisionNumber>;
 }
} while (YES); loop<decisionNumber>: ;
<@postloop()>
>>

closureBlockSingleAlt ::= closureBlock

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */
optionalBlock ::= block

optionalBlockSingleAlt ::= block

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */
altSwitchCase() ::= <<
case <i> :
 <@prealt()>
 <it>
 break;<\n>
>>

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel) ::= <<
// <fileName>:<description> // alt
{
<@declarations()>
<elements:element()>
<@cleanup()>
}
>>

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */
noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch()>
<it.el><\n>
>>

```

```

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)>
_<label>=(<labelType>)[input LT:1];<\n>
<endif>
[self match:input tokenType:<token> follow:FOLLOW_<token>_in_<ruleName><elementIndex>];
<checkRuleBacktrackFailure()>
>>

```

```

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

```

```

listLabel(label,elem) ::= <<
if (_list_<label> == nil)
list<label> = [[NSMutableArray alloc] init];
[_list_<label> addObject:_<elem>];
>>

```

```

/** match a character */
charRef(char,label) ::= <<
<if(label)>
int _<label> = [input LA:1];<\n>
<endif>
[self matchChar:<char>];
<checkRuleBacktrackFailure()><\n>
>>

```

```

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
_<label> = [input LA:1];<\n>
<endif>
[self matchRangeFromChar:<a> to:];<checkRuleBacktrackFailure()>
>>

```

```

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
_<label> = (<labelType>)[input LT:1];<\n>
<endif>
if (<s>) {
<postmatchCode>
[input consume];
<if(!LEXER)>

```

```

[_state setIsErrorRecovery:NO];
<endif>
<if(backtracking)>[_state setIsFailed:NO];<endif>
} else {
<ruleBacktrackFailure()>
ANTLRMismatchedSetException *mse = [ANTLRMismatchedSetException exceptionWithSet:nil stream:input];
<@mismatchedSetException()>
<if(LEXER)>
[self recover:mse];
<else>
[self recoverFromMismatchedSet:input exception:mse follow:FOLLOW_set_in_<ruleName><elementIndex>];
<endif>
@throw mse;
}<\n>
>>

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(...)>
>>

```

```

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
int _<label>Start = [self charIndex];
[self matchString:<string>];
<checkRuleBacktrackFailure()>
_<label> = [[ANTLRCommonToken alloc] initWithInput:input tokenType:ANTLRTokenTypeInvalid
channel:ANTLRTokenChannelDefault start:_<label>Start stop:[self charIndex]];
<else>
[self matchString:<string>];
<checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
_<label> = (<labelType>)[input LT:1];<\n>
<endif>
[self matchAny:input];
<checkRuleBacktrackFailure()>
>>

```

```

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(...)>
>>

```

```

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
int _<label> = [input LA:1];<\n>
<endif>
[self matchAny];
<checkRuleBacktrackFailure()><\n>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
[[_state following] addObject:FOLLOW_in_<ruleName><elementIndex>];
<if(label)>
_<label> = [self <rule.name><if(args)>:<args; separator=" :"><endif>];<\n>
<else>
[self <rule.name><if(args)>:<args; separator=" :"><endif>];<\n>
<endif>
[[_state following] removeLastObject];
<checkRuleBacktrackFailure()><\n>
>>

/** ids+=1 */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(...)>
>>

/** A lexer rule reference */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int _<label>Start<elementIndex> = [self charIndex];
[self m<rule.name><if(args)>:<args; separator=" :"><endif>];
<checkRuleBacktrackFailure()><\n>
_<label> = [[ANTLRCommonToken alloc] initWithInput:input tokenType:ANTLRTokenTypeInvalid
channel:ANTLRTokenChannelDefault start:_<label>Start<elementIndex> stop:[self charIndex]-1];
[_<label> setLine:[self line]];
<else>
[self m<rule.name><if(args)>:<args; separator=" :"><endif>];
<checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int _<label>Start<elementIndex> = [self charIndex];
[self matchChar:ANTLRCharStreamEOF];
<checkRuleBacktrackFailure()><\n>
<labelType> _<label> = [[ANTLRCommonToken alloc] initWithInput:input tokenType:ANTLRTokenTypeEOF
channel:ANTLRTokenChannelDefault start:_<label>Start<elementIndex> stop:[self charIndex]-1];
[_<label> setLine:[self line]];
<else>
[self matchChar:ANTLRCharStreamEOF];
<checkRuleBacktrackFailure()><\n>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if ([input LA:1] == ANTLRTokenTypeDOWN) {
[self match:input tokenType:ANTLRTokenTypeDOWN follow:nil]; <checkRuleBacktrackFailure()>
<children:element()>
[self match:input tokenType:ANTLRTokenTypeUP follow:nil]; <checkRuleBacktrackFailure()>
}
<else>
[self match:input tokenType:ANTLRTokenTypeDOWN follow:nil]; <checkRuleBacktrackFailure()>
<children:element()>
[self match:input tokenType:ANTLRTokenTypeUP follow:nil]; <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
* also hoisted into a prediction expression).
*/
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>)) {
<ruleBacktrackFailure()>
@throw [ANTLRFailedPredicateException exceptionWithRuleName:@"<ruleName>"
predicate:@"<description>" stream:input];
}
}

```

```

}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
 int LA<decisionNumber>_<stateNumber> = [input LA:<k>];
 <edges; separator="\nelse ">
 else {
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 ANTLRNoViableAltException *nvae = [ANTLRNoViableAltException
exceptionWithDecision:<decisionNumber> state:<stateNumber> stream:input];
 <@noViableAltException()>
 @throw nvae;<\n>
<endif>
 }
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
 int LA<decisionNumber>_<stateNumber> = [input LA:<k>];
 <edges; separator="\nelse ">
}
>>

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
{
 int LA<decisionNumber>_<stateNumber> = [input LA:<k>];
 <edges; separator="\nelse "><\n>
 <if(eotPredictsAlt)>
 else {
 alt<decisionNumber> = <eotPredictsAlt>;

```

```

 }<\n>
 <endif>
}
>>

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>";

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if (<labelExpr> <if(predicates)>&& <predicates><endif>) {
 <targetState>
}
>>

// F i x e d D F A (switch case)

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ([input LA:<k>]) {
 <edges; separator="\n">
default:
<if(eotPredictsAlt)>
alt<decisionNumber> = <eotPredictsAlt>;
<else> {
 <ruleBacktrackFailure()>
 ANTLRNoViableAltException *nvae = [ANTLRNoViableAltException
exceptionWithDecision:<decisionNumber> state:<stateNumber> stream:input];
 <@noViableAltException()>
 @throw nvae;<\n>
}
<endif>
}
>>

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ([input LA:<k>]) {
 <edges; separator="\n">
}<\n>
>>

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch ([input LA:<k>]) {

```



```

<edges; separator="\n">
<if(eotPredictsAlt)>
default:
alt<decisionNumber> = <eotPredictsAlt>
break;<\n>
<endif>
}<\n>
>>

dfaEdgeSwitch(labels, targetState) ::= <<
<labels:{ case <it>:}; separator="\n">
<targetState>
break;
>>

// C y c l i c D F A

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = [dfa<decisionNumber> predict];
>>

/** Used in headerFile */
cyclicDFAInterface(dfa) ::= <<
#pragma mark Cyclic DFA interface start <name>DFA<dfa.decisionNumber>
@interface <name>DFA<dfa.decisionNumber> : ANTLRDFA {} @end<\n>
#pragma mark Cyclic DFA interface end <name>DFA<dfa.decisionNumber>
>>

/** Used in lexer/parser implementation files */
cyclicDFA(dfa) ::= <<
#pragma mark Cyclic DFA implementation start <name>DFA<dfa.decisionNumber>
@implementation <name>DFA<dfa.decisionNumber>
const static int <name>dfa<dfa.decisionNumber>_eot[<dfa.numberofStates>] =
 {<dfa.eot; wrap="\n ", separator=",", null="-1">};
const static int <name>dfa<dfa.decisionNumber>_eof[<dfa.numberofStates>] =
 {<dfa.eof; wrap="\n ", separator=",", null="-1">};
const static unichar <name>dfa<dfa.decisionNumber>_min[<dfa.numberofStates>] =
 {<dfa.min; wrap="\n ", separator=",", null="0">};
const static unichar <name>dfa<dfa.decisionNumber>_max[<dfa.numberofStates>] =
 {<dfa.max; wrap="\n ", separator=",", null="0">};
const static int <name>dfa<dfa.decisionNumber>_accept[<dfa.numberofStates>] =
 {<dfa.accept; wrap="\n ", separator=",", null="-1">};
const static int <name>dfa<dfa.decisionNumber>_special[<dfa.numberofStates>] =
 {<dfa.special; wrap="\n ", separator=",", null="-1">};

```

```

const static int <name>dfa<dfa.decisionNumber>_transition[] = { };
<dfa.edgeTransitionClassMap.keys:{ table |
const static int <name>dfa<dfa.decisionNumber>_transition<i0>[] = { <table; separator=", ", wrap="\n ", null="-
1">};
}; null="">

```

```

- (id) initWithRecognizer:(ANTLRBaseRecognizer *) theRecognizer

```

```

{
if ((self = [super initWithRecognizer:theRecognizer]) != nil) {
eot = <name>dfa<dfa.decisionNumber>_eot;
eof = <name>dfa<dfa.decisionNumber>_eof;
min = <name>dfa<dfa.decisionNumber>_min;
max = <name>dfa<dfa.decisionNumber>_max;
accept = <name>dfa<dfa.decisionNumber>_accept;
special = <name>dfa<dfa.decisionNumber>_special;
if (!(transition = calloc(<dfa.numberOfStates>, sizeof(void*)))) {
[self release];
return nil;
}
<dfa.transitionEdgeTables:{ whichTable|transition[<i0>] =
<name>dfa<dfa.decisionNumber>_transition<whichTable>;}; separator="\n", null="">
}
return self;
}

```

```

<if(dfa.specialStateSTs)>

```

```

- (int) specialStateTransition:(int) s

```

```

{
int _s = s;
switch (s) {
<dfa.specialStateSTs:{ state |
case <i0> : <! compressed special state numbers 0..n-1 !>
<state>;}; separator="\n">
}

```

```

<if(backtracking)>

```

```

if ([recognizer isBacktracking]) {

```

```

[recognizer setIsFailed:YES];

```

```

return -1;

```

```

}<\n>

```

```

<endif>

```

```

ANTLRNoViableAltException *nvae = [ANTLRNoViableAltException

```

```

exceptionWithDecision:<dfa.decisionNumber> state:_s stream:[recognizer input]];

```

```

<! [self error:nvae]; !> <! for debugger - do later !>

```

```

@throw nvae;

```

```

}<\n>

```

```

<endif>

```

```

- (void) dealloc

```

```

{
 free(transition);
 [super dealloc];
}

- (NSString *) description
{
 return @"<dfa.description>";
}

<@errorMethod()>

@end

#pragma mark Cyclic DFA implementation end <name>DFA<dfa.decisionNumber>
<\n>
>>

cyclicDFAState(decisionNumber, stateNumber,edges,needErrorClause,semPredState) ::= <<
<if(semPredState)>
[[recognizer input] rewind];<\n>
<else>
int LA<decisionNumber>_<stateNumber> = [input LA:1];<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
if (s>=0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>)<endif>) { s = <targetStateNumber>;}<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "<left>&&<right>"

orPredicates(operands) ::= "(first(operands)<rest(operands):{ o | ||<o> }>)"

```

```

notPredicate(pred) ::= "!(<evalPredicate(...>)"

evalPredicate(pred,description) ::= "<pred>"

/** synpreds are broken in cyclic DFA special states
 * Damn! For now, work around with using the selectors directly, and by providing a trampoline evalSynPred
 * method in
 * ANTLRDFA
 */
/* evalSynPredicate(pred,description) ::= "[self evaluateSyntacticPredicate:<pred>SyntacticPredicate stream:input]"
*/
evalSynPredicate(pred,description) ::= "[self evaluateSyntacticPredicate:@selector(<pred>)]"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber>===<atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "[input LA:<k>]===<atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<
(LA<decisionNumber>_<stateNumber>|>=<lower> && LA<decisionNumber>_<stateNumber>|<=<upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "([input LA:<k>]|>=<lower>
&& [input LA:<k>]|<=<upper>)"

setTest(ranges) ::= "<ranges; separator=\\\"|\\\">"

// A T T R I B U T E S

globalAttributeScopeDecl(scope) ::= <<
@interface <name><scope.name>Scope : NSObject {
<scope.attributes:{<it.decl>;}; separator="\\n">
}
// use KVC to access attributes!
@end
>>

globalAttributeScopeIVar(scope) ::= <<
NSMutableArray *<name>_<scope.name>_stack;
>>

globalAttributeScopeImpl(scope) ::= <<
@implementation <name><scope.name>Scope
@end
>>

```

```
globalAttributeScopeInit(scope) ::= <<
<name>_<scope.name>_stack = [[NSMutableArray alloc] init];
>>
```

```
globalAttributeScopeDealloc(scope) ::= <<
[<name>_<scope.name>_stack release];
>>
```

```
ruleAttributeScopeDecl(scope) ::= <<
<if(scope.attributes)>
@interface <name><scope.name>Scope : NSObject {
<scope.attributes:{<it.decl>;}; separator="\n">
}
// use KVC to access attributes!
@end
<endif>
>>
```

```
ruleAttributeScopeIVar(scope) ::= <<
NSMutableArray *<name>_<scope.name>_stack;
>>
```

```
ruleAttributeScopeImpl(scope) ::= <<
<if(scope.attributes)>
@implementation <name><scope.name>Scope
@end
<endif>
>>
```

```
ruleAttributeScopeInit(scope) ::= <<
<name>_<scope.name>_stack = [[NSMutableArray alloc] init];
>>
```

```
ruleAttributeScopeDealloc(scope) ::= <<
[<name>_<scope.name>_stack release];
>>
```

```
returnTypeName() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
<className()>_<ruleDescriptor.name>_return
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
>>
```

```

<endif>
<endif>
<else>
void<! for synpreds this is always void !>
<endif>
>>

returnType() ::= <<
<returnTypeName>><if(!ruleDescriptor.isSynPred)><if(ruleDescriptor.hasMultipleReturnValues)>
*<endif><endif>
>>

/** Generate the Objective-C type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
<className()>_<referencedRule.name>_return *
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<objcTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> _<label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScopeInterface(scope) ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasMultipleReturnValues)>
@interface <returnTypeName> : ANTLR<if(TREE_PARSER)>Tree<endif>ParserRuleReturnScope {

```

```

 <scope.attributes:{<it.decl>; separator="\n">
 <@ivars()>
 <actions.(actionScope).ruleReturnIvars>
 }
 <@methods()>
 <actions.(actionScope).ruleReturnMethodsDecl>
 @end
<endif>
<endif>
>>

returnScope(scope) ::= <<
 <if(!ruleDescriptor.isSynPred)>
 <if(ruleDescriptor.hasMultipleReturnValues)>
 @implementation <returnTypeName()>
 <@methods()>
 <actions.(actionScope).ruleReturnMethods>
 @end
 <endif>
 <endif>
 >>

parameterScope(scope) ::= <<
 <scope.attributes:{:(<it.type><it.name>); separator=" ">
 >>

parameterAttributeRef(attr) ::= "<attr.name>"
parameterSetAttributeRef(attr,expr) ::= "<attr.name> =<expr>";"

scopeAttributeRef(scope,attr,index,negIndex) ::= <<
 [<scopeAttributeRefStack()> valueForKey:@"<attr.name>"]
 >>

scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
 [<scopeAttributeRefStack()> setValue:<expr> forKey:@"<attr.name>"];
 >>

scopeAttributeRefStack() ::= <<
 <if(negIndex)>
 [<name>_<scope>_stack objectAtIndex:[<name>_<scope>_stack count]-<negIndex>-1]
 <else>
 <if(index)>
 [<name>_<scope>_stack objectAtIndex:<index>]
 <else>
 [<name>_<scope>_stack lastObject]
 <endif>
 <endif>
 >>

```

```

/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<name>_<scope>_stack"

/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
[<scope> valueForKey:@"<attr.name>"]
<else>
_<scope>
<endif>
>>

returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
[_retval setValue: forKey:@"<attr.name>"];
<else>
_<attr.name>
<endif>
>>

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
[_retval setValue:<expr> forKey:@"<attr.name>"];
<else>
_<attr.name> =<expr>;
<if(LEXER)>
// double check this after beta release!
[_<attr.name> retain];
<endif>
<endif>
>>
/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "_<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "_list_<label>"

// not sure the next are the right approach; and they are evaluated early;
// they cannot see TREE_PARSER or PARSER attributes for example. :(

tokenLabelPropertyRef_text(scope,attr) ::= "[<scope> text]"
tokenLabelPropertyRef_type(scope,attr) ::= "[<scope> type]"
tokenLabelPropertyRef_line(scope,attr) ::= "[<scope> line]"

```



```

tokenLabelPropertyRef_pos(scope,attr) ::= "[_<scope> charPositionInLine]"
tokenLabelPropertyRef_channel(scope,attr) ::= "[_<scope> channel]"
tokenLabelPropertyRef_index(scope,attr) ::= "[_<scope> tokenIndex]"
tokenLabelPropertyRef_tree(scope,attr) ::= "_<scope>_tree"

ruleLabelPropertyRef_start(scope,attr) ::= "[_<scope> start]"
ruleLabelPropertyRef_stop(scope,attr) ::= "[_<scope> stop]"
ruleLabelPropertyRef_tree(scope,attr) ::= "[_<scope> tree]"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
//[input textForNode:[_<scope> start]]
[input substringWithRange:NSMakeRange([[input treeAdaptor] startIndex:[_<scope> start]], [[input treeAdaptor]
stopIndex:[_<scope> start]])]
<else>
[input substringWithRange:NSMakeRange([_<scope> start], [_<scope> stop]-[_<scope> start])]
<endif>
>>
ruleLabelPropertyRef_st(scope,attr) ::= "[_<scope> st]"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "_<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "[_<scope> type]"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "[_<scope> line]"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "[_<scope> charPositionInLine]"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "[_<scope> channel]"
lexerRuleLabelPropertyRef_index(scope,attr) ::= "[_<scope> tokenIndex]"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "[_<scope> text]"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "[_retval start]"
rulePropertyRef_stop(scope,attr) ::= "[_retval stop]"
rulePropertyRef_tree(scope,attr) ::= "[_retval tree]"
rulePropertyRef_text(scope,attr) ::= "[input substringWithRange:NSMakeRange(_start, [input index]-_start)]"
rulePropertyRef_st(scope,attr) ::= "[_retval st]"

ruleSetPropertyRef_tree(scope,attr,expr) ::= "[_retval setValue:<expr> forKey:@\"tree\"]"
ruleSetPropertyRef_st(scope,attr,expr) ::= "<\n>#error String Templates are unsupported<\n>"

/* hideous: find a way to cut down on the number of templates to support read/write access */
/* TODO: also, which ones are valid to write to? ask Ter */
lexerRuleSetPropertyRef_text(scope,attr,expr) ::= "[_state setText:<expr>];"
lexerRuleSetPropertyRef_type(scope,attr,expr) ::= "_type"
lexerRuleSetPropertyRef_line(scope,attr,expr) ::= "[_state tokenStartLine]"
lexerRuleSetPropertyRef_pos(scope,attr,expr) ::= "[_state tokenCharPositionInLine]"
lexerRuleSetPropertyRef_index(scope,attr,expr) ::= "-1" // undefined token index in lexer
lexerRuleSetPropertyRef_channel(scope,attr,expr) ::= "[_state setChannel:<expr>];"
lexerRuleSetPropertyRef_start(scope,attr,expr) ::= "[_state tokenStartCharIndex]"

```

```
lexerRuleSetPropertyRef_stop(scope,attr,expr) ::= "[self charIndex]-1"
```

```
lexerRulePropertyRef_text(scope,attr) ::= "[self text]"
```

```
lexerRulePropertyRef_type(scope,attr) ::= "_type"
```

```
lexerRulePropertyRef_line(scope,attr) ::= "[_state tokenStartLine]"
```

```
lexerRulePropertyRef_pos(scope,attr) ::= "[_state tokenCharPositionInLine]"
```

```
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
```

```
lexerRulePropertyRef_channel(scope,attr) ::= "[_state channel]"
```

```
lexerRulePropertyRef_start(scope,attr) ::= "[_state tokenStartCharIndex]"
```

```
lexerRulePropertyRef_stop(scope,attr) ::= "[self charIndex]-1"
```

```
/** How to execute an action */
```

```
execAction(action) ::= <<
```

```
<if(backtracking)>
```

```
<if(actions.(actionScope).synpredgate)>
```

```
if (<actions.(actionScope).synpredgate>) {
```

```
 <action>
```

```
}
```

```
<else>
```

```
if (![_state isBacktracking]) {
```

```
 <action>
```

```
}
```

```
<endif>
```

```
<else>
```

```
<action>
```

```
<endif>
```

```
>>
```

```
// M I S C (properties, etc...)
```

```
bitset(name, words64) ::= <<
```

```
const static unsigned long long <name>_data[] = {<words64:{<it>LL};separator=",">};
```

```
static ANTLRBitSet *<name>;
```

```
<! ANTLRBitSet *<name> = [[ANTLRBitSet alloc] initWithBits:<name>_data count:<length(words64)>];<\n> !>
```

```
>>
```

```
bitsetInit(name, words64) ::= <<
```

```
<name> = [[ANTLRBitSet alloc] initWithBits:<name>_data count:<length(words64)>];<\n>
```

```
>>
```

```
codeFileExtension() ::= ".m"
```

```
headerFileExtension() ::= ".h"
```

```
true() ::= "YES"
```

```
false() ::= "NO"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/ObjC/ObjC.stg
```

No license file was found, but licenses were detected in source scan.

```
/*
```

```
[The "BSD licence"]
```

```
Copyright (c) 2007-2008 Johannes Luber
```

```
Copyright (c) 2005-2007 Kunle Odutola
```

```
Copyright (c) 2005 Terence Parr
```

```
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```

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```
*/
```

```
group CSharp implements ANTLRCore;
```

```
csharpTypeInitMap ::= [
```

```
"int": "0",
```

```
"uint": "0",
```

```
"long": "0",
```

```
"ulong": "0",
```

```
"float": "0.0",
```

```
"double": "0.0",
```

```
"bool": "false",
```

```
"byte": "0",
```

```
"sbyte": "0",
```

```
"short": "0",
```

```
"ushort": "0",
```

```

"char": "char.MinValue",
default: "null" // anything other than an atomic type
]

/** The overall file structure of a recognizer; stores methods for rules
 * and cyclic DFAs plus support code.
 */
outputFile(LEXER,PARSER,TREE_PARSER, actionScope, actions,
 docComment, recognizer,
 name, tokens, tokenNames, rules, cyclicDFAs,
 bitsets, buildTemplate, buildAST, rewriteMode, profile,
 backtracking, synpreds, memoize, numRules,
 fileName, ANTLRVersion, generatedTimestamp, trace,
 scopes, superClass, literals) ::=
<<
// $ANTLR <ANTLRVersion> <fileName> <generatedTimestamp>

<@debugPreprocessor()>
<actions.(actionScope).header>

<@imports>
using System;
using Antlr.Runtime;
<if(TREE_PARSER)>
using Antlr.Runtime.Tree;
<endif>
using IList = System.Collections.IList;
using ArrayList = System.Collections.ArrayList;
using Stack = Antlr.Runtime.Collections.StackList;

<if(backtracking)>
using IDictionary = System.Collections.IDictionary;
using Hashtable = System.Collections.Hashtable;
<endif>

<@end>

<if(actions.(actionScope).namespace)>
namespace <actions.(actionScope).namespace>
{
<endif>

<docComment>
<recognizer>
<if(actions.(actionScope).namespace)>
}
<endif>

```

>>

```
lexer(grammar, name, tokens, scopes, rules, numRules, labelType="IToken",
 filterMode, superClass="Lexer") ::= <<
public class <grammar.recognizerName> : <@superClassName><superClass><@end> {
 <tokens:{public const int <it.name> = <it.type>;}; separator="\n">
 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
 <actions.lexer.members>

 // delegates
 <grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 // delegators
 <grammar.delegators:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 <last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

 public <grammar.recognizerName>() <! needed by subclasses !>
 {
 InitializeCyclicDFAs();
 }
 public <grammar.recognizerName>(ICharStream input<grammar.delegators:{g|, <g.recognizerName>
<g.delegateName()>}>)
 : this(input, null<grammar.delegators:{g|, <g.delegateName()>}>) {
 }
 public <grammar.recognizerName>(ICharStream input, RecognizerSharedState state<grammar.delegators:{g|,
<g.recognizerName> <g.delegateName()>}>)
 : base(input, state) {
 InitializeCyclicDFAs(); <! Necessary in C#??? Not removed yet. !>
 <if(memoize)>
 <if(grammar.grammarIsRoot)>
 state.ruleMemo = new Hashtable[<numRules>+1];<\n> <! index from 1..n !>
 <endif>
 <endif>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|,
<p.delegateName()>}>, this);}; separator="\n">
 <grammar.delegators:
 {g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
 <last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
 }

 override public string GrammarFileName
 {
 get { return "<fileName>";}
 }

 <if(filterMode)>
```

```

 <filteringNextToken()>
<endif>
 <rules; separator="\n\n">

 <synpreds:{p | <lexerSynpred(p)>}>

 <cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">
private void InitializeCyclicDFAs(<@debugInitializeCyclicDFAs()>)
{
 <cyclicDFAs:{dfa | this.dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this<@debugAddition()>);}; separator="\n">
 <cyclicDFAs:{dfa | <if(dfa.specialStateSTs)>this.dfa<dfa.decisionNumber>.specialStateTransitionHandler = new
DFA.SpecialStateTransitionHandler(DFA<dfa.decisionNumber>_SpecialStateTransition);<endif>};
separator="\n">
}

 <cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

}
>>

/** A override of Lexer.nextToken() that backtracks over mTokens() looking
 * for matches. No error can be generated upon error; just rewind, consume
 * a token and then try again. backtracking needs to be set as well.
 *
 * Make rule memoization happen only at levels above 1 as we start mTokens
 * at backtracking==1.
 */
filteringNextToken() ::= <<
override public IToken NextToken()
{
 while (true)
 {
 if (input.LA(1) == (int)CharStreamConstants.EOF)
 {
 return Token.EOF_TOKEN;
 }

 state.token = null;
state.channel = Token.DEFAULT_CHANNEL;
 state.tokenStartCharIndex = input.Index();
 state.tokenStartCharPositionInLine = input.CharPositionInLine;
 state.tokenStartLine = input.Line;
state.text = null;
 try
 {
 int m = input.Mark();
 state.backtracking = 1; <! means we won't throw slow exception !>

```

```

 state.failed = false;
 mTokens();
 state.backtracking = 0;
<!
 mTokens backtracks with synpred at backtracking==2
 and we set the synpredgate to allow actions at level 1.
!>
 if (state.failed)
 {
 input.Rewind(m);
 input.Consume(); <! // advance one char and try again !>
 }
 else
 {
 Emit();
 return state.token;
 }
 }
 catch (RecognitionException re)
 {
 // shouldn't happen in backtracking mode, but...
 ReportError(re);
 Recover(re);
 }
 }
}

override public void Memoize(IIntStream input, int ruleIndex, int ruleStartIndex)
{
 if (state.backtracking > 1)
 base.Memoize(input, ruleIndex, ruleStartIndex);
}

override public bool AlreadyParsedRule(IIntStream input, int ruleIndex)
{
 if (state.backtracking > 1)
 return base.AlreadyParsedRule(input, ruleIndex);
 return false;
}
>>

actionGate() ::= "(state.backtracking==0)"

filteringActionGate() ::= "(state.backtracking == 1)"

/** How to generate a parser */
genericParser(grammar, name, scopes, tokens, tokenNames, rules, numRules,
 bitsets, inputStreamType, superClass, filterMode,

```

```

 ASTLabelType="object", labelType, members, rewriteElementType) ::= <<
public class <grammar.recognizerName> : <@superClassName><superClass><@end>
{
<if(grammar.grammarIsRoot)>
 public static readonly string[] tokenNames = new string[]
 {
 "\<invalid>",
 "\<EOR>",
 "\<DOWN>",
 "\<UP>",
 <tokenNames; separator=", \n">
 };<\n>
<endif>

 <tokens:{public const int <it.name> = <it.type>;}; separator="\n">

 // delegates
 <grammar.delegates:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 // delegators
 <grammar.delegators:
 {g|public <g.recognizerName> <g.delegateName()>;}; separator="\n">
 <last(grammar.delegators):{g|public <g.recognizerName> gParent;}>

 <scopes:{<if(it.isDynamicGlobalScope)><globalAttributeScope(scope=it)><endif>}>
 <@members>
 <! WARNING. bug in ST: this is cut-n-paste into Dbg.stg !>

 public <grammar.recognizerName>(<inputStreamType> input<grammar.delegators:{g|, <g.recognizerName>
 <g.delegateName()>}>
 : this(input, new RecognizerSharedState()<grammar.delegators:{g|, <g.delegateName()>}>) {
 }

 public <grammar.recognizerName>(<inputStreamType> input, RecognizerSharedState
 state<grammar.delegators:{g|, <g.recognizerName> <g.delegateName()>}>
 : base(input, state) {
 <parserCtorBody()>
 <grammar.directDelegates:
 {g|<g.delegateName()> = new <g.recognizerName>(input, state<trunc(g.delegators):{p|,
 <p.delegateName()>}>, this);}; separator="\n">
 <grammar.indirectDelegates:{g | <g.delegateName()> = <g.delegator.delegateName()>.<g.delegateName()>;};
 separator="\n">
 <last(grammar.delegators):{g|gParent = <g.delegateName()>;}>
 }
 <@end>

 override public string[] TokenNames {
 get { return <grammar.composite.rootGrammar.recognizerName>.tokenNames; }

```



```

}

override public string GrammarFileName {
get { return "<fileName>"; }
}

<members>

<rules; separator="\n\n">

<! generate rule/method definitions for imported rules so they
appear to be defined in this recognizer. !>
// Delegated rules
<grammar.delegatedRules:{ruleDescriptor|
public <returnType()> <ruleDescriptor.name><ruleDescriptor.parameterScope:parameterScope(scope=it)> //
throws RecognitionException
\{
<if(ruleDescriptor.hasReturnValue)>return
<endif><ruleDescriptor.grammar:delegateName()>.<ruleDescriptor.name><ruleDescriptor.parameterScope.attributes:{a|<a.name>}; separator=", ">;
\}}; separator="\n">

<synpreds:{p | <synpred(p)>>

<cyclicDFAs:{dfa | protected DFA<dfa.decisionNumber> dfa<dfa.decisionNumber>;}; separator="\n">
private void InitializeCyclicDFAs(<@debugInitializeCyclicDFAs()>)
{
<cyclicDFAs:{dfa | this.dfa<dfa.decisionNumber> = new
DFA<dfa.decisionNumber>(this<@debugAddition()>);}; separator="\n">
<cyclicDFAs:{dfa | <if(dfa.specialStateSTs)>this.dfa<dfa.decisionNumber>.specialStateTransitionHandler = new
DFA.SpecialStateTransitionHandler(DFA<dfa.decisionNumber>_SpecialStateTransition);<endif>;};
separator="\n">
}

<cyclicDFAs:cyclicDFA()> <! dump tables for all DFA !>

<bitsets:bitset(name={FOLLOW_<it.name>_in_<it.inName><it.tokenIndex>},
words64=it.bits)>
}
>>

parserCtorBody() ::= <<
<@initializeCyclicDFAs>InitializeCyclicDFAs();<@end>
<if(memoize)>
<if(grammar.grammarIsRoot)>
this.state.ruleMemo = new Hashtable[<length(grammar.allImportedRules)>+1];<\n> <! index from 1..n !>
<endif>
<endif>

```

```

<grammar.delegators:
{g|this.<g.delegateName()> = <g.delegateName()>;}; separator="\n">
>>

parser(grammar, name, scopes, tokens, tokenNames, rules, numRules, bitsets, ASTLabelType, superClass="Parser",
labelType="IToken", members={<actions.parser.members>}) ::= <<
<genericParser(inputStreamType="ITokenStream", rewriteElementType="Token", ...)>
>>

/** How to generate a tree parser; same as parser except the input
 * stream is a different type.
 */
treeParser(grammar, name, scopes, tokens, tokenNames, globalAction, rules, numRules, bitsets,
labelType={<ASTLabelType>}, ASTLabelType="object", superClass="TreeParser",
members={<actions.treeparser.members>}, filterMode) ::= <<
<genericParser(inputStreamType="ITreeNodeStream", rewriteElementType="Node", ...)>
>>

/** A simpler version of a rule template that is specific to the imaginary
 * rules created for syntactic predicates. As they never have return values
 * nor parameters etc..., just give simplest possible method. Don't do
 * any of the normal memoization stuff in here either; it's a waste.
 * As predicates cannot be inlined into the invoking rule, they need to
 * be in a rule by themselves.
 */
synpredRule(ruleName, ruleDescriptor, block, description, nakedBlock) ::=
<<
// $ANTLR start "<ruleName>"
public void <ruleName>_fragment(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) {
 <ruleLabelDefs()>
 <if(trace)>
 TraceIn("<ruleName>_fragment", <ruleDescriptor.index>);
 try
 {
 <block>
 }
 finally
 {
 TraceOut("<ruleName>_fragment", <ruleDescriptor.index>);
 }
 <else>
 <block>
 <endif>
}
// $ANTLR end "<ruleName>"
>>

synpredDecls(name) ::= <<

```

```
SynPredPointer <name>;<\n>
```

```
>>
```

```
synpred(name) ::= <<
public bool <name>()
{
 state.backtracking++;
 <@start()>
 int start = input.Mark();
 try
 {
 <name>_fragment(); // can never throw exception
 }
 catch (RecognitionException re)
 {
 Console.Error.WriteLine("impossible: "+re);
 }
 bool success = !state.failed;
 input.Rewind(start);
 <@stop()>
 state.backtracking--;
 state.failed = false;
 return success;
}<\n>
```

```
>>
```

```
lexerSynpred(name) ::= <<
```

```
<synpred(name)>
```

```
>>
```

```
ruleMemoization(name) ::= <<
```

```
<if(memoize)>
```

```
if ((state.backtracking > 0) && AlreadyParsedRule(input, <ruleDescriptor.index>))
```

```
{
```

```
 return <ruleReturnValue()>;
```

```
}
```

```
<endif>
```

```
>>
```

```
/** How to test for failure and return from rule */
```

```
checkRuleBacktrackFailure() ::= <<
```

```
<if(backtracking)>if (state.failed) return <ruleReturnValue()>;<endif>
```

```
>>
```

```
/** This rule has failed, exit indicating failure during backtrack */
```

```
ruleBacktrackFailure() ::= <<
```

```
<if(backtracking)>if (state.backtracking > 0) {state.failed = true; return <ruleReturnValue()>;}<endif>
```

```
>>
```

```

/** How to generate code for a rule. This includes any return type
 * data aggregates required for multiple return values.
 */
rule(ruleName,ruleDescriptor,block,emptyRule,description,exceptions,finally,memoize) ::= <<
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<returnScope(scope=ruleDescriptor.returnScope)>

// $ANTLR start "<ruleName>"
// <fileName>:<description>
public <returnType()> <ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) // throws
RecognitionException [1]
{
 <if(trace)>TraceIn("<ruleName>", <ruleDescriptor.index>);<endif>
 <ruleScopeSetUp()>
 <ruleDeclarations()>
 <ruleLabelDefs()>
 <ruleDescriptor.actions.init>
 <@preamble()>
 try
 {
 <ruleMemoization(name=ruleName)>
 <block>
 <ruleCleanUp()>
 <(ruleDescriptor.actions.after):execAction()>
 }
 <if(exceptions)>
 <exceptions:{e|<catch(decl=e.decl,action=e.action)><\n>}>
 <else>
 <if(!emptyRule)>
 <if(actions.(actionScope).rulecatch)>
 <actions.(actionScope).rulecatch>
 <else>
 catch (RecognitionException re)
 {
 ReportError(re);
 Recover(input,re);
 <@setErrorReturnValue()>
 }<\n>
 <endif>
 <endif>
 <endif>
 finally
 {
 <if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
 <memoize()>
 <ruleScopeCleanUp()>
 <finally>

```

```

 }
 <@postamble()>
 return <ruleReturnValue()>;
}
// $ANTLR end "<ruleName>"
>>

catch(decl,action) ::= <<
catch (<e.decl>)
{
 <e.action>
}
>>

ruleDeclarations() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<returnType()> retval = new <returnType()>();
retval.Start = input.LT(1);<\n>
<else>
<ruleDescriptor.returnScope.attributes: { a |
<a.type> <a.name> = <if(a.initValue)><a.initValue><else><initValue(a.type)><endif>;
}>
<endif>
<if(memoize)>
int <ruleDescriptor.name>_startIndex = input.Index();
<endif>
>>

ruleScopeSetUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.Push(new <it>_scope());}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.Push(new <it.name>_scope());}; separator="\n">
>>

ruleScopeCleanUp() ::= <<
<ruleDescriptor.useScopes: {<it>_stack.Pop();}; separator="\n">
<ruleDescriptor.ruleScope: {<it.name>_stack.Pop();}; separator="\n">
>>

ruleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,ruleDescriptor.tokenListLabels,
ruleDescriptor.wildcardTreeLabels,ruleDescriptor.wildcardTreeListLabels]
: {<labelType> <it.label.text> = null;}; separator="\n"
>
<[ruleDescriptor.tokenListLabels,ruleDescriptor.ruleListLabels,ruleDescriptor.wildcardTreeListLabels]
: {IList list_<it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.ruleLabels:ruleLabelDef(label=it); separator="\n">
<ruleDescriptor.ruleListLabels: {IList list_<it>_stack.Push(new <it>_scope());}; separator="\n">

```

>>

```
lexerRuleLabelDefs() ::= <<
<[ruleDescriptor.tokenLabels,
ruleDescriptor.ruleListLabels,
ruleDescriptor.ruleLabels]
: {<labelType> <it.label.text> = null;}; separator="\n"
>
<ruleDescriptor.charLabels: {int <it.label.text>;}; separator="\n">
<[ruleDescriptor.tokenListLabels,
ruleDescriptor.ruleListLabels]
: {IList list_<it.label.text> = null;}; separator="\n"
>
>>
```

```
ruleReturnValue() ::= <<
<if(!ruleDescriptor.isSynPred)>
<if(ruleDescriptor.hasReturnValue)>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnName>
<else>
retval
<endif>
<endif>
<endif>
>>
```

```
ruleCleanUp() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<if(!TREE_PARSER)>
retval.Stop = input.LT(-1);<\n>
<endif>
<endif>
>>
```

```
memoize() ::= <<
<if(memoize)>
<if(backtracking)>
if (state.backtracking > 0)
{
Memoize(input, <ruleDescriptor.index>, <ruleDescriptor.name>_StartIndex);
}
<endif>
<endif>
>>
```

```
/** How to generate a rule in the lexer; naked blocks are used for
* fragment rules.
```

```

*/
lexerRule(ruleName,nakedBlock,ruleDescriptor,block,memoize) ::= <<
// $ANTLR start "<ruleName>"
public void m<ruleName>(<ruleDescriptor.parameterScope:parameterScope(scope=it)>) // throws
RecognitionException [2]
{
<ruleAttributeScope(scope=ruleDescriptor.ruleScope)>
<if(trace)>TraceIn("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeSetUp()>
<ruleDeclarations()>
try
{
<if(nakedBlock)>
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block><\n>
<else>
int _type = <ruleName>;
int _channel = DEFAULT_TOKEN_CHANNEL;
<ruleMemoization(name=ruleName)>
<lexerRuleLabelDefs()>
<ruleDescriptor.actions.init>
<block>
<ruleCleanUp()>
state.type = _type;
state.channel = _channel;
<(ruleDescriptor.actions.after):execAction()>
<endif>
}
finally
{
<if(trace)>TraceOut("<ruleName>", <ruleDescriptor.index>);<endif>
<ruleScopeCleanUp()>
<memoize()>
}
}
// $ANTLR end "<ruleName>"
>>

```

/\*\* How to generate code for the implicitly-defined lexer grammar rule  
\* that chooses between lexer rules.

```

*/
tokensRule(ruleName,nakedBlock,args,block,ruleDescriptor) ::= <<
override public void mTokens() // throws RecognitionException
{
<block><\n>
}

```

>>

// S U B R U L E S

/\*\* A (...) subrule with multiple alternatives \*/

block(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

// <fileName>:<description>

int alt<decisionNumber> = <maxAlt>;

<decls>

<@predecision()>

<decision>

<@postdecision()>

<@prebranch()>

switch (alt<decisionNumber>)

{

  <alts:altSwitchCase()>

}

<@postbranch()>

>>

/\*\* A rule block with multiple alternatives \*/

ruleBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<

// <fileName>:<description>

int alt<decisionNumber> = <maxAlt>;

<decls>

<@predecision()>

<decision>

<@postdecision()>

switch (alt<decisionNumber>)

{

  <alts:altSwitchCase()>

}

>>

ruleBlockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<

// <fileName>:<description>

<decls>

<@prealt()>

<alts>

<@postalt()>

>>

/\*\* A special case of a (...) subrule with a single alternative \*/

blockSingleAlt(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,description) ::= <<

// <fileName>:<description>

<decls>

<@prealt()>

<alts>



```

<@postalt()>
>>

/** A (..)+ block with 1 or more alternatives */
positiveClosureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::= <<
// <fileName>:<description>
int cnt<decisionNumber> = 0;
<decls>
<@preloop()>
do
{
 int alt<decisionNumber> = <maxAlt>;
 <@predecision()>
 <decision>
 <@postdecision()>
 switch (alt<decisionNumber>)
 {
 <alts:altSwitchCase()>
 default:
 if (cnt<decisionNumber> >= 1) goto loop<decisionNumber>;
 <ruleBacktrackFailure()>
 EarlyExitException eee<decisionNumber> =
 new EarlyExitException(<decisionNumber>, input);
 <@earlyExitException()>
 throw eee<decisionNumber>;
 }
 cnt<decisionNumber>++;
} while (true);

loop<decisionNumber>:
; // Stops C# compiler whining that label 'loop<decisionNumber>' has no statements
<@postloop()>
>>

```

```

positiveClosureBlockSingleAlt ::= positiveClosureBlock

```

```

/** A (..)* block with 1 or more alternatives */
closureBlock(alts,decls,decision,enclosingBlockLevel,blockLevel,decisionNumber,maxK,maxAlt,description) ::=
<<
// <fileName>:<description>
<decls>
<@preloop()>
do
{
 int alt<decisionNumber> = <maxAlt>;
 <@predecision()>
 <decision>

```

```

 <@postdecision()>
 switch (alt<decisionNumber>)
 {
 <alts:altSwitchCase()>
 default:
 goto loop<decisionNumber>;
 }
} while (true);

loop<decisionNumber>:
; // Stops C# compiler whining that label 'loop<decisionNumber>' has no statements
<@postloop()>
>>

```

```
closureBlockSingleAlt ::= closureBlock
```

```

/** Optional blocks (x)? are translated to (x|) by before code generation
 * so we can just use the normal block template
 */

```

```
optionalBlock ::= block
```

```
optionalBlockSingleAlt ::= block
```

```

/** A case in a switch that jumps to an alternative given the alternative
 * number. A DFA predicts the alternative and then a simple switch
 * does the jump to the code that actually matches that alternative.
 */

```

```
altSwitchCase() ::= <<
```

```

case <i> :
 <@prealt()>
 <it>
 break;<\n>
>>

```

```

/** An alternative is just a list of elements; at outermost level */
alt(elements,altNum,description,autoAST,outerAlt,treeLevel,rew) ::= <<

```

```
// <fileName>:<description>
```

```

{
 <@declarations()>
 <elements:element()>
 <rew>
 <@cleanup()>
}
>>

```

```

/** What to emit when there is no rewrite. For auto build
 * mode, does nothing.
 */

```

```

noRewrite(rewriteBlockLevel, treeLevel) ::= ""

// E L E M E N T S

/** Dump the elements one per line */
element() ::= <<
<@prematch(>
<it.el><\n>
>>

/** match a token optionally with a label in front */
tokenRef(token,label,elementIndex,hetero) ::= <<
<if(label)><label>=(<labelType>)<endif>Match(input,<token>,FOLLOW_<token>_in_<ruleName><elementIndex
>); <checkRuleBacktrackFailure(>
>>

/** ids+=ID */
tokenRefAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRef(...)>
<listLabel(elem=label,...)>
>>

listLabel(label,elem) ::= <<
if (list_<label> == null) list_<label> = new ArrayList();
list_<label>.Add(<elem>);<\n>
>>

/** match a character */
charRef(char,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
Match(<char>); <checkRuleBacktrackFailure(>
>>

/** match a character range */
charRangeRef(a,b,label) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchRange(<a>,); <checkRuleBacktrackFailure(>
>>

/** For now, sets are interval tests and must be tested inline */
matchSet(s,label,elementIndex,postmatchCode="") ::= <<
<if(label)>
<if(LEXER)>
<label>= input.LA(1);<\n>

```

```

<else>
<label> = (<labelType>)input.LT(1);<\n>
<endif>
<endif>
if (<s>)
{
 input.Consume();
 <postmatchCode>
<if(!LEXER)>
 state.errorRecovery = false;
<endif>
 <if(backtracking)>state.failed = false;<endif>
}
else
{
 <ruleBacktrackFailure()>
 MismatchedSetException mse = new MismatchedSetException(null,input);
 <@mismatchedSetException()>
<if(LEXER)>
 Recover(mse);
 throw mse;
<else>
 throw mse;
 <! use following code to make it recover inline; remove throw mse;
 RecoverFromMismatchedSet(input,mse,FOLLOW_set_in_<ruleName><elementIndex>);
 !>
<endif>
}<\n>
>>

```

```

matchRuleBlockSet ::= matchSet

```

```

matchSetAndListLabel(s,label,elementIndex,postmatchCode) ::= <<
<matchSet(...)>
<listLabel(elem=label,...)>
>>

```

```

/** Match a string literal */
lexerStringRef(string,label) ::= <<
<if(label)>
int <label>Start = CharIndex;
Match(<string>); <checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start, CharIndex-1);
<else>
Match(<string>); <checkRuleBacktrackFailure()><\n>
<endif>
>>

```

```

wildcard(label,elementIndex) ::= <<
<if(label)>
<label> = (<labelType>)input.LT(1);<\n>
<endif>
MatchAny(input); <checkRuleBacktrackFailure()>
>>

wildcardAndListLabel(label,elementIndex) ::= <<
<wildcard(...)>
<listLabel(elem=label,...)>
>>

/** Match . wildcard in lexer */
wildcardChar(label, elementIndex) ::= <<
<if(label)>
<label> = input.LA(1);<\n>
<endif>
MatchAny(); <checkRuleBacktrackFailure()>
>>

wildcardCharListLabel(label, elementIndex) ::= <<
<wildcardChar(...)>
<listLabel(elem=label,...)>
>>

/** Match a rule reference by invoking it possibly with arguments
 * and a return value or values. The 'rule' argument was the
 * target rule name, but now is type Rule, whose toString is
 * same: the rule name. Now though you can access full rule
 * descriptor stuff.
 */
ruleRef(rule,label,elementIndex,args,scope) ::= <<
PushFollow(FOLLOW_<rule.name>_in_<ruleName><elementIndex>);
<if(label)>
<label> = <if(scope)><scope:delegateName()>.<endif><rule.name>(<args; separator=", ">);<\n>
<else>
<if(scope)><scope:delegateName()>.<endif><rule.name>(<args; separator=", ">);<\n>
<endif>
state.followingStackPointer--;
<checkRuleBacktrackFailure()>
>>

/** ids+=r */
ruleRefAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRef(...)>
<listLabel(elem=label,...)>
>>

```

```

/** A lexer rule reference.
 *
 * The 'rule' argument was the target rule name, but now
 * is type Rule, whose toString is same: the rule name.
 * Now though you can access full rule descriptor stuff.
 */
lexerRuleRef(rule,label,args,elementIndex,scope) ::= <<
<if(label)>
int <label>Start<elementIndex> = CharIndex;
<if(scope)><scope:delegateName().<endif>m<rule.name><(args; separator=" ">);
<checkRuleBacktrackFailure()>
<label> = new CommonToken(input, Token.INVALID_TOKEN_TYPE, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, CharIndex-1);
<else>
<if(scope)><scope:delegateName().<endif>m<rule.name><(args; separator=" ">);
<checkRuleBacktrackFailure()>
<endif>
>>

/** i+=INT in lexer */
lexerRuleRefAndListLabel(rule,label,args,elementIndex,scope) ::= <<
<lexerRuleRef(...)>
<listLabel(elem=label,...)>
>>

/** EOF in the lexer */
lexerMatchEOF(label,elementIndex) ::= <<
<if(label)>
int <label>Start<elementIndex> = CharIndex;
Match(EOF); <checkRuleBacktrackFailure()>
<labelType> <label> = new CommonToken(input, EOF, Token.DEFAULT_CHANNEL,
<label>Start<elementIndex>, CharIndex-1);
<else>
Match(EOF); <checkRuleBacktrackFailure()>
<endif>
>>

/** match ^(root children) in tree parser */
tree(root, actionsAfterRoot, children, nullableChildList,
enclosingTreeLevel, treeLevel) ::= <<
<root:element()>
<actionsAfterRoot:element()>
<if(nullableChildList)>
if (input.LA(1) == Token.DOWN)
{
Match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>

```

```

 Match(input, Token.UP, null); <checkRuleBacktrackFailure()>
}
<else>
Match(input, Token.DOWN, null); <checkRuleBacktrackFailure()>
<children:element()>
Match(input, Token.UP, null); <checkRuleBacktrackFailure()>
<endif>
>>

/** Every predicate is used as a validating predicate (even when it is
 * also hoisted into a prediction expression).
 */
validateSemanticPredicate(pred,description) ::= <<
if (!(<evalPredicate(...)>))
{
 <ruleBacktrackFailure()>
 throw new FailedPredicateException(input, "<ruleName>", "<description>");
}
>>

// F i x e d D F A (if-then-else)

dfaState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
else
{
<if(eotPredictsAlt)>
 alt<decisionNumber> = <eotPredictsAlt>;
<else>
 <ruleBacktrackFailure()>
 NoViableAltException nvae_d<decisionNumber>s<stateNumber> =
 new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <@noViableAltException()>
 throw nvae_d<decisionNumber>s<stateNumber>;<\n>
<endif>
}
>>

/** Same as a normal DFA state except that we don't examine lookahead
 * for the bypass alternative. It delays error detection but this
 * is faster, smaller, and more what people expect. For (X)? people
 * expect "if (LA(1)==X) match(X);" and that's it.
 */
dfaOptionalBlockState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse ">
>>

```

```

/** A DFA state that is actually the loopback decision of a closure
 * loop. If end-of-token (EOT) predicts any of the targets then it
 * should act like a default clause (i.e., no error can be generated).
 * This is used only in the lexer so that for ('a')* on the end of a rule
 * anything other than 'a' predicts exiting.
 */
dfaLoopbackState(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
int LA<decisionNumber>_<stateNumber> = input.LA(<k>);<\n>
<edges; separator="\nelse "><\n>
<if(eotPredictsAlt)>
<if(!edges)>
alt<decisionNumber>=<eotPredictsAlt>; <! if no edges, don't gen ELSE !>
<else>
else
{
alt<decisionNumber> = <eotPredictsAlt>;
}<\n>
<endif>
<endif>
>>

```

```

/** An accept state indicates a unique alternative has been predicted */
dfaAcceptState(alt) ::= "alt<decisionNumber> = <alt>;"

```

```

/** A simple edge with an expression. If the expression is satisfied,
 * enter to the target state. To handle gated productions, we may
 * have to evaluate some predicates for this edge.
 */
dfaEdge(labelExpr, targetState, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>) <endif>)
{
<targetState>
}
>>

```

```
// F i x e d D F A (switch case)
```

```

/** A DFA state where a SWITCH may be generated. The code generator
 * decides if this is possible: CodeGenerator.canGenerateSwitch().
 */
dfaStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
<edges; separator="\n">
default:
<if(eotPredictsAlt)>
alt<decisionNumber> = <eotPredictsAlt>;

```



```

 break;
<else>
 <ruleBacktrackFailure()>
 NoViableAltException nvae_d<decisionNumber>s<stateNumber> =
 new NoViableAltException("<description>", <decisionNumber>, <stateNumber>, input);<\n>
 <@noViableAltException()>
 throw nvae_d<decisionNumber>s<stateNumber>;<\n>
<endif>
}<\n>
>>

```

```

dfaOptionalBlockStateSwitch(k,edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
 <edges; separator="\n">
}<\n>
>>

```

```

dfaLoopbackStateSwitch(k, edges,eotPredictsAlt,description,stateNumber,semPredState) ::= <<
switch (input.LA(<k>))
{
 <edges; separator="\n"><\n>
 <if(eotPredictsAlt)>
 default:
 alt<decisionNumber> = <eotPredictsAlt>;
 break;<\n>
 <endif>
}<\n>
>>

```

```

dfaEdgeSwitch(labels, targetState) ::= <<
<labels: { case <it>: }; separator="\n">
{
 <targetState>
}
break;
>>

```

// C y c l i c D F A

```

/** The code to initiate execution of a cyclic DFA; this is used
 * in the rule to predict an alt just like the fixed DFA case.
 * The <name> attribute is inherited via the parser, lexer, ...
 */
dfaDecision(decisionNumber,description) ::= <<
alt<decisionNumber> = dfa<decisionNumber>.Predict(input);
>>

```

```

/* Dump DFA tables.
*/
cyclicDFA(dfa) ::= <<
const string DFA<dfa.decisionNumber>_eotS =
 "<dfa.javaCompressedEOT; wrap=\""+\n \">";
const string DFA<dfa.decisionNumber>_eofS =
 "<dfa.javaCompressedEOF; wrap=\""+\n \">";
const string DFA<dfa.decisionNumber>_minS =
 "<dfa.javaCompressedMin; wrap=\""+\n \">";
const string DFA<dfa.decisionNumber>_maxS =
 "<dfa.javaCompressedMax; wrap=\""+\n \">";
const string DFA<dfa.decisionNumber>_acceptS =
 "<dfa.javaCompressedAccept; wrap=\""+\n \">";
const string DFA<dfa.decisionNumber>_specialS =
 "<dfa.javaCompressedSpecial; wrap=\""+\n \">}>";
static readonly string[] DFA<dfa.decisionNumber>_transitionS = {
 <dfa.javaCompressedTransition:{s|<s; wrap=\""+\n\">"}; separator=",\n">
};

static readonly short[] DFA<dfa.decisionNumber>_eot =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eotS);
static readonly short[] DFA<dfa.decisionNumber>_eof =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_eofS);
static readonly char[] DFA<dfa.decisionNumber>_min =
DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_minS);
static readonly char[] DFA<dfa.decisionNumber>_max =
DFA.UnpackEncodedStringToUnsignedChars(DFA<dfa.decisionNumber>_maxS);
static readonly short[] DFA<dfa.decisionNumber>_accept =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_acceptS);
static readonly short[] DFA<dfa.decisionNumber>_special =
DFA.UnpackEncodedString(DFA<dfa.decisionNumber>_specialS);
static readonly short[][] DFA<dfa.decisionNumber>_transition =
DFA.UnpackEncodedStringArray(DFA<dfa.decisionNumber>_transitionS);

protected class DFA<dfa.decisionNumber> : DFA
{
 <@debugMember(>
 public DFA<dfa.decisionNumber>(BaseRecognizer recognizer)
 {
 this.recognizer = recognizer;
 this.decisionNumber = <dfa.decisionNumber>;
 this.eot = DFA<dfa.decisionNumber>_eot;
 this.eof = DFA<dfa.decisionNumber>_eof;
 this.min = DFA<dfa.decisionNumber>_min;
 this.max = DFA<dfa.decisionNumber>_max;
 this.accept = DFA<dfa.decisionNumber>_accept;
 this.special = DFA<dfa.decisionNumber>_special;
 this.transition = DFA<dfa.decisionNumber>_transition;
 }
}

```

```

 }
 <@dbgCtor()>

 override public string Description
 {
 get { return "<dfa.description>"; }
 }

 <@errorMethod()>
 }<\n>
 <if(dfa.specialStateSTs)>

 protected internal int DFA<dfa.decisionNumber>_SpecialStateTransition(DFA dfa, int s, IIntStream _input)
 //throws NoViableAltException
 {
 <if(LEXER)>
 IIntStream input = _input;
 <endif>
 <if(PARSER)>
 ITokenStream input = (ITokenStream)_input;
 <endif>
 <if(TREE_PARSER)>
 ITreeNodeStream input = (ITreeNodeStream)_input;
 <endif>
 int _s = s;
 switch (s)
 {
 <dfa.specialStateSTs:{state |
 case <i0> : <! compressed special state numbers 0..n-1 !>
 <state>}; separator="\n">
 }
 <if(backtracking)>
 if (state.backtracking > 0) {state.failed = true; return -1;}<\n>
 <endif>
 NoViableAltException nvae<dfa.decisionNumber> =
 new NoViableAltException(dfa.Description, <dfa.decisionNumber>, _s, input);
 dfa.Error(nvae<dfa.decisionNumber>);
 throw nvae<dfa.decisionNumber>;
 }<\n>
 <endif>
 >>

 /** A state in a cyclic DFA; it's a special state and part of a big switch on
 * state.
 */
 cyclicDFAState(decisionNumber,stateNumber,edges,needErrorClause,semPredState) ::= <<
 int LA<decisionNumber>_<stateNumber> = input.LA(1);<\n>

```

```

<if(semPredState)> <! get next lookahead symbol to test edges, then rewind !>
int index<decisionNumber>_<stateNumber> = input.Index();
input.Rewind();<\n>
<endif>
s = -1;
<edges; separator="\nelse ">
<if(semPredState)> <! return input cursor to state before we rewound !>
input.Seek(index<decisionNumber>_<stateNumber>);<\n>
<endif>
if (s >= 0) return s;
break;
>>

/** Just like a fixed DFA edge, test the lookahead and indicate what
 * state to jump to next if successful.
 */
cyclicDFAEdge(labelExpr, targetStateNumber, edgeNumber, predicates) ::= <<
if ((<labelExpr> <if(predicates)>&& (<predicates>) <endif>) { s = <targetStateNumber>; }<\n>
>>

/** An edge pointing at end-of-token; essentially matches any char;
 * always jump to the target.
 */
eotDFAEdge(targetStateNumber,edgeNumber, predicates) ::= <<
s = <targetStateNumber>;<\n>
>>

// D F A E X P R E S S I O N S

andPredicates(left,right) ::= "(<left> && <right>)"

orPredicates(operands) ::= "(<first(operands)><rest(operands):{o | || <o>}>)"

notPredicate(pred) ::= "!(<evalPredicate(...)>)"

evalPredicate(pred,description) ::= "<pred>"

evalSynPredicate(pred,description) ::= "<pred>()"

lookaheadTest(atom,k,atomAsInt) ::= "LA<decisionNumber>_<stateNumber> == <atom>"

/** Sometimes a lookahead test cannot assume that LA(k) is in a temp variable
 * somewhere. Must ask for the lookahead directly.
 */
isolatedLookaheadTest(atom,k,atomAsInt) ::= "input.LA(<k>) == <atom>"

lookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= <<

```

```

(LA<decisionNumber>_<stateNumber> \>= <lower> && LA<decisionNumber>_<stateNumber> \<= <upper>)
>>

isolatedLookaheadRangeTest(lower,upper,k,rangeNumber,lowerAsInt,upperAsInt) ::= "(input.LA(<k>) \>=
<lower> && input.LA(<k>) \<= <upper>)"

setTest(ranges) ::= "<ranges; separator=\\\" || \\\">"

// A T T R I B U T E S

globalAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected class <scope.name>_scope
{
 <scope.attributes:{protected internal <it.decl>;}; separator="\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

ruleAttributeScope(scope) ::= <<
<if(scope.attributes)>
protected class <scope.name>_scope
{
 <scope.attributes:{protected internal <it.decl>;}; separator="\n">
}
protected Stack <scope.name>_stack = new Stack();<\n>
<endif>
>>

returnStructName() ::= "<it.name>_return"

returnType() ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
<ruleDescriptor.grammar.recognizerName>.<ruleDescriptor:returnStructName()>
<else>
<if(ruleDescriptor.hasSingleReturnValue)>
<ruleDescriptor.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

/** Generate the C# type associated with a single or multiple return
 * values.
 */
ruleLabelType(referencedRule) ::= <<

```

```

<if(referencedRule.hasMultipleReturnValues)>
<referencedRule.grammar.recognizerName>.<referencedRule.name>_return
<else>
<if(referencedRule.hasSingleReturnValue)>
<referencedRule.singleValueReturnType>
<else>
void
<endif>
<endif>
>>

delegateName() ::= <<
<if(it.label)><it.label><else>g<it.name><endif>
>>

/** Using a type to init value map, try to init a type; if not in table
 * must be an object, default value is "null".
 */
initValue(typeName) ::= <<
<csharpTypeInitMap.(typeName)>
>>

/** Define a rule label including default value */
ruleLabelDef(label) ::= <<
<ruleLabelType(referencedRule=label.referencedRule)> <label.label.text> =
<initValue(typeName=ruleLabelType(referencedRule=label.referencedRule))>;<\n>
>>

/** Define a return struct for a rule if the code needs to access its
 * start/stop tokens, tree stuff, attributes, ... Leave a hole for
 * subgroups to stick in members.
 */
returnScope(scope) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
public class <ruleDescriptor.returnStructName()> :
<if(TREE_PARSER)>Tree<else>Parser<endif>RuleReturnScope
{
<scope.attributes:{public <it.decl>;}; separator="\n">
<@ruleReturnMembers()>
};
<endif>
>>

parameterScope(scope) ::= <<
<scope.attributes:{<it.decl>;}; separator=", ">
>>

parameterAttributeRef(attr) ::= "<attr.name>"

```

```
parameterSetAttributeRef(attr,expr) ::= "<attr.name> = <expr>";
```

```
scopeAttributeRef(scope,attr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack[<scope>_stack.Count-<negIndex>-1]).<attr.name>
<else>
<if(index)>
((<scope>_scope)<scope>_stack[<index>]).<attr.name>
<else>
((<scope>_scope)<scope>_stack.Peek()).<attr.name>
<endif>
<endif>
>>
```

```
scopeSetAttributeRef(scope,attr,expr,index,negIndex) ::= <<
<if(negIndex)>
((<scope>_scope)<scope>_stack[<scope>_stack.Count-<negIndex>-1]).<attr.name> = <expr>;
<else>
<if(index)>
((<scope>_scope)<scope>_stack[<index>]).<attr.name> = <expr>;
<else>
((<scope>_scope)<scope>_stack.Peek()).<attr.name> = <expr>;
<endif>
<endif>
>>
```

```
/** $x is either global scope or x is rule with dynamic scope; refers
 * to stack itself not top of stack. This is useful for predicates
 * like {$function.size()>0 && $function::name.equals("foo")}?
 */
isolatedDynamicScopeRef(scope) ::= "<scope>_stack"
```

```
/** reference an attribute of rule; might only have single return value */
ruleLabelRef(referencedRule,scope,attr) ::= <<
<if(referencedRule.hasMultipleReturnValues)>
((<scope> != null) ? <scope>.<attr.name> : <initValue(attr.type)>
<else>
<scope>
<endif>
>>
```

```
returnAttributeRef(ruleDescriptor,attr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name>
<else>
<attr.name>
<endif>
>>
```

```

returnSetAttributeRef(ruleDescriptor,attr,expr) ::= <<
<if(ruleDescriptor.hasMultipleReturnValues)>
retval.<attr.name> = <expr>;
<else>
<attr.name> = <expr>;
<endif>
>>

/** How to translate $tokenLabel */
tokenLabelRef(label) ::= "<label>"

/** ids+=ID {$ids} or e+=expr {$e} */
listLabelRef(label) ::= "list_<label>"

// not sure the next are the right approach

tokenLabelPropertyRef_text(scope,attr) ::= "(<scope> != null) ? <scope>.Text : null"
tokenLabelPropertyRef_type(scope,attr) ::= "(<scope> != null) ? <scope>.Type : 0"
tokenLabelPropertyRef_line(scope,attr) ::= "(<scope> != null) ? <scope>.Line : 0"
tokenLabelPropertyRef_pos(scope,attr) ::= "(<scope> != null) ? <scope>.CharPositionInLine : 0"
tokenLabelPropertyRef_channel(scope,attr) ::= "(<scope> != null) ? <scope>.Channel : 0"
tokenLabelPropertyRef_index(scope,attr) ::= "(<scope> != null) ? <scope>.TokenIndex : 0"
tokenLabelPropertyRef_tree(scope,attr) ::= "<scope>_tree"
tokenLabelPropertyRef_int(scope,attr) ::= "(<scope>!=null?int.Parse(<scope>.Text):0)"

ruleLabelPropertyRef_start(scope,attr) ::= "(<scope> != null) ? ((<labelType>)<scope>.Start) : null"
ruleLabelPropertyRef_stop(scope,attr) ::= "(<scope> != null) ? ((<labelType>)<scope>.Stop) : null"
ruleLabelPropertyRef_tree(scope,attr) ::= "(<scope> != null) ? ((<ASTLabelType>)<scope>.Tree) : null"
ruleLabelPropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
((<scope> != null) ? input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(<scope>.Start),
input.TreeAdaptor.GetTokenStopIndex(<scope>.Start)) : null)
<else>
((<scope> != null) ? input.ToString((IToken)<scope>.Start),(IToken)<scope>.Stop) : null)
<endif>
>>
ruleLabelPropertyRef_st(scope,attr) ::= "(<scope> != null) ? <scope>.ST : null"

/** Isolated $RULE ref ok in lexer as it's a Token */
lexerRuleLabel(label) ::= "<label>"

lexerRuleLabelPropertyRef_type(scope,attr) ::= "(<scope> != null) ? <scope>.Type : 0"
lexerRuleLabelPropertyRef_line(scope,attr) ::= "(<scope> != null) ? <scope>.Line : 0"
lexerRuleLabelPropertyRef_pos(scope,attr) ::= "(<scope> != null) ? <scope>.CharPositionInLine : -1"
lexerRuleLabelPropertyRef_channel(scope,attr) ::= "(<scope> != null) ? <scope>.Channel : 0"

```



```

lexerRuleLabelPropertyRef_index(scope,attr) ::= "(<scope> != null) ? <scope>.TokenIndex : 0)"
lexerRuleLabelPropertyRef_text(scope,attr) ::= "(<scope> != null) ? <scope>.Text : null)"
lexerRuleLabelPropertyRef_int(scope,attr) ::= "(<scope>!=null?int.Parse(<scope>.Text):0)"

// Somebody may ref $template or $tree or $stop within a rule:
rulePropertyRef_start(scope,attr) ::= "(<labelType>)retval.Start)"
rulePropertyRef_stop(scope,attr) ::= "(<labelType>)retval.Stop)"
rulePropertyRef_tree(scope,attr) ::= "(<ASTLabelType>)retval.Tree)"
rulePropertyRef_text(scope,attr) ::= <<
<if(TREE_PARSER)>
input.TokenStream.ToString(
input.TreeAdaptor.GetTokenStartIndex(retval.Start),
input.TreeAdaptor.GetTokenStopIndex(retval.Start))
<else>
input.ToString((IToken)retval.Start,input.LT(-1))
<endif>
>>
rulePropertyRef_st(scope,attr) ::= "retval.ST"

lexerRulePropertyRef_text(scope,attr) ::= "Text"
lexerRulePropertyRef_type(scope,attr) ::= "_type"
lexerRulePropertyRef_line(scope,attr) ::= "state.tokenStartLine"
lexerRulePropertyRef_pos(scope,attr) ::= "state.tokenStartCharPositionInLine"
lexerRulePropertyRef_index(scope,attr) ::= "-1" // undefined token index in lexer
lexerRulePropertyRef_channel(scope,attr) ::= "_channel"
lexerRulePropertyRef_start(scope,attr) ::= "state.tokenStartCharIndex"
lexerRulePropertyRef_stop(scope,attr) ::= "(CharIndex-1)"
lexerRulePropertyRef_int(scope,attr) ::= "int.Parse(<scope>.Text)"

// setting $st and $tree is allowed in local rule. everything else
// is flagged as error
ruleSetPropertyRef_tree(scope,attr,expr) ::= "retval.Tree = <expr>;"
ruleSetPropertyRef_st(scope,attr,expr) ::= "retval.ST = <expr>;"

/** How to execute an action (only when not backtracking) */
execAction(action) ::= <<
<if(backtracking)>
if (<actions.(actionScope).synpredgate>)
{
<action>
}
<else>
<action>
<endif>
>>

```

```

/** How to always execute an action even when backtracking */
execForcedAction(action) ::= "<action>"

// M I S C (properties, etc...)

bitset(name, words64) ::= <<
public static readonly BitSet <name> = new BitSet(new ulong[] { <words64: {<it>UL}; separator="," >}); <\n>
>>

codeFileExtension() ::= ".cs"

true() ::= "true"
false() ::= "false"

Found in path(s):
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/CSharp/CSharp.stg
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*/

/** Template overrides to add debugging to AST stuff. Dynamic inheritance

```

```

* hierarchy is set up as ASTDbg : AST : Dbg : Java by code generator.
*/
group ASTDbg;

parserMembers() ::= <<
protected DebugTreeAdaptor adaptor;
public void setTreeAdaptor(TreeAdaptor adaptor) {
<if(grammar.grammarIsRoot)>
 this.adaptor = new DebugTreeAdaptor(dbg,adaptor);
<else>
 this.adaptor = (DebugTreeAdaptor)adaptor; // delegator sends dbg adaptor
<endif><\n>
 <grammar.directDelegates:{g|<:g:delegateName()>.setTreeAdaptor(this.adaptor);}>
}
public TreeAdaptor getTreeAdaptor() {
 return adaptor;
}<\n>
>>

parserCtorBody() ::= <<
<super.parserCtorBody()>
>>

createListenerAndHandshake() ::= <<
DebugEventSocketProxy proxy =
 new DebugEventSocketProxy(this,port,<if(TREE_PARSER)>input.getTreeAdaptor()<else>adaptor<endif>);
setDebugListener(proxy);
set<inputStreamType>(new Debug<inputStreamType>(input,proxy));
try {
 proxy.handshake();
}
catch (IOException ioe) {
 reportError(ioe);
}
>>

@ctorForRootGrammar.finally() ::= <<
TreeAdaptor adap = new CommonTreeAdaptor();
setTreeAdaptor(adap);
proxy.setTreeAdaptor(adap);
>>

@ctorForProfilingRootGrammar.finally() ::= <<
TreeAdaptor adap = new CommonTreeAdaptor();
setTreeAdaptor(adap);
proxy.setTreeAdaptor(adap);
>>

```

```
@ctorForPredefinedListener.superClassRef() ::= "super(input, dbg);"
```

```
@ctorForPredefinedListener.finally() ::=<<<
<if(grammar.grammarIsRoot)> <! don't create new adaptor for delegates !>
TreeAdaptor adap = new CommonTreeAdaptor();
setTreeAdaptor(adap);<\n>
<endif>
>>
```

```
@rewriteElement.pregen() ::= "dbg.location(<e.line>,<e.pos>);"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-
jar/org/antlr/codegen/templates/Java/ASTDbg.stg
```

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```
/*
```

```
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```

```
*/
```

```
group AST;
```

```
@outputFile.imports() ::= <<
```

```
<@super.imports()>
```

```
<if(!TREE_PARSER)><! tree parser would already have imported !>
```

```

import org.antlr.runtime.tree.*;<\n>
<endif>
>>

@genericParser.members() ::= <<
<@super.members()>
<parserMembers()>
>>

/** Add an adaptor property that knows how to build trees */
parserMembers() ::= <<
protected TreeAdaptor adaptor = new CommonTreeAdaptor();<\n>
public void setTreeAdaptor(TreeAdaptor adaptor) {
 this.adaptor = adaptor;
 <grammar.directDelegates: {g|<g:delegateName()>.setTreeAdaptor(this.adaptor);}>
}
public TreeAdaptor getTreeAdaptor() {
 return adaptor;
}
>>

@returnScope.ruleReturnMembers() ::= <<
<ASTLabelType> tree;
public Object getTree() { return tree; }
>>

/** Add a variable to track rule's return AST */
ruleDeclarations() ::= <<
<super.ruleDeclarations()>
<ASTLabelType> root_0 = null;<\n>
>>

ruleLabelDefs() ::= <<
<super.ruleLabelDefs()>
<[ruleDescriptor.tokenLabels,ruleDescriptor.wildcardTreeLabels,
 ruleDescriptor.wildcardTreeListLabels]:{<ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.tokenListLabels: {<ASTLabelType> <it.label.text>_tree=null;}; separator="\n">
<ruleDescriptor.allTokenRefsInAltsWithRewrites
 :{RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>");}; separator="\n">
<ruleDescriptor.allRuleRefsInAltsWithRewrites
 :{RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule <it>");};
separator="\n">
>>

/** When doing auto AST construction, we must define some variables;
* These should be turned off if doing rewrites. This must be a "mode"
* as a rule could have both rewrite and AST within the same alternative

```

```

* block.
*/
@alt.declarations() ::= <<
<if(autoAST)>
<if(outerAlt)>
<if(!rewriteMode)>
root_0 = (<ASTLabelType>)adaptor.nil();<\n>
<endif>
<endif>
<endif>
>>

// Tracking Rule Elements

/** ID and track it for use in a rewrite rule */
tokenRefTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)> <! Track implies no auto AST construction!>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.add(<label>);<\n>
>>

/** ids+=ID and track it for use in a rewrite rule; adds to ids *and*
 * to the tracking list stream_ID for use in the rewrite.
 */
tokenRefTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefTrack(...)>
<listLabel(elem=label,...)>
>>

/** ^(ID ...) track for rewrite */
tokenRefRuleRootTrack(token,label,elementIndex,hetero) ::= <<
<tokenRefBang(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<token>.add(<label>);<\n>
>>

/** Match ^(label+=TOKEN ...) track for rewrite */
tokenRefRuleRootTrackAndListLabel(token,label,elementIndex,hetero) ::= <<
<tokenRefRuleRootTrack(...)>
<listLabel(elem=label,...)>
>>

/** rule when output=AST and tracking for rewrite */
ruleRefTrack(rule,label,elementIndex,args,scope) ::= <<
<super.ruleRef(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule.name>.add(<label>.getTree());
>>

/** x+=rule when output=AST and tracking for rewrite */
ruleRefTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<

```

```

<ruleRefTrack(...)>
<listLabel(elem=label+".getTree()",...)>
>>

/** ^(rule ...) rewrite */
ruleRefRuleRootTrack(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRoot(...)>
<if(backtracking)>if (<actions.(actionScope).synpredgate>) <endif>stream_<rule>.add(<label>.getTree());
>>

/** ^(x+=rule ...) rewrite */
ruleRefRuleRootTrackAndListLabel(rule,label,elementIndex,args,scope) ::= <<
<ruleRefRuleRootTrack(...)>
<listLabel(elem=label+".getTree()",...)>
>>

// R e w r i t e

rewriteCode(
alts, description,
referencedElementsDeep, // ALL referenced elements to right of ->
referencedTokenLabels,
referencedTokenListLabels,
referencedRuleLabels,
referencedRuleListLabels,
referencedWildcardLabels,
referencedWildcardListLabels,
rewriteBlockLevel, enclosingTreeLevel, treeLevel) ::=
<<

// AST REWRITE
// elements: <referencedElementsDeep; separator=", ">
// token labels: <referencedTokenLabels; separator=", ">
// rule labels: <referencedRuleLabels; separator=", ">
// token list labels: <referencedTokenListLabels; separator=", ">
// rule list labels: <referencedRuleListLabels; separator=", ">
// wildcard labels: <[referencedWildcardLabels,referencedWildcardListLabels]; separator=", ">
<if(backtracking)>
if (<actions.(actionScope).synpredgate>) {<n>
<endif>
<prevRuleRootRef(>).tree = root_0;
<rewriteCodeLabels(>
root_0 = (<ASTLabelType>)adaptor.nil();
<alts:rewriteAlt(); separator="else ">
<! if tree parser and rewrite=true !>
<if(TREE_PARSER)>
<if(rewriteMode)>
<prevRuleRootRef(>).tree = (<ASTLabelType>)adaptor.rulePostProcessing(root_0);

```

```

input.replaceChildren(adaptor.getParent(retval.start),
 adaptor.getChildIndex(retval.start),
 adaptor.getChildIndex(_last),
 retval.tree);
<endif>
<endif>
<! if parser or tree-parser && rewrite!=true, we need to set result !>
<if(!TREE_PARSER)>
<prevRuleRootRef(>.tree = root_0;
<else>
<if(!rewriteMode)>
<prevRuleRootRef(>.tree = root_0;
<endif>
<endif>
<endif>
<if(backtracking)>
}
<endif>
>>

rewriteCodeLabels() ::= <<
<referencedTokenLabels
: {RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
separator="\n"
>
<referencedTokenListLabels
: {RewriteRule<rewriteElementType>Stream stream_<it>=new
RewriteRule<rewriteElementType>Stream(adaptor,"token <it>",<it>)};
separator="\n"
>
<referencedWildcardLabels
: {RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};
separator="\n"
>
<referencedWildcardListLabels
: {RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"wildcard <it>",<it>)};
separator="\n"
>
<referencedRuleLabels
: {RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"rule
<it>",<it>!=null?<it>.tree:null)};
separator="\n"
>
<referencedRuleListLabels
: {RewriteRuleSubtreeStream stream_<it>=new RewriteRuleSubtreeStream(adaptor,"token <it>",<it>)};
separator="\n"
>
>>

```



```

/** Generate code for an optional rewrite block; note it uses the deep ref'd element
 * list rather shallow like other blocks.
 */
rewriteOptionalBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
if (<referencedElementsDeep:{el | stream_<el>.hasNext()}; separator="||">) {
 <alt>
}
<referencedElementsDeep:{el | stream_<el>.reset();<n>}>
>>

rewriteClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
// <fileName>:<description>
while (<referencedElements:{el | stream_<el>.hasNext()}; separator="||">) {
 <alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

rewritePositiveClosureBlock(
 alt,rewriteBlockLevel,
 referencedElementsDeep, // all nested refs
 referencedElements, // elements in immediately block; no nested blocks
 description) ::=
<<
if (!(<referencedElements:{el | stream_<el>.hasNext()}; separator="||">)) {
 throw new RewriteEarlyExitException();
}
while (<referencedElements:{el | stream_<el>.hasNext()}; separator="||">) {
 <alt>
}
<referencedElements:{el | stream_<el>.reset();<n>}>
>>

rewriteAlt(a) ::= <<
// <a.description>
<if(a.pred)>

```

```

if (<a.pred>) {
 <a.alt>
}<\n>
<else>
{
 <a.alt>
}<\n>
<endif>
>>

/** For empty rewrites: "r : ... -> ;" */
rewriteEmptyAlt() ::= "root_0 = null;"

rewriteTree(root,children,description,enclosingTreeLevel,treeLevel) ::= <<
// <fileName>:<description>
{
<ASTLabelType> root_<treeLevel> = (<ASTLabelType>)adaptor.nil();
<root:rewriteElement()>
<children:rewriteElement()>
adaptor.addChild(root_<enclosingTreeLevel>, root_<treeLevel>);
}<\n>
>>

rewriteElementList(elements) ::= "<elements:rewriteElement()>"

rewriteElement(e) ::= <<
<@pregen()>
<e.el>
>>

/** Gen ID or ID[args] */
rewriteTokenRef(token,elementIndex,hetero,args) ::= <<
adaptor.addChild(root_<treeLevel>, <createRewriteNodeFromElement(...)>);<\n>
>>

/** Gen $label ... where defined via label=ID */
rewriteTokenLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen $label ... where defined via label+=ID */
rewriteTokenListLabelRef(label,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextNode());<\n>
>>

/** Gen ^($label ...) */
rewriteTokenLabelRefRoot(label,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>

```

>>

```
/** Gen ^($label ...) where label+=... */
rewriteTokenListLabelRefRoot ::= rewriteTokenLabelRefRoot
```

```
/** Gen ^(ID ...) or ^(ID[args] ...) */
rewriteTokenRefRoot(token,elementIndex,hetero,args) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<createRewriteNodeFromElement(...)>,
root_<treeLevel>);<\n>
>>
```

```
rewriteImaginaryTokenRef(args,token,hetero,elementIndex) ::= <<
adaptor.addChild(root_<treeLevel>, <createImaginaryNode(tokenType=token, ...)>);<\n>
>>
```

```
rewriteImaginaryTokenRefRoot(args,token,hetero,elementIndex) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<createImaginaryNode(tokenType=token, ...)>,
root_<treeLevel>);<\n>
>>
```

```
/** plain -> {foo} action */
rewriteAction(action) ::= <<
root_0 = <action>;<\n>
>>
```

```
/** What is the name of the previous value of this rule's root tree? This
* let's us refer to $rule to mean previous value. I am reusing the
* variable 'tree' sitting in retval struct to hold the value of root_0 right
* before I set it during rewrites. The assign will be to retval.tree.
*/
prevRuleRootRef() ::= "retval"
```

```
rewriteRuleRef(rule) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<rule>.nextTree());<\n>
>>
```

```
rewriteRuleRefRoot(rule) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<rule>.nextNode(), root_<treeLevel>);<\n>
>>
```

```
rewriteNodeAction(action) ::= <<
adaptor.addChild(root_<treeLevel>, <action>);<\n>
>>
```

```
rewriteNodeActionRoot(action) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(<action>, root_<treeLevel>);<\n>
>>
```

```

/** Gen $ruleLabel ... where defined via ruleLabel=rule */
rewriteRuleLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen $ruleLabel ... where defined via ruleLabel+=rule */
rewriteRuleListLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel=rule */
rewriteRuleLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>

/** Gen ^($ruleLabel ...) where ruleLabel+=rule */
rewriteRuleListLabelRefRoot(label) ::= <<
root_<treeLevel> = (<ASTLabelType>)adaptor.becomeRoot(stream_<label>.nextNode(), root_<treeLevel>);<\n>
>>

rewriteWildcardLabelRef(label) ::= <<
adaptor.addChild(root_<treeLevel>, stream_<label>.nextTree());<\n>
>>

createImaginaryNode(tokenType,hetero,args) ::= <<
<if(hetero)>
<! new MethodNode(IDLabel, args) !>
new <hetero>(<tokenType><if(args)>, <args; separator=", "><endif>)
<else>
(<ASTLabelType>)adaptor.create(<tokenType>, <args; separator=", "><if(!args)>"<tokenType>"<endif>)
<endif>
>>

createRewriteNodeFromElement(token,hetero,args) ::= <<
<if(hetero)>
new <hetero>(stream_<token>.nextToken()<if(args)>, <args; separator=", "><endif>)
<else>
<if(args)> <! must create new node from old !>
adaptor.create(<token>, <args; separator=", ">)
<else>
stream_<token>.nextNode()
<endif>
<endif>
>>

```

Found in path(s):

\* /opt/cola/permits/1204005060\_1631853129.56/0/antlr-3-1-3-sources-4-

jar/org/antlr/codegen/templates/Java/AST.stg

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\*/

/\*\* Template overrides to add debugging to AST stuff. Dynamic inheritance

\* hierarchy is set up as ASTDbg : AST : Dbg : C# by code generator.

\*/

group ASTDbg;

parserMembers() ::= <<

protected DebugTreeAdaptor adaptor;

public ITreeAdaptor TreeAdaptor

{

get {

<if(grammar.grammarIsRoot)>

return this.adaptor;

<else>

this.adaptor = (DebugTreeAdaptor)adaptor; // delegator sends dbg adaptor

<endif><\n>

```

 <grammar.directDelegates: {g|<g:delegateName()>.TreeAdaptor = this.adaptor;}>
 }
 set { this.adaptor = new DebugTreeAdaptor(dbg, value); }
}<\n>
>>

```

```

parserCtorBody() ::= <<
<super.parserCtorBody()>
>>

```

```

createListenerAndHandshake() ::= <<
DebugEventSocketProxy proxy = new DebugEventSocketProxy(this, port, adaptor);
DebugListener = proxy;
<!
Original line follows, replaced by the next two ifs:
set<inputStreamType>(new Debug<inputStreamType>(input,proxy));
!>
<if(PARSER)>
TokenStream = new DebugTokenStream(input,proxy);<\n>
<endif>
<if(TREE_PARSER)>
TokenStream = new DebugTreeNodeStream(input,proxy);<\n>
<endif>
try {
 proxy.Handshake();
} catch (IOException ioe) {
 ReportError(ioe);
}
>>

```

```

@ctorForRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
proxy.TreeAdaptor = adap;
>>

```

```

@ctorForProfilingRootGrammar.finally() ::= <<
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;
proxy.TreeAdaptor = adap;
>>

```

```

@ctorForPredefinedListener.superClassRef() ::= "base(input, dbg)"

```

```

@ctorForPredefinedListener.finally() ::= <<
<if(grammar.grammarIsRoot)> <! don't create new adaptor for delegates !>
ITreeAdaptor adap = new CommonTreeAdaptor();
TreeAdaptor = adap;<\n>

```

```
<endif>
```

```
>>
```

```
@rewriteElement.pregen() ::= "dbg.Location(<e.line>,<e.pos>);"
```

Found in path(s):

```
* /opt/cola/permits/1204005060_1631853129.56/0/antlr-3-1-3-sources-4-jar/org/antlr/codegen/templates/CSharp/ASTDbg.stg
```

## 1.73 babel-standalone 6.24.0

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## 1.74 findbugs-jsr305 3.0.1

### 1.74.1 Available under license :

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```
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4_0_0.xsd">
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 <parent>
 <groupId>org.sonatype.oss</groupId>
 <artifactId>oss-parent</artifactId>
 <version>7</version>
```

```

 <relativePath />
 </parent>

 <groupId>com.google.code.findbugs</groupId>
 <artifactId>jsr305</artifactId>
 <version>3.0.1</version>
 <packaging>jar</packaging>

 <url>http://findbugs.sourceforge.net/</url>
 <name>FindBugs-jsr305</name>
 <description>JSR305 Annotations for Findbugs</description>
 <licenses>
 <license>
 <name>The Apache Software License, Version 2.0</name>
 <url>http://www.apache.org/licenses/LICENSE-2.0.txt</url>
 <distribution>repo</distribution>
 </license>
 </licenses>

 <prerequisites>
 <maven>3.0</maven>
 </prerequisites>

 <scm>
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 <developerConnection>scm:git:https://code.google.com/p/jsr-305/</developerConnection>
 <url>https://code.google.com/p/jsr-305/</url>
 </scm>

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 <artifactId>maven-javadoc-plugin</artifactId>
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 </goals>
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 </plugins>
 </build>

```



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<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-source-plugin</artifactId>
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<execution>
 <id>attach-sources</id>
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 </goals>
</execution>
</executions>
</plugin>
<plugin>
<groupId>org.apache.felix</groupId>
<artifactId>maven-bundle-plugin</artifactId>
<version>2.4.0</version>
<extensions>>true</extensions>
<executions>
<execution>
 <id>bundle-manifest</id>
 <phase>process-classes</phase>
 <goals>
 <goal>manifest</goal>
 </goals>
</execution>
</executions>
<configuration>
<instructions>
 <Bundle-SymbolicName>org.jsr-305</Bundle-SymbolicName>
 <Bundle-Name>${project.name}</Bundle-Name>
 <Export-Package>javax.annotation;javax.annotation.concurrent;javax.annotation.meta</Export-Package>
</instructions>
</configuration>
</plugin>
<plugin>
<groupId>org.apache.maven.plugins</groupId>
<artifactId>maven-jar-plugin</artifactId>
<version>2.4</version>
<configuration>

```

```

 <archive>
 <manifestFile>${project.build.outputDirectory}/META-INF/MANIFEST.MF</manifestFile>
 </archive>
 </configuration>
</plugin>
<plugin>
 <groupId>org.sonatype.plugins</groupId>
 <artifactId>nexus-staging-maven-plugin</artifactId>
 <version>1.6.3</version>
 <extensions>>true</extensions>
 <configuration>
 <serverId>ossrh</serverId>
 <nexusUrl>https://oss.sonatype.org/</nexusUrl>
 <autoReleaseAfterClose>>true</autoReleaseAfterClose>
 </configuration>
</plugin>
<plugin>
 <groupId>org.apache.maven.plugins</groupId>
 <artifactId>maven-gpg-plugin</artifactId>
 <version>1.5</version>
 <executions>
 <execution>
 <id>sign-artifacts</id>
 <phase>verify</phase>
 <goals>
 <goal>sign</goal>
 </goals>
 </execution>
 </executions>
</plugin>
</plugins>
</build>
</project>

```

Found in path(s):

\* /opt/cola/permits/1012082893\_1648836067.25/0/jsr305-3-0-1-10-jar/META-INF/maven/com.google.code.findbugs/jsr305/pom.xml

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Manifest-Version: 1.0

Export-Package: javax.annotation;uses="javax.annotation.meta";version="3.0.1",javax.annotation.concurrent;version="3.0.1",javax.annotation.meta;uses="javax.annotation";version="3.0.1"

Built-By: lan

Tool: Bnd-2.1.0.20130426-122213

Bundle-Name: FindBugs-jsr305

Created-By: Apache Maven Bundle Plugin

Build-Jdk: 1.7.0\_80

Bundle-Version: 3.0.1  
Bnd-LastModified: 1444367176355  
Bundle-ManifestVersion: 2  
Bundle-Description: JSR305 Annotations for Findbugs  
Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0.txt>  
Bundle-SymbolicName: org.jsr-305  
Archiver-Version: Plexus Archiver

Found in path(s):

\* /opt/cola/permits/1012082893\_1648836067.25/0/jsr305-3-0-1-10-jar/META-INF/MANIFEST.MF

## 1.75 guava-internalfuturefailureaccess-and-internalfutures 1.0.1

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\* /opt/cola/permits/1130987386\_1612872111.26/0/failureaccess-1-0-1-sources-

jar/com/google/common/util/concurrent/internal/InternalFutureFailureAccess.java

\* /opt/cola/permits/1130987386\_1612872111.26/0/failureaccess-1-0-1-sources-

jar/com/google/common/util/concurrent/internal/InternalFutures.java

## 1.76 apache-http-client 4.5.3

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```
* /opt/cola/permits/1685982207_1684868973.5515728/0/selenium-edge-driver-3-11-0-sources-
jar/org/openqa/selenium/edge/EdgeDriverService.java
* /opt/cola/permits/1685982207_1684868973.5515728/0/selenium-edge-driver-3-11-0-sources-
jar/org/openqa/selenium/edge/EdgeOptions.java
* /opt/cola/permits/1685982207_1684868973.5515728/0/selenium-edge-driver-3-11-0-sources-
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## 1.79 ngx-contextmenu 4.1.0

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```
*/opt/cola/permits/1021437169_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/MapOrientedComponentConfigurator.java
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\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/UriConverter.java

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\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/composite/CollectionConverter.java

\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/AbstractConfigurationConverter.java

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\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/lookup/ConverterLookup.java

\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/composite/ObjectWithFieldsConverter.java

\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/DoubleConverter.java

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\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/composite/ArrayConverter.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/StringConverter.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/BasicComponentConfigurator.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/composite/PropertiesConverter.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/AbstractBasicConverter.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/basic/IntConverter.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/lookup/DefaultConverterLookup.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-jar/org/codehaus/plexus/component/configurator/converters/ConfigurationConverter.java  
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jar/org/codehaus/plexus/component/repository/exception/ComponentDescriptorUnmarshallingException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/DisposePhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/container/initialization/InitializeComponentRegistryPhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/builder/ComponentBuilder.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/configuration/xml/XmlPlexusConfiguration.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/StopPhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/composition/CycleDetectedInComponentGraphException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/ServiceablePhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/configurator/expression/ExpressionEvaluator.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/configuration/PlexusConfiguration.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/manager/ComponentManager.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/ConfigurablePhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/ComponentRegistry.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/factory/ComponentInstantiationException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/MutablePlexusContainer.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/repository/exception/ComponentRepositoryException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/repository/exception/ComponentLookupException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/repository/DefaultComponentRepository.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/lifecycle/phase/Phase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/AutoConfigurePhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/PlexusContainerLocator.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/Configurable.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-

jar/org/codehaus/plexus/container/initialization/AbstractCoreComponentInitializationPhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/repository/ComponentRequirement.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/lifecycle/DefaultLifecycleHandlerManager.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/discovery/ComponentDiscoveryEvent.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/logging/LoggerManager.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/lifecycle/LifecycleHandler.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/builder/ComponentBuildListener.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/factory/java/JavaComponentFactory.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/container/initialization/InitializeComponentDiscovererManagerPhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/container/initialization/ContainerInitializationPhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/PhaseExecutionException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/PlexusContainerException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/container/initialization/InitializeUserConfigurationSourcePhase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/composition/DefaultCompositionResolver.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/repository/ComponentDependency.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/logging/AbstractLogger.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/logging/console/ConsoleLoggerManager.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/PlexusTestCase.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/discovery/ComponentDiscoveryListener.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/Disposable.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/collections/AbstractComponentCollection.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/component/repository/exception/ComponentConfigurationException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/container/initialization/ContainerInitializationException.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-  
jar/org/codehaus/plexus/context/DefaultContext.java  
\* /opt/cola/permits/1021437169\_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-

```
jar/org/codehaus/plexus/personality/plexus/lifecycle/phase/InitializePhase.java
* /opt/cola/permits/1021437169_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-
jar/org/codehaus/plexus/component/collections/ComponentList.java
* /opt/cola/permits/1021437169_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-
jar/org/codehaus/plexus/component/builder/XBeanComponentBuilder.java
* /opt/cola/permits/1021437169_1684882843.9765522/0/plexus-container-default-1-5-5-sources-1-
jar/org/codehaus/plexus/component/repository/exception/ComponentProfileException.java
```

# 1.81 io.spray:spray-json\_2.11 1.3.2

## 1.81.1 Available under license :

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```
/*
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* Inspired by a similar implementation by Nathan Hamblen
* (https://github.com/n8han/Databinder-Dispatch)
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*/
```

Found in path(s):

```
* /opt/cola/permits/1685982351_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/JsValue.scala
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```

```
/*
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```



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Found in path(s):

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-  
jar/spray/json/JsonParser.scala

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Found in path(s):

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-  
jar/spray/json/ProductFormatsInstances.scala

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\* Original implementation (C) 2009-2011 Debasish Ghosh

\* Adapted and extended in 2011 by Mathias Doenitz

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Found in path(s):

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/AdditionalFormats.scala  
\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/BasicFormats.scala  
\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/DefaultJsonProtocol.scala  
\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/CollectionFormats.scala  
\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/JsonFormat.scala  
\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/StandardFormats.scala  
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Found in path(s):  
\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/ProductFormats.scala  
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Found in path(s):

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/PrettyPrinter.scala

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/CompactPrinter.scala

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/JsonPrinter.scala

\* /opt/cola/permits/1685982351\_1684944477.517231/0/spray-json-2-11-1-3-2-sources-jar/spray/json/package.scala

## 1.82 netty-project 4.0.51.Final

### 1.82.1 Available under license :

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/internal/logging/JdkLoggerFactory.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/http/websocketx/server/WebSocketServer.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/factorial/FactorialServer.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/marshalling/LimitingByteInput.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/AbstractChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/internal/logging/InternalLogLevel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/handler/codec/CodecException.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/SwappedByteBuf.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/stream/ChunkedInput.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpPostStandardRequestDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/snoop/HttpSnoopServer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketHandshakeException.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/serialization/CompactObjectOutputStream.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/socket/oio/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/marshalling/MarshallerProvider.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/FileRegion.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/concurrent/GlobalEventExecutor.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker07.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/CharsetUtil.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/HttpRequestDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/udt/echo/bytes/ByteEchoServerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/udt/echo/rendezvous/MsgEchoPeerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/concurrent/EventExecutorGroup.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/internal/logging/AbstractInternalLogger.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/snoop/HttpSnoopServerInitializer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/AbstractHttpData.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/file/HttpStaticFileServerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/serialization/ObjectEncoderOutputStream.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/FailedChannelFuture.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/bytes/ByteArrayDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/example/udt/echo/message/MsgEchoServer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/nio/AbstractNioChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/stream/ChunkedStream.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/compression/ZlibEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/telnet/TelnetClientHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/socket/nio/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/IllegalReferenceCountException.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/QueryStringEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/HttpServerCodec.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/AttributeKey.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/objectecho/ObjectEchoServerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/AbstractServerChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketClientHandshaker07.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/compression/DecompressionException.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/CookieDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/timeout/IdleStateHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/base64/Base64Decoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/UnpooledUnsafeDirectByteBuf.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/serialization/CompatibleObjectEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/sctp/SctpEchoServer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/oio/AbstractOioMessageChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/FileUpload.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/nio/AbstractNioMessageChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/ChannelPipeline.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/handler/codec/DelimiterBasedFrameDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/internal/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/socket/DefaultDatagramChannelConfig.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/socket/InternetProtocolFamily.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/TimerTask.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/sctp/oio/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/echo/EchoClientHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/Attribute.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/HttpPostRequestEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/socks/UnknownSocksRequest.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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jar/io/netty/handler/codec/http/websocketx/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/UnpooledHeapByteBuf.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/socket/ServerSocketChannelConfig.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/websocketx/server/WebSocketFrameHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/UniqueName.java  
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jar/io/netty/channel/socket/DatagramChannelConfig.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/DefaultChannelConfig.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/proxy/HexDumpProxyInitializer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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jar/io/netty/channel/local/LocalAddress.java  
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jar/io/netty/handler/stream/ChunkedFile.java  
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jar/io/netty/handler/codec/compression/JdkZlibEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/Channel.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/http/websocketx/WebSocket00FrameDecoder.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/AbstractByteBuf.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/discard/DiscardServer.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/logging/package-info.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/DuplicatedByteBuf.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/factorial/NumberEncoder.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/group/DefaultChannelGroupFuture.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/telnet/TelnetServer.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/http/DefaultCookie.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/NotSslRecordException.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/worldclock/WorldClockClient.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/http/multipart/HttpData.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/http/DefaultHttpRequest.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/marshalling/CompatibleMarshallingEncoder.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/ReplayingDecoderByteBuf.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/udt/echo/message/MsgEchoServerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/HttpContentEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/rtsp/RtspResponseDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/WebSocketServerHandshaker00.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/serialization/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/socket/oio/OioDatagramChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/UnpooledByteBufAllocator.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/portunification/PortUnificationServer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/handler/codec/marshalling/CompatibleMarshallingDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/oio/AbstractOioChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/concurrent/FailedFuture.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/EventLoopGroup.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/RecvByteBufAllocator.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/serialization/ClassResolver.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/ServerChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/multipart/DefaultHttpDataFactory.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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jar/io/netty/handler/codec/http/LastHttpContent.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/localecho/LocalEcho.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/websocketx/server/WebSocketIndexPageHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/PooledByteBuf.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/udt/DefaultUdtChannelConfig.java  
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jar/io/netty/handler/codec/TooLongFrameException.java  
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jar/io/netty/buffer/ByteBufAllocator.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/local/LocalChannelRegistry.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/compression/JZlibDecoder.java  
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jar/io/netty/util/HashedWheelTimer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/VoidChannelPromise.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/timeout/IdleState.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/Cookie.java  
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jar/io/netty/channel/AbstractChannelHandlerContext.java  
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jar/io/netty/channel/socket/ServerSocketChannel.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/qotm/QuoteOfTheMomentClient.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/ChannelOption.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/socks/SocksMessageEncoder.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/udt/echo/rendezvous/MsgEchoPeerOne.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/securechat/SecureChatClient.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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jar/io/netty/handler/codec/bytes/ByteArrayEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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jar/io/netty/channel/SucceededChannelFuture.java  
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jar/io/netty/util/internal/logging/JdkLogger.java

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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/util/internal/logging/InternalLogger.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/util/internal/logging/Log4JLogger.java
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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/channel/pool/ChannelPoolHandler.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
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jar/io/netty/util/DomainMappingBuilder.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/HttpExpectationFailedEvent.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/internal/tcnative/Library.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/SctpChannelOption.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/rxtx/DefaultRxtxChannelConfig.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/rxtx/package-info.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslEngine.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/ReferenceCountedOpenSslClientContext.java

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jar/io/netty/handler/codec/haproxy/HAProxyMessage.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/haproxy/HAProxyCommand.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslNpnApplicationProtocolNegotiator.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/haproxy/HAProxyMessageDecoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/internal/InternalThreadLocalMap.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/handler/ssl/util/InsecureTrustManagerFactory.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/websocketx/benchmarkserver/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/websocketx/benchmarkserver/WebSocketServer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/epoll/EpollTcpInfo.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/epoll/EpollDatagramChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/epoll/EpollEventLoopGroup.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/websocketx/client/WebSocketClient.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/spdy/SpdyFrameDecoderDelegate.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/spdy/server/SpdyOrHttpHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/internal/UnpaddedInternalThreadLocalMap.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/haproxy/HAProxyConstants.java  
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jar/io/netty/example/spdy/client/SpdyClient.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/internal/IntegerHolder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/IdentityCipherSuiteFilter.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslSessionStats.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/epoll/EpollServerSocketChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/JdkSslContext.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/collection/package-info.java  
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jar/io/netty/handler/ssl/JdkNpnApplicationProtocolNegotiator.java  
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jar/io/netty/handler/ssl/JettyAlpnSslEngine.java  
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jar/io/netty/handler/codec/haproxy/package-info.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/CipherSuiteFilter.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/PendingWriteQueue.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslClientContext.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/haproxy/HAProxyProxiedProtocol.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/util/FingerprintTrustManagerFactory.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ipfilter/IpFilterRule.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/spdy/server/SpdyServer.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/example/http/websocketx/benchmarkserver/WebSocketServerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/OpenSslX509Certificate.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/ssl/JdkAlpnApplicationProtocolNegotiator.java  
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 * License for the specific language governing permissions and limitations
 * under the License.
 */
/*
 * Written by Robert Harder and released to the public domain, as explained at
 * http://creativecommons.org/licenses/publicdomain
 */
/**
 * Utility class for {@link ByteBuf} that encodes and decodes to and from
 * Base64 notation.
 * <p>
```

\* The encoding and decoding algorithm in this class has been derived from  
\* <http://iharder.sourceforge.net/current/java/base64/>>Robert Harder's Public Domain  
\* Base64 Encoder/Decoder</a>.  
\*/

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/base64/Base64.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/sctp/package-info.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/traffic/ChannelTrafficShapingHandler.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/sctp/SctpMessageToMessageDecoder.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/nio/NioUdtAcceptorChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/nio/NioUdtByteConnectorChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/nio/NioUdtMessageAcceptorChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/nio/NioUdtMessageConnectorChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/nio/NioUdtByteAcceptorChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/nio/NioUdtByteRendezvousChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/handler/codec/sctp/SctpInboundByteStreamHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/sctp/SctpMessageCompletionHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/traffic/GlobalTrafficShapingHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/udt/nio/NioUdtMessageRendezvousChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/udt/nio/NioUdtProvider.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/traffic/package-info.java

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 * distributed under the License is distributed on an "AS IS" BASIS, WITHOUT
 * WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the
 * License for the specific language governing permissions and limitations
 * under the License.
 */
/**
 * Set the {@code TCP_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.
 * Keys can only be set on, not read to prevent a potential leak, as they are confidential.
 * Allowing them being read would mean anyone with access to the channel could get them.
 */
/**
 * Set the {@code TCP_QUICKACK} option on the socket. See TCP_QUICKACK
 * for more details.
 */
```

Found in path(s):

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/epoll/EpollSocketChannelConfig.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyStreamFrame.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/ConnectTimeoutException.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

jar/io/netty/util/concurrent/AbstractEventExecutorGroup.java  
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jar/io/netty/util/internal/ReadOnlyIterator.java  
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jar/io/netty/handler/codec/spdy/SpdyHeaderBlockRawEncoder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/concurrent/CompleteFuture.java  
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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/FullHttpRequest.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
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jar/io/netty/buffer/AdvancedLeakAwareByteBuf.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/ReferenceCounted.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/ByteBufHolder.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/util/concurrent/AbstractEventExecutor.java  
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jar/io/netty/example/worldclock/WorldClockProtocol.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/socks/SocksResponseType.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyHttpDecoder.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/http/helloworld/HttpHelloWorldServerInitializer.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/socks/SocksCmdType.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/udt/DefaultUdtServerChannelConfig.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyDataFrame.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/DefaultMessageSizeEstimator.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/group/ChannelMatchers.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/spdy/DefaultSpdyPingFrame.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/spdy/SpdySynStreamFrame.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/internal/PendingWrite.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/AbstractDerivedByteBuf.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/http/FullHttpRequest.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/AddressedEnvelope.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/internal/EmptyArrays.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/EmptyByteBuf.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/concurrent/Future.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/FixedCompositeByteBuf.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/socks/SocksProtocolVersion.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/internal/RecyclableArrayList.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/DefaultChannelProgressivePromise.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/group/ChannelGroup.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/http/HttpHeaderEntity.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/codec/spdy/SpdyStreamStatus.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/ChannelProgressivePromise.java

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jar/io/netty/channel/sctp/SctpMessage.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/sctp/SctpChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/channel/sctp/nio/NioSctpServerChannel.java

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/worldclock/WorldClockProtocol.proto  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/SctpChannelConfig.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/SctpNotificationHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/DefaultSctpChannelConfig.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/nio/NioSctpChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/SctpServerChannel.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/sctp/SctpServerChannelConfig.java

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/\*\*

\* Set the {@code TCP\_MD5SIG} option on the socket. See {@code linux/tcp.h} for more details.

\* Keys can only be set on, not read to prevent a potential leak, as they are confidential.

\* Allowing them being read would mean anyone with access to the channel could get them.

\*/

Found in path(s):

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/epoll/EpollServerSocketChannelConfig.java

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*/
/*
* Written by Robert Harder and released to the public domain, as explained at
* http://creativecommons.org/licenses/publicdomain
*/
/**
* Enumeration of supported Base64 dialects.
* <p>
* The internal lookup tables in this class has been derived from
* Robert Harder's Public Domain
* Base64 Encoder/Decoder.
*/
```

Found in path(s):

```
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codecs/base64/Base64Dialect.java
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```
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/traffic/TrafficCounter.java
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```
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/util/internal/logging/FormattingTuple.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/util/internal/logging/MessageFormatter.java
```

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/handler/codec/http/websocketx/Utf8Validator.java

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jar/io/netty/util/internal/MathUtil.java

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-  
jar/io/netty/buffer/PooledHeapByteBuf.java

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```

/**
 * Handles or intercepts a {@link ChannelInboundInvoker} or {@link ChannelOutboundInvoker} operation, and
 * forwards it
 * to the next handler in a {@link ChannelPipeline}.
 *
 * <h3>Sub-types</h3>
 * <p>
 * {@link ChannelHandler} itself does not provide many methods. To handle a
 * a {@link ChannelInboundInvoker} or {@link ChannelOutboundInvoker} operation
 * you need to implement its sub-interfaces. There are many different sub-interfaces
 * which handles inbound and outbound operations.
 *
 * But the most useful for developers may be:
 *
 * {@link ChannelInboundHandlerAdapter} handles and intercepts inbound operations
 * {@link ChannelOutboundHandlerAdapter} handles and intercepts outbound operations
 *
 *
 * You will also find more detailed explanation from the documentation of
 * each sub-interface on how an event is interpreted when it goes upstream and
 * downstream respectively.
 *
 * <h3>The context object</h3>
 * <p>
 * A {@link ChannelHandler} is provided with a {@link ChannelHandlerContext}
 * object. A {@link ChannelHandler} is supposed to interact with the
 * {@link ChannelPipeline} it belongs to via a context object. Using the
 * context object, the {@link ChannelHandler} can pass events upstream or
 * downstream, modify the pipeline dynamically, or store the information
 * (using {@link AttributeKey}s) which is specific to the handler.
 *
 * <h3>State management</h3>
 *
 * A {@link ChannelHandler} often needs to store some stateful information.
 * The simplest and recommended approach is to use member variables:
 * <pre>
 * public interface Message {
 * // your methods here
 * }
 *
 * public class DataServerHandler extends {@link SimpleChannelInboundHandler}<Message> {
 *
 * private boolean loggedIn;
 *
 * {@code @Override}
 * public void channelRead0({@link ChannelHandlerContext} ctx, Message message) {
 * {@link Channel} ch = e.getChannel();
 * if (message instanceof LoginMessage) {

```

```

* authenticate((LoginMessage) message);
* loggedIn = true;
* } else (message instanceof GetDataMessage) {
* if (loggedIn) {
* ch.write(fetchSecret((GetDataMessage) message));
* } else {
* fail();
* }
* }
* }
* }
* ...
* }
* </pre>

```

\* Because the handler instance has a state variable which is dedicated to one connection, you have to create a new handler instance for each new channel to avoid a race condition where a unauthenticated client can get the confidential information:

```

* <pre>
* // Create a new handler instance per channel.
* // See { @link ChannelInitializer#initChannel(Channel)}.
* public class DataServerInitializer extends { @link ChannelInitializer}<>{ @link Channel}> {
* { @code @Override}
* public void initChannel({ @link Channel} channel) {
* channel.pipeline().addLast("handler", new DataServerHandler());
* }
* }
* }
* </pre>

```

\* <h4>Using { @link AttributeKey}</h4>

\* Although it's recommended to use member variables to store the state of a handler, for some reason you might not want to create many handler instances. In such a case, you can use { @link AttributeKey}s which is provided by { @link ChannelHandlerContext}:

```

* <pre>
* public interface Message {
* // your methods here
* }
* }
* { @code @Sharable}
* public class DataServerHandler extends { @link SimpleChannelInboundHandler}<>Message> {
* private final { @link AttributeKey}<>{ @link Boolean}> auth =
* { @link AttributeKey#valueOf(String) AttributeKey.valueOf("auth")};
* }
* { @code @Override}
* public void channelRead({ @link ChannelHandlerContext} ctx, Message message) {
* { @link Attribute}<>{ @link Boolean}> attr = ctx.attr(auth);

```

```

* { @link Channel} ch = ctx.channel();
* if (message instanceof LoginMessage) {
* authenticate((LoginMessage) o);
* attr.set(true);
* } else (message instanceof GetDataMessage) {
* if (Boolean.TRUE.equals(attr.get())) {
* ch.write(fetchSecret((GetDataMessage) o));
* } else {
* fail();
* }
* }
* }
* }
* ...
* }
* </pre>

```

\* Now that the state of the handler is attached to the { @link ChannelHandlerContext}, you can add the same handler instance to different pipelines:

```

* <pre>
* public class DataServerInitializer extends { @link ChannelInitializer}&It;{ @link Channel}> {
*
* private static final DataServerHandler SHARED = new DataServerHandler();
*
* { @code @Override}
* public void initChannel({ @link Channel} channel) {
* channel.pipeline().addLast("handler", SHARED);
* }
* }
* </pre>

```

\* <h4>The { @code @Sharable} annotation</h4>

\* <p>In the example above which used an { @link AttributeKey}, you might have noticed the { @code @Sharable} annotation.</p>

\* <p>If a { @link ChannelHandler} is annotated with the { @code @Sharable} annotation, it means you can create an instance of the handler just once and add it to one or more { @link ChannelPipeline}s multiple times without a race condition.</p>

\* <p>If this annotation is not specified, you have to create a new handler instance every time you add it to a pipeline because it has unshared state such as member variables.</p>

\* <p>This annotation is provided for documentation purpose, just like <a href="http://www.javaconcurrencyinpractice.com/annotations/doc/">the JCIP annotations</a>.</p>

\* <h3>Additional resources worth reading</h3>

\* <p>  
\* Please refer to the { @link ChannelHandler}, and  
\* { @link ChannelPipeline} to find out more about inbound and outbound operations,  
\* what fundamental differences they have, how they flow in a pipeline, and how to handle  
\* the operation in your application.  
\*/

Found in path(s):

\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/ChannelHandler.java

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\* A decoder that splits the received { @link ByteBuf}s dynamically by the  
\* value of the length field in the message. It is particularly useful when you  
\* decode a binary message which has an integer header field that represents the  
\* length of the message body or the whole message.

\* <p>

\* { @link LengthFieldBasedFrameDecoder} has many configuration parameters so  
\* that it can decode any message with a length field, which is often seen in  
\* proprietary client-server protocols. Here are some example that will give  
\* you the basic idea on which option does what.

\*

\* <h3>2 bytes length field at offset 0, do not strip header</h3>

\*

\* The value of the length field in this example is <tt>12 (0x0C)</tt> which  
\* represents the length of "HELLO, WORLD". By default, the decoder assumes  
\* that the length field represents the number of the bytes that follows the  
\* length field. Therefore, it can be decoded with the simplistic parameter  
\* combination.

\* <pre>

\* <b>lengthFieldOffset</b> = <b>0</b>

\* <b>lengthFieldLength</b> = <b>2</b>

```

* lengthAdjustment = 0
* initialBytesToStrip = 0 (= do not strip header)
*
* BEFORE DECODE (14 bytes) AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Length | Actual Content |
* | 0x000C | "HELLO, WORLD" | | 0x000C | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>

```

\* <h3>2 bytes length field at offset 0, strip header</h3>

\* Because we can get the length of the content by calling  
\* { @link ByteBuf#readableBytes() }, you might want to strip the length  
\* field by specifying <tt>initialBytesToStrip</tt>. In this example, we  
\* specified <tt>2</tt>, that is same with the length of the length field, to  
\* strip the first two bytes.

```

* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = 0
* initialBytesToStrip = 2 (= the length of the Length field)

```

```

* BEFORE DECODE (14 bytes) AFTER DECODE (12 bytes)
* +-----+-----+ +-----+-----+
* | Length | Actual Content |---->| Actual Content |
* | 0x000C | "HELLO, WORLD" | | "HELLO, WORLD" |
* +-----+-----+ +-----+-----+
* </pre>

```

\* <h3>2 bytes length field at offset 0, do not strip header, the length field  
\* represents the length of the whole message</h3>

\* In most cases, the length field represents the length of the message body  
\* only, as shown in the previous examples. However, in some protocols, the  
\* length field represents the length of the whole message, including the  
\* message header. In such a case, we specify a non-zero  
\* <tt>lengthAdjustment</tt>. Because the length value in this example message  
\* is always greater than the body length by <tt>2</tt>, we specify <tt>-2</tt>  
\* as <tt>lengthAdjustment</tt> for compensation.

```

* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 2
* lengthAdjustment = -2 (= the length of the Length field)
* initialBytesToStrip = 0

```

```

* BEFORE DECODE (14 bytes) AFTER DECODE (14 bytes)
* +-----+-----+ +-----+-----+

```

```
* | Length | Actual Content |---->| Length | Actual Content |
* | 0x000E | "HELLO, WORLD" | | 0x000E | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+-----+
* </pre>
```

\* <h3>3 bytes length field at the end of 5 bytes header, do not strip header</h3>

\* The following message is a simple variation of the first example. An extra header value is prepended to the message. <tt>lengthAdjustment</tt> is zero again because the decoder always takes the length of the prepended data into account during frame length calculation.

```
* <pre>
* lengthFieldOffset = 2 (= the length of Header 1)
* lengthFieldLength = 3
* lengthAdjustment = 0
* initialBytesToStrip = 0
```

```
* BEFORE DECODE (17 bytes) AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+-----+-----+
* | Header 1 | Length | Actual Content |---->| Header 1 | Length | Actual Content |
* | 0xCAFE | 0x00000C | "HELLO, WORLD" | | 0xCAFE | 0x00000C | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+-----+
* </pre>
```

\* <h3>3 bytes length field at the beginning of 5 bytes header, do not strip header</h3>

\* This is an advanced example that shows the case where there is an extra header between the length field and the message body. You have to specify a positive <tt>lengthAdjustment</tt> so that the decoder counts the extra header into the frame length calculation.

```
* <pre>
* lengthFieldOffset = 0
* lengthFieldLength = 3
* lengthAdjustment = 2 (= the length of Header 1)
* initialBytesToStrip = 0
```

```
* BEFORE DECODE (17 bytes) AFTER DECODE (17 bytes)
* +-----+-----+-----+-----+-----+-----+
* | Length | Header 1 | Actual Content |---->| Length | Header 1 | Actual Content |
* | 0x00000C | 0xCAFE | "HELLO, WORLD" | | 0x00000C | 0xCAFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+-----+-----+
* </pre>
```

\* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header, strip the first header field and the length field</h3>

\* This is a combination of all the examples above. There are the prepended header before the length field and the extra header after the length field.

```

* The prepended header affects the <tt>lengthFieldOffset</tt> and the extra
* header affects the <tt>lengthAdjustment</tt>. We also specified a non-zero
* <tt>initialBytesToStrip</tt> to strip the length field and the prepended
* header from the frame. If you don't want to strip the prepended header, you
* could specify <tt>0</tt> for <tt>initialBytesToSkip</tt>.
* <pre>
* lengthFieldOffset = 1 (= the length of HDR1)
* lengthFieldLength = 2
* lengthAdjustment = 1 (= the length of HDR2)
* initialBytesToStrip = 3 (= the length of HDR1 + LEN)
*
* BEFORE DECODE (16 bytes) AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |----->| HDR2 | Actual Content |
* | 0xCA | 0x000C | 0xFE | "HELLO, WORLD" | | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+
* </pre>
*
* <h3>2 bytes length field at offset 1 in the middle of 4 bytes header,
* strip the first header field and the length field, the length field
* represents the length of the whole message</h3>
*
* Let's give another twist to the previous example. The only difference from
* the previous example is that the length field represents the length of the
* whole message instead of the message body, just like the third example.
* We have to count the length of HDR1 and Length into <tt>lengthAdjustment</tt>.
* Please note that we don't need to take the length of HDR2 into account
* because the length field already includes the whole header length.
* <pre>
* lengthFieldOffset = 1
* lengthFieldLength = 2
* lengthAdjustment = -3 (= the length of HDR1 + LEN, negative)
* initialBytesToStrip = 3
*
* BEFORE DECODE (16 bytes) AFTER DECODE (13 bytes)
* +-----+-----+-----+-----+ +-----+-----+
* | HDR1 | Length | HDR2 | Actual Content |----->| HDR2 | Actual Content |
* | 0xCA | 0x0010 | 0xFE | "HELLO, WORLD" | | 0xFE | "HELLO, WORLD" |
* +-----+-----+-----+-----+ +-----+-----+
* </pre>
* @see LengthFieldPrepender
*/

```

Found in path(s):

```

* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/LengthFieldBasedFrameDecoder.java

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jar/io/netty/handler/codec/http/cors/CorsConfig.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/cors/CorsHandler.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/example/http/cors/OkResponseHandler.java
```

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\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/internal/tcnative/SniHostNameMatcher.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/SslCloseCompletionEvent.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/OptionalSslHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/SuppressForbidden.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/ByteBufAllocatorMetric.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/SslCompletionEvent.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/util/internal/ReflectionUtil.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/PooledByteBufAllocatorMetric.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/buffer/ByteBufAllocatorMetricProvider.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/socket/oio/DefaultOioDatagramChannelConfig.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/epoll/UnixChannelUtil.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/example/uptime/UptimeServerHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/ocsp/OcspClientHandler.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/channel/socket/ChannelOutputShutdownEvent.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-jar/io/netty/handler/ssl/Java9SslEngine.java  
\* /opt/cola/permits/1685982679\_1684946680.2505348/0/netty-all-4-0-51-final-sources-

```
jar/io/netty/util/NettyRuntime.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/ssl/ocsp/package-info.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/internal/tcnative/NativeStaticallyReferencedJniMethods.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/channel/socket/oio/OioDatagramChannelConfig.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/ssl/Conscrypt.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/util/internal/LongAdderCounter.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/channel/socket/ChannelOutputShutdownException.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/ssl/Java9SslUtils.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/channel/nio/SelectedSelectionKeySetSelector.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/example/uptime/UptimeServer.java
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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
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* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket13FrameDecoder.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket08FrameEncoder.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket07FrameEncoder.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket13FrameEncoder.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket08FrameDecoder.java
* /opt/cola/permits/1685982679_1684946680.2505348/0/netty-all-4-0-51-final-sources-
jar/io/netty/handler/codec/http/websocketx/WebSocket07FrameDecoder.java
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## 1.83 commons-logging 1.1

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# 1.84 antlr 2.7.2

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## 1.85 jaxen 1.1.6

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- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/support/HListable.scala
- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/Parser.scala
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- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/CharUtils.scala
- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/support/OpTreeContext.scala
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- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/support/RunResult.scala
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- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/DynamicRuleDispatch.scala
- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/support/Lifter.scala
- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-jar/org/parboiled2/RuleDSLBasics.scala
- \* /opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-

```
jar/org/parboiled2/support/ActionOpsSupport.scala
* /opt/cola/permits/1685982403_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-
jar/org/parboiled2/package.scala
* /opt/cola/permits/1685982403_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-
jar/org/parboiled2/Base64Parsing.scala
* /opt/cola/permits/1685982403_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-
jar/org/parboiled2/support/Unpack.scala
```

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```
/**
```

```
* A very fast and memory efficient class to encode and decode to and from BASE64 in full accordance
* with RFC 2045.


```

```
* On Windows XP sp1 with 1.4.2_04 and later ;), this encoder and decoder is about 10 times faster
* on small arrays (10 - 1000 bytes) and 2-3 times as fast on larger arrays (10000 - 1000000 bytes)
* compared to <code>sun.misc.Encoder()/Decoder()</code>.


```

```
*
```

```
* On byte arrays the encoder is about 20% faster than Jakarta Commons Base64 Codec for encode and
* about 50% faster for decoding large arrays. This implementation is about twice as fast on very small
* arrays (< 30 bytes). If source/destination is a <code>String</code> this
* version is about three times as fast due to the fact that the Commons Codec result has to be recoded
* to a <code>String</code> from <code>byte[]</code>, which is very expensive.


```

```
*
```

```
* This encode/decode algorithm doesn't create any temporary arrays as many other codecs do, it only
* allocates the resulting array. This produces less garbage and it is possible to handle arrays twice
* as large as algorithms that create a temporary array. (E.g. Jakarta Commons Codec). It is unknown
* whether Sun's <code>sun.misc.Encoder()/Decoder()</code> produce temporary arrays but since performance
* is quite low it probably does.


```

```
*
```

```
* The encoder produces the same output as the Sun one except that the Sun's encoder appends
* a trailing line separator if the last character isn't a pad. Unclear why but it only adds to the
* length and is probably a side effect. Both are in conformance with RFC 2045 though.

* Commons codec seem to always add a trailing line separator.


```

```
*
```

```
* Note!
```

```
* The encode/decode method pairs (types) come in three versions with the exact same algorithm and
* thus a lot of code redundancy. This is to not create any temporary arrays for transcoding to/from different
* format types. The methods not used can simply be commented out.


```

```
*
```

```
* There is also a "fast" version of all decode methods that works the same way as the normal ones, but
* has a few demands on the decoded input. Normally though, these fast versions should be used if the source if
* the input is known and it hasn't been tampered with.


```

```
*
```

```
* If you find the code useful or you find a bug, please send me a note at base64 @ miginfocom . com.
```

```
*
```

```
* Licence (BSD):
```

```
* =====
```

```
*
```

```
* Copyright (c) 2004, Mikael Grev, MiG InfoCom AB. (base64 @ miginfocom . com)
```

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\*  
\* @version 2.2  
\* @author Mikael Grev  
\*     Date: 2004-aug-02  
\*     Time: 11:31:11  
\*  
\* Adapted in 2009 by Mathias Doenitz.  
\*/

Found in path(s):

\*/opt/cola/permits/1685982403\_1684947068.8871937/0/parboiled-2-11-2-1-0-sources-  
jar/org/parboiled2/util/Base64.java

## 1.88 selenium-chromium-driver 4.0.0-alpha-5

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```
* /opt/cola/permits/1685982601_1684869187.270248/0/selenium-chromium-driver-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/chromium/ChromiumDriver.java
* /opt/cola/permits/1685982601_1684869187.270248/0/selenium-chromium-driver-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/chromium/ChromiumOptions.java
* /opt/cola/permits/1685982601_1684869187.270248/0/selenium-chromium-driver-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/chromium/ChromiumDevToolsLocator.java
* /opt/cola/permits/1685982601_1684869187.270248/0/selenium-chromium-driver-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/chromium/ChromiumDriverCommandExecutor.java
* /opt/cola/permits/1685982601_1684869187.270248/0/selenium-chromium-driver-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/chromium/ChromiumDriverInfo.java
* /opt/cola/permits/1685982601_1684869187.270248/0/selenium-chromium-driver-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/chromium/ChromiumDriverCommand.java
```

## 1.89 littleproxy-mitm-module 2.1.5

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*/
```

Found in path(s):

```
* /opt/cola/permits/1685982416_1684946345.226783/0/mitm-2-1-5-sources-
jar/net/lightbody/bmp/mitm/trustmanager/InsecureTrustManagerFactory.java
```

# 1.90 apache-commons-lang 3.7

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# 1.91 jetty-websocket-client 9.2.20.v20161216

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Manifest-Version: 1.0

Archiver-Version: Plexus Archiver

Created-By: Apache Maven Bundle Plugin

Built-By: joakim

Build-Jdk: 1.7.0\_75

Implementation-Vendor: Eclipse.org - Jetty  
Implementation-Version: 9.2.20.v20161216  
url: <http://www.eclipse.org/jetty>  
Export-Package: org.eclipse.jetty.websocket.client;version="9.2.20",org.eclipse.jetty.websocket.client.masks;version="9.2.20",org.eclipse.jetty.websocket.client.io;version="9.2.20"  
Bundle-Classpath: .  
Tool: Bnd-1.15.0  
Bundle-Name: Jetty :: Websocket :: Client  
Bundle-RequiredExecutionEnvironment: JavaSE-1.7  
Bundle-Copyright: Copyright (c) 2008-2016 Mort Bay Consulting Pty. Ltd.  
Bundle-Vendor: Eclipse Jetty Project  
Bundle-Version: 9.2.20.v20161216  
Bnd-LastModified: 1481929339298  
Bundle-ManifestVersion: 2  
Bundle-Description: Administrative parent pom for Jetty modules  
Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0>, <http://www.eclipse.org/org/documents/epl-v10.php>  
Import-Package: javax.net.ssl,org.eclipse.jetty.io;version="[9.0,10.0)",org.eclipse.jetty.io.ssl;version="[9.0,10.0)",org.eclipse.jetty.util;version="[9.0,10.0)",org.eclipse.jetty.util.component;version="[9.0,10.0)",org.eclipse.jetty.util.log;version="[9.0,10.0)",org.eclipse.jetty.util.ssl;version="[9.0,10.0)",org.eclipse.jetty.util.thread;version="[9.0,10.0)",org.eclipse.jetty.websocket.api;version="[9.0,10.0)",org.eclipse.jetty.websocket.api.extensions;version="[9.0,10.0)",org.eclipse.jetty.websocket.common;version="[9.0,10.0)",org.eclipse.jetty.websocket.common.events;version="[9.0,10.0)",org.eclipse.jetty.websocket.common.extensions;version="[9.0,10.0)",org.eclipse.jetty.websocket.common.io;version="[9.0,10.0)",org.eclipse.jetty.websocket.common.io.http;version="[9.0,10.0)"  
Bundle-SymbolicName: org.eclipse.jetty.websocket.client  
Bundle-DocURL: <http://www.eclipse.org/jetty>

Found in path(s):

\* /opt/cola/permits/1104749390\_1684945554.3531687/0/websocket-client-9-2-20-v20161216-jar/META-INF/MANIFEST.MF

## 1.92 jcommander-library 1.27

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Manifest-Version: 1.0

Archiver-Version: Plexus Archiver

Created-By: 1.6.0\_22 (Apple Inc.)

Built-By: cbeust

Build-Jdk: 1.6.0\_22

Export-Package: com.beust.jcommander;uses:="com.beust.jcommander.converters,com.beust.jcommander.internal,com.beust.jcommander.validators";version="1.27.0",com.beust.jcommander.converters;uses:="com.beust.jcommander";version="1.27.0",com.beust.jcommander.defaultprovider;uses:="com.beust.jcommander";version="1.27.0",com.beust.jcommander.internal;uses:="com.beust.jcommander,com.beust.jcommander.converters";version="1.27.0",com.beust.jcommander.validators;uses:="com.beust.jcommander";version="1.27.0"

Bundle-Version: 1.27.0

Tool: Bnd-0.0.357

Bundle-Name: JCommander

Bnd-LastModified: 1341511572089

Bundle-ManifestVersion: 2

Bundle-Description: A Java framework to parse command line options with annotations.

Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0.txt>

Bundle-SymbolicName: com.beust.jcommander

Import-Package: com.beust.jcommander;version="1.27.0",com.beust.jcommander.converters;version="1.27.0",com.beust.jcommander.defaultprovider;version="1.27.0",com.beust.jcommander.internal;version="1.27.0",com.beust.jcommander.validators;version="1.27.0"

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# 1.93 asm-tree 5.0.3

## 1.94 phantomjsdriver 1.4.0

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Found in path(s):

- \* /opt/cola/permits/1140654630\_1614865324.49/0/phantomjsdriver-1-4-0-sources-2-jar/org/openqa/selenium/phantomjs/MultiSessionCommandExecutor.java
- \* /opt/cola/permits/1140654630\_1614865324.49/0/phantomjsdriver-1-4-0-sources-2-jar/org/openqa/selenium/phantomjs/PhantomJSDriverService.java
- \* /opt/cola/permits/1140654630\_1614865324.49/0/phantomjsdriver-1-4-0-sources-2-jar/org/openqa/selenium/phantomjs/PhantomJSDriver.java
- \* /opt/cola/permits/1140654630\_1614865324.49/0/phantomjsdriver-1-4-0-sources-2-jar/org/openqa/selenium/phantomjs/PhantomJSCommandExecutor.java

# 1.95 apache-xml-commons 1.4.01

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xml-commons/java/external/LICENSE.dom-software.txt \$Id: LICENSE.dom-software.txt 734314 2009-01-14 03:33:27Z mrglavas \$

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\* /opt/cola/permits/1130988593\_1612871608.58/0/j2objc-annotations-1-1-sources-4-jar/com/google/j2objc/annotations/AutoreleasePool.java  
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\* /opt/cola/permits/1130988593\_1612871608.58/0/j2objc-annotations-1-1-sources-4-jar/com/google/j2objc/annotations/RetainedLocalRef.java  
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\* /opt/cola/permits/1130988593\_1612871608.58/0/j2objc-annotations-1-1-sources-4-jar/com/google/j2objc/annotations/ReflectionSupport.java



```
* /opt/cola/permits/1130988593_1612871608.58/0/j2objc-annotations-1-1-sources-4-
jar/com/google/j2objc/annotations/RetainedWith.java
* /opt/cola/permits/1130988593_1612871608.58/0/j2objc-annotations-1-1-sources-4-
jar/com/google/j2objc/annotations/J2ObjCIncompatible.java
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# 1.97 org.seleniumhq.selenium:selenium-json 4.0.0-alpha-5

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* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/TypeToken.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/JsonOutput.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/InstanceCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/StaticInitializerCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/BooleanCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/JsonTypeCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/UrlCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/JsonType.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/Json.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/Input.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/NumberCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/SimplePropertyDescriptor.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/MapCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/StringCoercer.java
```

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* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/Types.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/JsonException.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/ObjectCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/CollectionCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/TypeCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/UuidCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/UriCoercer.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/EnumCoercer.java
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jar/org/openqa/selenium/json/JsonInputIterator.java
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jar/org/openqa/selenium/json/JsonInput.java
* /opt/cola/permits/1685982735_1684946879.0474112/0/selenium-json-4-0-0-alpha-5-sources-
jar/org/openqa/selenium/json/PropertySetting.java

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sources-jar/org/apache/commons/validator/FormSet.java  
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sources-jar/org/apache/commons/validator/util/ValidatorUtils.java  
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sources-jar/org/apache/commons/validator/routines/AbstractFormatValidator.java  
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sources-jar/org/apache/commons/validator/CreditCardValidator.java  
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sources-jar/org/apache/commons/validator/routines/PercentValidator.java  
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sources-jar/org/apache/commons/validator/ISBNValidator.java  
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sources-jar/org/apache/commons/validator/util/Flags.java  
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sources-jar/org/apache/commons/validator/UrlValidator.java  
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sources-jar/org/apache/commons/validator/FormSetFactory.java  
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sources-jar/org/apache/commons/validator/ValidatorResults.java  
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sources-jar/org/apache/commons/validator/routines/CurrencyValidator.java  
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sources-jar/org/apache/commons/validator/routines/AbstractNumberValidator.java  
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sources-jar/org/apache/commons/validator/ValidatorResult.java  
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\* /opt/cola/permits/1020252148\_1611210463.64/0/com-springsource-org-apache-commons-validator-1-3-1-sources-jar/org/apache/commons/validator/routines/AbstractCalendarValidator.java  
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## 1.103 apache-xerces2-j 2.11.0

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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASObject.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASNamedObjectMap.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASAttributeDeclaration.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/DocumentAS.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/DOMImplementationAS.java

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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASDataType.java  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASNotationDeclaration.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/CharacterDataEditAS.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASModel.java  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/DOMASBuilder.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/ASContentModel.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/DOMASException.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/DOMASWriter.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom3/as/DocumentEditAS.java

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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/MonthDV.java

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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/xs/traversers/XSAttributeChecker.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/YearMonthDV.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/XSSimpleTypeDecl.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/DayDV.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/xs/traversers/XSDUniqueOrKeyTraverser.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/MonthDayDV.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/xs/XMLSchemaValidator.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/DurationDV.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/AbstractDateTimeDV.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/xs/traversers/XSDKeyrefTraverser.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/TimeDV.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/dv/xs/YearDV.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/xs/XSModelGroupImpl.java

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```

*/
/**
 * DOM Level 3 LS CR - Experimental.
 * Create a new LSParser. The newly constructed parser may
 * then be configured by means of its DOMConfiguration
 * object, and used to parse documents by means of its parse
 * method.
 * @param mode The mode argument is either
 * MODE_SYNCHRONOUS or MODE_ASYNCHRONOUS, if
 * mode is MODE_SYNCHRONOUS then the
 * LSParser that is created will operate in synchronous
 * mode, if it's MODE_ASYNCHRONOUS then the
 * LSParser that is created will operate in asynchronous
 * mode.
 * @param schemaType An absolute URI representing the type of the schema
 * language used during the load of a Document using the
 * newly created LSParser. Note that no lexical checking
 * is done on the absolute URI. In order to create a
 * LSParser for any kind of schema types (i.e. the
 * LSParser will be free to use any schema found), use the value
 * null.
 * <p>Note: For W3C XML Schema ["http://www.w3.org/2001/XMLSchema". For XML DTD \["http://www.w3.org/TR/REC-xml". Other Schema languages
 * are outside the scope of the W3C and therefore should recommend an
 * absolute URI in order to use this method.
 * @return The newly created LSParser object. This
 * LSParser is either synchronous or asynchronous
 * depending on the value of the mode argument.
 * <p>Note: By default, the newly created LSParser
 * does not contain a DOMErrorHandler, i.e. the value of
 * the "null. However, implementations
 * may provide a default error handler at creation time. In that case,
 * the initial value of the "error-handler" configuration
 * parameter on the new created LSParser contains a
 * reference to the default error handler.
 * @exception DOMException
 * NOT_SUPPORTED_ERR: Raised if the requested mode or schema type is
 * not supported.
*/

```

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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/impl/xs/traversers/XSDGroupTraverser.java

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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-jar/org/apache/xerces/dom/DeferredCDATASectionImpl.java

\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-



jar/org/apache/xerces/util/XML11Char.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/dom/SecuritySupport.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/impl/xs/opti/TextImpl.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/wml/dom/WMLPostfieldElementImpl.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/wml/WMLOptgroupElement.java  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/jaxp/validation/XMLSchemaFactory.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
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jar/org/apache/xerces/util/SymbolTable.java  
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jar/org/apache/xerces/jaxp/validation/StAXValidatorHelper.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/impl/dv/xs/UnionDV.java  
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jar/org/apache/xerces/dom/DocumentTypeImpl.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/parsers/ObjectFactory.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/wml/WMLDoElement.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/impl/xs/PSVLErrorList.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/wml/dom/WMLNoopElementImpl.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/html/dom/HTMLFontElementImpl.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/impl/dtd/DTDGrammarBucket.java  
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jar/org/apache/xerces/xni/XMLDocumentFragmentHandler.java  
\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
jar/org/apache/xerces/impl/xs/XSDeclarationPool.java  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
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\* /opt/cola/permits/1000067752\_1649800830.18/0/xercesimpl-2-11-0-sources-1-  
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*/
/**
* used to check the 3 constraints against each complex type
* (should be each model group):
* Unique Particle Attribution, Particle Derivation (Restriction),
* Element Declarations Consistent.
*/
```

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```
* /opt/cola/permits/1000067752_1649800830.18/0/xercesimpl-2-11-0-sources-1-
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```

## 1.104 scala 2.11.8

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not-a-legal-formal-parameter-tuple.scala:2: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple2,
or consider a pattern matching anonymous function: `{ case (a, b) => ... }
val x: ((Int, Int) => Int) = (((a, b)) => a)
 ^
```

not-a-legal-formal-parameter-tuple.scala:3: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple2,
or consider a pattern matching anonymous function: `{ case (param1, param2) => ... }
val y: ((Int, Int, Int) => Int) = (((a, !!)) => a)
 ^
```

not-a-legal-formal-parameter-tuple.scala:4: error: not a legal formal parameter.

Note: Tuples cannot be directly destructured in method or function parameters.

```
Either create a single parameter accepting the Tuple3,
or consider a pattern matching anonymous function: `{ case (param1, ..., param3) => ... }
val z: ((Int, Int, Int) => Int) = (((a, NotAPatternVariableName, c)) => a)
 ^
```

three errors found

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jar/com/google/javascript/rhino/JSDocInfoBuilder.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/RecordTypeBuilder.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/ArrowType.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/ErrorFunctionType.java  
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jar/com/google/javascript/rhino/testing/BaseJSTypeTestCase.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/testing/TestErrorReporter.java  
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jar/com/google/javascript/rhino/jstype/UnionType.java  
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jar/com/google/javascript/rhino/jstype/SimpleSlot.java  
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jar/com/google/javascript/rhino/SimpleErrorReporter.java  
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jar/com/google/javascript/rhino/jstype/FunctionParamBuilder.java  
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jar/com/google/javascript/rhino/jstype/FunctionBuilder.java  
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jar/com/google/javascript/rhino/jstype/AllType.java  
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jar/com/google/javascript/rhino/jstype/TemplateTypeMapReplacer.java  
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jar/com/google/javascript/rhino/JSTypeExpression.java  
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jar/com/google/javascript/rhino/SourcePosition.java  
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jar/com/google/javascript/rhino/jstype/NamedType.java  
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jar/com/google/javascript/rhino/jstype/FunctionType.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/UnknownType.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/JSTypeRegistry.java  
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jar/com/google/javascript/rhino/jstype/NumberType.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/NoObjectType.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/jstype/ObjectType.java  
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jar/com/google/javascript/rhino/jstype/BooleanType.java

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jar/com/google/javascript/rhino/jstype/ModificationVisitor.java  
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- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/AnalyzePrototypeProperties.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CollapseProperties.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ExploitAssigns.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/GlobalNamespace.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/TypeCheck.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ProcessClosurePrimitives.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/SyntacticScopeCreator.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CompilerPass.java

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- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/parsing/Comment.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/PersistentMap.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/lint/CheckNullableReturn.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ES6ModuleLoader.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/InferConsts.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/NaivePersistentMap.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/parsing/CommentWrapper.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/DeclaredGlobalExternsOnWindow.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/ObjectKind.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/GatherExternProperties.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CompilerOptionsValidator.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/TypeEnv.java

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- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/JsMessageExtractor.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/NameAnonymousFunctionsMapped.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/NodeUtil.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/MessageBundle.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/RenameVars.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/VarCheck.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CodeConsumer.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CodeGenerator.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CheckLevel.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/PeepholeRemoveDeadCode.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/PeepholeFoldConstants.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/JSError.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ConstCheck.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/NameAnonymousFunctions.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/NodeNameExtractor.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ReplaceMessages.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/RenameProperties.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/Scope.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/NodeTraversal.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/AnonymousFunctionNamingCallback.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

jar/com/google/javascript/jscomp/Compiler.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

jar/com/google/javascript/jscomp/TypedScopeCreator.java

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// We make a special exception when the entire cfgNode is a chain

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jar/com/google/javascript/jscomp/newtypes/FunctionTypeBuilder.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

jar/com/google/javascript/jscomp/newtypes/ObjectType.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

jar/com/google/javascript/jscomp/InstrumentMemoryAllocPass.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/fuzzing/StringNumberGenerator.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/fuzzing/ExpressionFuzzer.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/fuzzing/SourceElementFuzzer.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/fuzzing/GetPropFuzzer.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/fuzzing/TryFuzzer.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/QualifiedName.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/fuzzing/DiscreteDistribution.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/DeclaredTypeRegistry.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/newtypes/FunctionType.java

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/DisambiguatePrivateProperties.java

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* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/fuzzing/TernaryExprFuzzer.java
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/fuzzing/StringFuzzer.java
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/fuzzing/BooleanFuzzer.java
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/fuzzing/ExprStmtFuzzer.java
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/MinimizedCondition.java
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```
Found in path(s):
```

```
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/instrumentation_template.proto
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```

```
/*
```

```
*
```

```
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jar/com/google/javascript/rhino/Node.java

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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/graph/package.html

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/rhino/package.html

\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-



```
jar/com/google/javascript/jscomp/package.html
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/jscomp/parsing/package.html
* /opt/cola/permits/1685982637_1684869272.732495/0/closure-compiler-v20140407-sources-1-
jar/com/google/javascript/rhino/jstype/package.html
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Found in path(s):
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```

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Found in path(s):
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jar/com/google/javascript/jscomp/CodePrinter.java
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Found in path(s):

- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/FunctionRewriter.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CssRenamingMap.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/parsing/NullErrorReporter.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/FunctionArgumentInjector.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/debugging/sourcemap/SourceMapConsumer.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/FileInstrumentationData.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/CompilationLevel.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/Result.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/web/service/common/Protocol.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/parsing/IRFactory.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/Denormalize.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/OptimizeArgumentsArray.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/AstParallelizer.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/debugging/sourcemap/SourceMapping.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/parsing/JsDocTokenStream.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/GatherRawExports.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ExportTestFunctions.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/MemoizedScopeCreator.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/UseSite.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/web/service/common/ErrorCode.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/javascript/jscomp/ObjectPropertyStringPreprocess.java
- \* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

jar/com/google/debugging/sourcemap/SourceMapGenerator.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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jar/com/google/javascript/jscomp/CheckLevelLegacy.java  
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jar/com/google/debugging/sourcemap/SourceMapParseException.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

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jar/com/google/javascript/jscomp/GatherSideEffectSubexpressionsCallback.java  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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jar/com/google/debugging/sourcemap/SourceMapGeneratorFactory.java  
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jar/com/google/javascript/jscomp/AbstractCommandLineRunner.java  
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jar/com/google/javascript/jscomp/DevirtualizePrototypeMethods.java  
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jar/com/google/javascript/jscomp/webservice/common/AbstractWebServiceException.java  
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jar/com/google/javascript/jscomp/DefinitionsRemover.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/PropertyRenamingPolicy.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/AstChangeProxy.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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jar/com/google/javascript/jscomp/CoverageInstrumentationCallback.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/parsing/JsDocToken.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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jar/com/google/javascript/jscomp/CheckMissingGetCssName.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/TypeInferencePass.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/SourceFile.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/testing/SimpleSourceExcerptProvider.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/debugging/sourcemap/FilePosition.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/CodeChangeHandler.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/ReplaceIdGenerators.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/MaybeReachingVariableUse.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-

jar/com/google/javascript/jscomp/TypeValidator.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/deps/SimpleDependencyInfo.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/FunctionToBlockMutator.java  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/CheckEventfulObjectDisposal.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/JvmMetrics.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/InlineProperties.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/ant/Warning.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/AngularPass.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/js/base.js  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/ReplaceMessagesForChrome.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/ErrorHandler.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/CleanupPasses.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/CheckSuspiciousCode.java  
\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-  
jar/com/google/javascript/jscomp/ClosureRewriteClass.java  
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\* /opt/cola/permits/1685982637\_1684869272.732495/0/closure-compiler-v20140407-sources-1-jar/com/google/debugging/sourcemap/package.html

# 1.106 google-collections 1.0

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- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Serialization.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableMultiset.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableBiMap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableMultimap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableMap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableSortedSet.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableListMultimap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableEntry.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/UnmodifiableIterator.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Collections2.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableMultiset.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/RegularImmutableBiMap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Platform.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableSortedSet.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/SingletonImmutableMap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/RegularImmutableMap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Joiner.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableListMultimap.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/PeekingIterator.java
- \* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-



jar/com/google/common/collect/ImmutableMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/ImmutableCollection.java  
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jar/com/google/common/base/internal/Finalizer.java  
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\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ComputationException.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableClassToInstanceMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/annotations/GwtCompatible.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/MapMaker.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AsynchronousComputationException.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ExpirationTimer.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableSortedMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/SingletonImmutableList.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableSortedMapFauxverideShim.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableSetMultimap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/RegularImmutableList.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ImmutableSetMultimap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/CustomConcurrentHashMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Platform.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/NullOutputException.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-

jar/com/google/common/collect/ImmutableEnumSet.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/annotations/GwtIncompatible.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/ImmutableSortedSetFauxverideShim.java  
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jar/com/google/common/collect/TreeMultimap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/EnumHashBiMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/TreeMultiset.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/ConstrainedMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/ForwardingListIterator.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/base/Function.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/NullsFirstOrdering.java  
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jar/com/google/common/collect/ForwardingConcurrentMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/collect/ListMultimap.java  
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jar/com/google/common/collect/HashMultimap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-  
jar/com/google/common/base/FinalizableSoftReference.java  
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jar/com/google/common/collect/NullsLastOrdering.java

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\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ArrayListMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Preconditions.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/SingletonImmutableSet.java

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\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractSetMultimap.java

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\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingSortedSet.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/LinkedHashMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ObjectArrays.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Predicate.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractListMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/HashBiMap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ClassToInstanceMap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Iterables.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractIterator.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/UsingToStringOrdering.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/FinalizableWeakReference.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Maps.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingObject.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Supplier.java  
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\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/MutableClassToInstanceMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/MapDifference.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Synchronized.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractSortedSetMultimap.java  
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\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractBiMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ByFunctionOrdering.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/LinkedHashMultiset.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/SortedSetMultimap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingQueue.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingSet.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Lists.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/BiMap.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Suppliers.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ReverseOrdering.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Multiset.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ExplicitOrdering.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EnumBiMap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/FinalizablePhantomReference.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/RegularImmutableSet.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractMapBasedMultiset.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingList.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/FinalizableReferenceQueue.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingIterator.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractMapEntry.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/Objects.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/LinkedListMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingMultiset.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/SetMultimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ForwardingCollection.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/AbstractMultiset.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Iterators.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableSet.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Multimap.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Ordering.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/CompoundOrdering.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/Multimaps.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/EmptyImmutableList.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/NaturalOrdering.java

\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/base/package-info.java  
\* /opt/ws\_local/PERMITS\_SQL/1019256044\_1594204904.74/0/google-collections-1-0-sources-jar/com/google/common/collect/ConcurrentHashMultiset.java

## 1.107 logging 1.1

### 1.107.1 Available under license :

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```

Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1019255954_1594204863.08/0/logging-1-1-sources-jar/eu/freme/bservices/filters/logging/RequestWrapper.java
* /opt/ws_local/PERMITS_SQL/1019255954_1594204863.08/0/logging-1-1-sources-jar/eu/freme/bservices/filters/logging/TeePrintWriter.java
* /opt/ws_local/PERMITS_SQL/1019255954_1594204863.08/0/logging-1-1-sources-jar/eu/freme/bservices/filters/logging/ResponseWrapper.java
* /opt/ws_local/PERMITS_SQL/1019255954_1594204863.08/0/logging-1-1-sources-jar/eu/freme/bservices/filters/logging/LoggingFilter.java
```

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\* /opt/ws\_local/PERMITS\_SQL/1019255954\_1594204863.08/0/logging-1-1-sources-jar/META-INF/maven/eu.freme-project.bservices.filters/logging/pom.xml

## 1.108 okio 1.13.0

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\* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/ByteString.java

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Found in path(s):

- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/HashingSink.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Options.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/HashingSource.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Pipe.java

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- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Utf8.java

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- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Base64.java

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```
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-
jar/okio/ForwardingTimeout.java
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-
jar/okio/SegmentedByteString.java
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 */
```

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```
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-
jar/okio/ForwardingSource.java
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-
jar/okio/RealBufferedSink.java
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-jar/okio/BufferedSink.java
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-jar/okio/ForwardingSink.java
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-jar/okio/Sink.java
* /opt/ws_local/PERMITS_SQL/1018348639_1594201437.99/0/okio-1-13-0-sources-jar/okio/Okio.java
```

- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/GzipSink.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Timeout.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/BufferedSource.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Buffer.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/RealBufferedSource.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Segment.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Source.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/SegmentPool.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/Util.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/AsyncTimeout.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/DeflaterSink.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/InflaterSource.java
- \* /opt/ws\_local/PERMITS\_SQL/1018348639\_1594201437.99/0/okio-1-13-0-sources-jar/okio/GzipSource.java

# 1.109 xbean-reflect 3.7

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## 1.110 jetty-websocket-common

### 9.2.20.v20161216

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Archiver-Version: Plexus Archiver

Created-By: Apache Maven Bundle Plugin

Built-By: joakim



Build-Jdk: 1.7.0\_75

Implementation-Vendor: Eclipse.org - Jetty

Implementation-Version: 9.2.20.v20161216

url: <http://www.eclipse.org/jetty>

Export-Package: org.eclipse.jetty.websocket.common.events;version="9.2.20",org.eclipse.jetty.websocket.common.io.http;version="9.2.20",org.eclipse.jetty.websocket.common.extensions;version="9.2.20",org.eclipse.jetty.websocket.common.extensions.fragment;version="9.2.20",org.eclipse.jetty.websocket.common.message;version="9.2.20",org.eclipse.jetty.websocket.common.extensions.identity;version="9.2.20",org.eclipse.jetty.websocket.common.util;version="9.2.20",org.eclipse.jetty.websocket.common.extensions.compress;version="9.2.20",org.eclipse.jetty.websocket.common.events.annotated;version="9.2.20",org.eclipse.websocket.common;version="9.2.20",org.eclipse.jetty.websocket.common.io.payload;version="9.2.20",org.eclipse.jetty.websocket.common.io;version="9.2.20",org.eclipse.jetty.websocket.common.frames;version="9.2.20"

Bundle-Classpath: .

Tool: Bnd-1.15.0

Bundle-Name: Jetty :: WebSocket :: Common

Bundle-RequiredExecutionEnvironment: JavaSE-1.7

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Bundle-Vendor: Eclipse Jetty Project

Bundle-Version: 9.2.20.v20161216

Bnd-LastModified: 1481929256250

Bundle-ManifestVersion: 2

Bundle-Description: Administrative parent pom for Jetty modules

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Import-Package: org.eclipse.jetty.io;version="[9.0,10.0)",org.eclipse.jetty.util;version="[9.0,10.0)",org.eclipse.jetty.util.annotation;version="[9.0,10.0)",org.eclipse.jetty.util.component;version="[9.0,10.0)",org.eclipse.jetty.util.log;version="[9.0,10.0)",org.eclipse.jetty.util.thread;version="[9.0,10.0)",org.eclipse.jetty.websocket.api;version="[9.0,10.0)",org.eclipse.jetty.websocket.api.annotations;version="[9.0,10.0)",org.eclipse.jetty.websocket.api.extensions;version="[9.0,10.0)",org.eclipse.jetty.websocket.api.util;version="[9.0,10.0)"

Bundle-SymbolicName: org.eclipse.jetty.websocket.common

Bundle-DocURL: <http://www.eclipse.org/jetty>

Found in path(s):

\* /opt/cola/permits/1685982446\_1684945670.1861694/0/websocket-common-9-2-20-v20161216-jar/META-INF/MANIFEST.MF

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\* /opt/cola/permits/1685982446\_1684945670.1861694/0/websocket-common-9-2-20-v20161216-jar/about.html

# 1.111 plexus-classworlds 2.5.1

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## 1.114 auto-service 1.0-rc6

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Found in path(s):

\* /opt/cola/permits/1685982229\_1684869244.4580529/0/auto-service-1-0-rc6-sources-2-  
jar/com/google/auto/service/processor/package-info.java

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- \* /opt/cola/permits/1685982229\_1684869244.4580529/0/auto-service-1-0-rc6-sources-2-jar/com/google/auto/service/processor/ServicesFiles.java
- \* /opt/cola/permits/1685982229\_1684869244.4580529/0/auto-service-1-0-rc6-sources-2-jar/com/google/auto/service/processor/AutoServiceProcessor.java

# 1.115 selenium 3.11.0

## 1.115.1 Available under license :

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Metadata-Version: 1.1

Name: selenium

Version: 3.11.0

Summary: Python bindings for Selenium

Home-page: <https://github.com/SeleniumHQ/selenium/>

Author: UNKNOWN

Author-email: UNKNOWN

License: Apache 2.0

Description-Content-Type: UNKNOWN

Description: =====

Selenium Client Driver

=====

Introduction

=====

Python language bindings for Selenium WebDriver.

The `selenium` package is used to automate web browser interaction from Python.

```

+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| **Home**: | http://www.seleniumhq.org | | | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| **Docs**: | `selenium package API <https://seleniumhq.github.io/selenium/docs/api/py/api.html>` _ |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| **Dev**: | https://github.com/SeleniumHQ/Selenium | | | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| **PyPI**: | https://pypi.python.org/pypi/selenium | | | | | | | | | |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+

```

|\*\*IRC\*\*:  
+-----+

Several browsers/drivers are supported (Firefox, Chrome, Internet Explorer), as well as the Remote protocol.

### Supported Python Versions

=====

\* Python 2.7, 3.4+

### Installing

=====

If you have `pip` <<https://pip.pypa.io/>> on your system, you can simply install or upgrade the Python bindings::

```
pip install -U selenium
```

Alternately, you can download the source distribution from `PyPI` <<http://pypi.python.org/pypi/selenium>> (e.g. `selenium-3.11.0.tar.gz`), unarchive it, and run::

```
python setup.py install
```

Note: You may want to consider using `virtualenv` <<http://www.virtualenv.org/>> to create isolated Python environments.

### Drivers

=====

Selenium requires a driver to interface with the chosen browser. Firefox, for example, requires `geckodriver` <<https://github.com/mozilla/geckodriver/releases>>, which needs to be installed before the below examples can be run. Make sure it's in your `PATH`, e. g., place it in `/usr/bin` or `/usr/local/bin`.

Failure to observe this step will give you an error `selenium.common.exceptions.WebDriverException`:  
Message: 'geckodriver' executable needs to be in PATH.

Other supported browsers will have their own drivers available. Links to some of the more popular browser drivers follow.

+-----+  
|\*\*Chrome\*\*:  
+-----+  
|\*\*Edge\*\*:  
+-----+  
|\*\*Firefox\*\*:  
+-----+  
|\*\*Safari\*\*:  
+-----+



```

class GoogleTestCase(unittest.TestCase):

 def setUp(self):
 self.browser = webdriver.Firefox()
 self.addCleanup(self.browser.quit)

 def testPageTitle(self):
 self.browser.get('http://www.google.com')
 self.assertIn('Google', self.browser.title)

if __name__ == '__main__':
 unittest.main(verbosity=2)

```

#### Selenium Server (optional)

=====

For normal WebDriver scripts (non-Remote), the Java server is not needed.

However, to use Selenium Webdriver Remote or the legacy Selenium API (Selenium-RC), you need to also run the Selenium server. The server requires a Java Runtime Environment (JRE).

Download the server separately, from: <http://selenium-release.storage.googleapis.com/3.11/selenium-server-standalone-3.11.0.jar>

Run the server from the command line::

```
java -jar selenium-server-standalone-3.11.0.jar
```

Then run your Python client scripts.

Use The Source Luke!

=====

View source code online:

```

+-----+-----+
| official: | https://github.com/SeleniumHQ/selenium/tree/master/py |
+-----+-----+

```

Platform: UNKNOWN

Classifier: Development Status :: 5 - Production/Stable

Classifier: Intended Audience :: Developers

Classifier: License :: OSI Approved :: Apache Software License

Classifier: Operating System :: POSIX

Classifier: Operating System :: Microsoft :: Windows

Classifier: Operating System :: MacOS :: MacOS X

Classifier: Topic :: Software Development :: Testing

Classifier: Topic :: Software Development :: Libraries

Classifier: Programming Language :: Python

Classifier: Programming Language :: Python :: 2.7

Classifier: Programming Language :: Python :: 3.4

Classifier: Programming Language :: Python :: 3.5

Classifier: Programming Language :: Python :: 3.6

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium.egg-info/PKG-INFO

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/PKG-INFO

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/chrome/webdriver.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/firefox/webdriver.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/support/color.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/edge/\_\_init\_\_.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/support/expected\_conditions.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/ie/\_\_init\_\_.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/safari/service.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/firefox/service.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/firefox/firefox\_profile.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/support/select.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/\_\_init\_\_.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/\_\_init\_\_.py

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/support/events.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/firefox/remote\_connection.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/desired\_capabilities.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/chrome/remote\_connection.py

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/remote/remote\_connection.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/service.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/ie/options.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/phantomjs/webdriver.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/chrome/service.py

\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/support/event\_firing\_webdriver.py

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/remote/errorhandler.py

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/edge/service.py

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\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/safari/\_\_init\_\_.py  
3.11.0/selenium/webdriver/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/\_\_init\_\_.py  
3.11.0/selenium/webdriver/safari/webdriver.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/safari/webdriver.py  
3.11.0/selenium/webdriver/common/by.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/by.py  
3.11.0/selenium/webdriver/common/actions/interaction.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/actions/interaction.py  
3.11.0/selenium/common/exceptions.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/common/exceptions.py  
3.11.0/selenium/webdriver/common/actions/pointer\_input.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/actions/pointer\_input.py



3.11.0/selenium/webdriver/opera/options.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/ie/service.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/remote/webelement.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/actions/pointer\_actions.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/html5/application\_cache.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/chrome/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/webkitgtk/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/edge/webdriver.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/remote/webdriver.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/utils.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/actions/key\_input.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/webkitgtk/options.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/actions/input\_device.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/support/wait.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/chrome/options.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/common/actions/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/phantomjs/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/remote/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/remote/switch\_to.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/android/\_\_init\_\_.py  
\* /opt/cola/permits/1685982332\_1684869309.439767/0/selenium-3-11-0-1-tar-gz/selenium-3.11.0/selenium/webdriver/firefox/\_\_init\_\_.py

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## 1.116 closure-compiler-externs v20140407

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zip/gecko\_css.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/ie\_event.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/window.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_dom2.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_dom3.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_css.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_dom1.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/deprecated.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/webkit\_dom.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/gecko\_dom.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/ie\_dom.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/flash.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/html5.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/gecko\_event.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/webkit\_css.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/es3.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_range.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_event.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/gecko\_xml.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_xml.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/ie\_css.js  
\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_selectors.js

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* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/w3c_indexeddb.js
```

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```
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/webgl.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/w3c_css3d.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/w3c_event3.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/google.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/webkit_notifications.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/fileapi.js
```

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```
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/v8.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/intl.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/w3c_device_sensor_event.js
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/chrome.js
```

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```

Found in path(s):

```
* /opt/cola/permits/1685982254_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-
zip/w3c_navigation_timing.js
```

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_anim\_timing.js

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\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/iphone.js

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/ie\_vml.js

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_geolocation.js

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/es5.js

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/webstorage.js

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/webkit\_event.js

\* /opt/cola/permits/1685982254\_1684869164.757774/0/closure-compiler-externs-v20140407-sources-1-jar/externs-  
zip/w3c\_elementtraversal.js

## 1.117 selenium-opera-driver 3.11.0

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```
* /opt/cola/permits/1685982319_1684869255.8840199/0/selenium-opera-driver-3-11-0-sources-jar/org/openqa/selenium/opera/OperaOptions.java
* /opt/cola/permits/1685982319_1684869255.8840199/0/selenium-opera-driver-3-11-0-sources-jar/org/openqa/selenium/opera/OperaDriver.java
* /opt/cola/permits/1685982319_1684869255.8840199/0/selenium-opera-driver-3-11-0-sources-jar/org/openqa/selenium/opera/OperaDriverService.java
```

## 1.118 jackson-core 2.9.5

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It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

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\* /opt/cola/permits/1685982535\_1684882567.9428499/0/auto-service-annotations-1-0-rc6-jar/META-INF/maven/com.google.auto.service/auto-service-annotations/pom.xml

## 1.121 guava-listenablefuture-only 9999.0- empty-to-avoid-conflict-with-guava

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Doug Lea

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## 1.122 protobuf-java 3.0.2

## 1.123 error\_prone\_annotations 2.1.3

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```
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/DoNotCall.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/CheckReturnValue.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/concurrent/GuardedBy.java
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```
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/RequiredModifiers.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/concurrent/LazyInit.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/Immutable.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/Var.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/CompileTimeConstant.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/ForOverride.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/IncompatibleModifiers.java
* /opt/cola/permits/1206722448_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-
jar/com/google/errorprone/annotations/SuppressPackageLocation.java
```

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- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/concurrent/LockMethod.java
- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/NoAllocation.java

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- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/CompatibleWith.java
- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/DoNotMock.java
- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/FormatMethod.java
- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/MustBeClosed.java
- \* /opt/cola/permits/1206722448\_1632456694.38/0/error-prone-annotations-2-1-3-sources-12-jar/com/google/errorprone/annotations/FormatString.java

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\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/xz/XZArchiver.java

\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/xz/XZCompressor.java

\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/PlexusIoTarXZFileResourceCollection.java

\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/XZTarFile.java

\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-

jar/org/codehaus/plexus/archiver/xz/PlexusIoXZResourceCollection.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-  
jar/org/codehaus/plexus/archiver/tar/TarXZUnArchiver.java  
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jar/org/codehaus/plexus/archiver/util/Streams.java
* /opt/cola/permits/1685982373_1684869142.5397258/0/plexus-archiver-3-4-sources-2-
jar/org/codehaus/plexus/archiver/diags/DelgatingArchiver.java
* /opt/cola/permits/1685982373_1684869142.5397258/0/plexus-archiver-3-4-sources-2-
jar/org/codehaus/plexus/archiver/resources/PlexusIoVirtualSymlinkResource.java
* /opt/cola/permits/1685982373_1684869142.5397258/0/plexus-archiver-3-4-sources-2-
jar/org/codehaus/plexus/archiver/diags/NoOpArchiver.java
* /opt/cola/permits/1685982373_1684869142.5397258/0/plexus-archiver-3-4-sources-2-
jar/org/codehaus/plexus/archiver/util/AbstractFileSet.java
* /opt/cola/permits/1685982373_1684869142.5397258/0/plexus-archiver-3-4-sources-2-
jar/org/codehaus/plexus/archiver/resources/PlexusIoVirtualFileResource.java
* /opt/cola/permits/1685982373_1684869142.5397258/0/plexus-archiver-3-4-sources-2-
jar/org/codehaus/plexus/archiver/util/ArchiveEntryUtils.java
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- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/UnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/snappy/SnappyArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/ArchiveEntry.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/jar/Manifest.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/AbstractZipArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/bzip2/BZip2Archiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/bzip2/BZip2Compressor.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/AbstractArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/gzip/GZipCompressor.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/jar/ManifestException.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/TarGZipUnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/TarUnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/snappy/SnappyUnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/bzip2/BZip2UnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/TarBZip2UnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/AbstractZipUnArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/TarArchiver.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/snappy/SnappyCompressor.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/jar/JdkManifestFactory.java

\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/util/Compressor.java  
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\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/Archiver.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/ZipArchiver.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/TarSnappyUnArchiver.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/ZipUnArchiver.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/jar/JarArchiver.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/jar/ManifestConstants.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/gzip/GZipArchiver.java  
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\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/tar/PlexusIoTarFileResourceCollection.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/ZipSymlinkResource.java  
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\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/util/FilePermissionUtils.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/diags/TrackingArchiver.java  
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\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/ConcurrentJarCreator.java  
\* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/zip/OffloadingOutputStream.java  
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- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/manager/NoSuchArchiverException.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/UnixStat.java
- \* /opt/cola/permits/1685982373\_1684869142.5397258/0/plexus-archiver-3-4-sources-2-jar/org/codehaus/plexus/archiver/manager/DefaultArchiverManager.java

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<http://www.w3.org/TR/2004/NOTE-DOM-Level-3-XPath-20040226/>

The specification of DOM Level 2's various parts is at:  
<http://www.w3.org/TR/2000/REC-DOM-Level-2-Events-20001113/>  
<http://www.w3.org/TR/2000/REC-DOM-Level-2-Style-20001113/>  
<http://www.w3.org/TR/2000/REC-DOM-Level-2-Traversal-Range-20001113/>  
<http://www.w3.org/TR/2000/REC-DOM-Level-2-Views-20001113/>

The specification of DOM Level 1's various parts is at:  
<http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001/level-one-html.html>

Links to all available W3C DOM Java Bindings can be found at:  
<http://www.w3.org/DOM/DOMTR>

The actual classes of The Simple API for CSS (SAC) came from:

<http://www.w3.org/Style/CSS/SAC/>  
<http://www.w3.org/2002/06/sacjava-1.3.zip>

The actual DOM Java Language Binding classes for SMIL came from:

<http://dev.w3.org/cvsweb/java/classes/org/w3c/dom/smil/>  
(both `ElementTimeControl.java` and `TimeEvent.java` were taken at revision 1.1)

The actual DOM Java Language Binding classes for SVG 1.1 came from:

<http://www.w3.org/TR/SVG11/java.html>  
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# 1.130 commons-chain 1.1

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Found in path(s):

\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/Command.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/Chain.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/Filter.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/ChainServlet.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/Context.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/Catalog.java

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\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletApplicationScopeMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/faces/FacesGetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletSetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/config/ConfigDefineRule.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletApplicationScopeMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/generic/RemoveCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/generic/LookupCommand.java

\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/MapEntry.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletSessionScopeMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletParamMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletWebContext.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletHeaderMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/config/ConfigRuleSet.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/AbstractSetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/PathInfoMapper.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletGetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/generic/CopyCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/config/ConfigParser.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletGetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletPathMapper.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/faces/FacesWebContext.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/ChainResources.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/impl/ContextBase.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/AbstractGetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/impl/CatalogFactoryBase.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletHeaderValuesMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/config/ConfigCatalogRule.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/CatalogFactory.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletParamMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletRequestScopeMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/ChainListener.java

\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/RequestParamMapper.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ChainProcessor.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/WebContext.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/impl/ChainBase.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/impl/CatalogBase.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletRequestScopeMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletParamValuesMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletSetLocaleCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletWebContext.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletInitParamMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletSessionScopeMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletInitParamMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/portlet/PortletParamValuesMap.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/generic/DispatchLookupCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/config/ConfigRegisterRule.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/faces/FacesSetLocaleCommand.java  
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\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/generic/DispatchCommand.java  
\* /opt/cola/permits/1137272565\_1614043347.88/0/commons-chain-1-1-sources-2-jar/org/apache/commons/chain/web/servlet/ServletCookieMap.java

## 1.131 htmlunit/htmlunit-neko 2.24

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\* /opt/cola/permits/1685982260\_1684944257.4099445/0/neko-htmlunit-2-24-jar/META-INF/maven/net.sourceforge.htmlunit/neko-htmlunit/pom.xml

## 1.132 jetty-java-based-http-1-x-http-2-servlet-websocket-server 9.0.7.v20131107

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\* /opt/cola/permits/1685982433\_1684945335.7833998/0/jetty-http-9-0-7-v20131107-jar/about.html

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Manifest-Version: 1.0  
Archiver-Version: Plexus Archiver  
Created-By: Apache Maven Bundle Plugin  
Built-By: jesse  
Build-Jdk: 1.7.0\_25

Implementation-Vendor: Eclipse.org - Jetty  
Implementation-Version: 9.0.7.v20131107  
url: <http://www.eclipse.org/jetty>  
Export-Package: org.eclipse.jetty.http;uses:="org.eclipse.jetty.util.r  
esource,org.eclipse.jetty.util,org.eclipse.jetty.util.log";version="9  
.0.7"  
Bundle-Classpath: .  
Tool: Bnd-1.15.0  
Bundle-Name: Jetty :: Http Utility  
Bundle-RequiredExecutionEnvironment: JavaSE-1.7  
Bundle-Copyright: Copyright (c) 2008-2013 Mort Bay Consulting Pty. Ltd.  
Bundle-Vendor: Eclipse Jetty Project  
Bundle-Version: 9.0.7.v20131107  
Bnd-LastModified: 1383840442438  
Bundle-ManifestVersion: 2  
Bundle-Description: Administrative parent pom for Jetty modules  
Bundle-License: <http://www.apache.org/licenses/LICENSE-2.0>, [http://www  
.eclipse.org/org/documents/epl-v10.php](http://www.eclipse.org/org/documents/epl-v10.php)  
Import-Package: org.eclipse.jetty.util;version="[9.0,10)",org.eclipse.  
jetty.util.log;version="[9.0,10)",org.eclipse.jetty.util.resource;ver  
sion="[9.0,10)"  
Bundle-SymbolicName: org.eclipse.jetty.http  
Bundle-DocURL: <http://www.eclipse.org/jetty>

Found in path(s):

\* /opt/cola/permits/1685982433\_1684945335.7833998/0/jetty-http-9-0-7-v20131107-jar/META-  
INF/MANIFEST.MF

# 1.133 scala-logging\_2.12 3.4.0

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## 1.134 shapeless-core 2.1.0

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```
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/syntax/singletons.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/examples/boolinduction.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/ops/functions.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/syntax/std/functions.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/ops/products.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/syntax/std/products.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-
jar/shapeless/syntax/std/tuples.scala
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\* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/factorial.scala  
\* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/gcd.scala  
\* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/fibonacci.scala

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- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/lift.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/sized.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/hlists.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/sized.scala
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- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/syntax/sized.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/syntax/typeable.scala
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- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/zipper.scala
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jar/shapeless/examples/flatten.scala

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- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/pack.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/kindpoly.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/uniqueness.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/deepsearch.scala
- \* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/examples/parsing.scala

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\* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-

jar/shapeless/examples/labelledgeneric.scala

\* /opt/cola/permits/1685982458\_1684951065.219022/0/shapeless-2-11-2-1-0-sources-

jar/shapeless/examples/scalding.scala

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*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/unions.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/package.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/test/typechecking.scala
*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/syntax/coproduct.scala
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*/opt/cola/permits/1685982458_1684951065.219022/0/shapeless-2-11-2-1-0-sources-jar/shapeless/typeclass.scala
```

# 1.135 objenesis 2.2

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jar/org/codehaus/plexus/components/io/filemappers/AbstractFileMapper.java
* /opt/cola/permits/1685982397_1684947285.8019888/0/plexus-io-3-0-1-sources-
jar/org/codehaus/plexus/components/io/fileselectors/FileSelector.java
* /opt/cola/permits/1685982397_1684947285.8019888/0/plexus-io-3-0-1-sources-
jar/org/codehaus/plexus/components/io/resources/AbstractPlexusIoResourceCollectionWithAttributes.java
* /opt/cola/permits/1685982397_1684947285.8019888/0/plexus-io-3-0-1-sources-
jar/org/codehaus/plexus/components/io/resources/PlexusIoResourceCollection.java
* /opt/cola/permits/1685982397_1684947285.8019888/0/plexus-io-3-0-1-sources-
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\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/PlexusIoResource.java  
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\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/fileselectors/IncludeExcludeFileSelector.java  
\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/AbstractPlexusIoResourceCollection.java  
\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/PlexusIoArchivedResourceCollection.java  
\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/PlexusIoFileResourceCollection.java  
\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/filemappers/RegExpFileMapper.java  
\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/filemappers/FileMapper.java  
\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/fileselectors/FileInfo.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/filemappers/FileExtensionMapper.java

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\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/PlexusIoResourceConsumer.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/proxy/ResourceInvocationHandler.java

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\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/attributes/SymlinkUtils.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/Deferred.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/attributes/AttributeUtils.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/proxy/ForwardingIterator.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/FileSupplier.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/InputStreamTransformer.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/SymlinkDestinationSupplier.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/proxy/ProxyFactory.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/NameSupplier.java

\* /opt/cola/permits/1685982397\_1684947285.8019888/0/plexus-io-3-0-1-sources-

```
jar/org/codehaus/plexus/components/io/functions/SizeSupplier.java
* /opt/cola/permits/1685982397_1684947285.8019888/0/plexus-io-3-0-1-sources-
jar/org/codehaus/plexus/components/io/resources/EncodingSupported.java
* /opt/cola/permits/1685982397_1684947285.8019888/0/plexus-io-3-0-1-sources-
jar/org/codehaus/plexus/components/io/resources/Stream.java
```

## 1.137 swiper 6.5.6

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## 1.138 error\_prone\_annotations 2.3.4

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Found in path(s):

\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/concurrent/UnlockMethod.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/concurrent/LockMethod.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/NoAllocation.java  
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\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/RestrictedApi.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/DoNotMock.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/CompatibleWith.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/FormatMethod.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/FormatString.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/MustBeClosed.java  
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\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/CheckReturnValue.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/concurrent/GuardedBy.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/OverridingMethodsMustInvokeSuper.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/DoNotCall.java

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Found in path(s):

\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/SuppressPackageLocation.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/ForOverride.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-jar/com/google/errorprone/annotations/IncompatibleModifiers.java  
\* /opt/cola/permits/1206718612\_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-

```
jar/com/google/errorprone/annotations/concurrent/LazyInit.java
* /opt/cola/permits/1206718612_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-
jar/com/google/errorprone/annotations/RequiredModifiers.java
* /opt/cola/permits/1206718612_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-
jar/com/google/errorprone/annotations/Var.java
* /opt/cola/permits/1206718612_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-
jar/com/google/errorprone/annotations/CanIgnoreReturnValue.java
* /opt/cola/permits/1206718612_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-
jar/com/google/errorprone/annotations/CompileTimeConstant.java
* /opt/cola/permits/1206718612_1632455182.54/0/error-prone-annotations-2-3-4-sources-9-
jar/com/google/errorprone/annotations/Immutable.java
```

## 1.139 auto-common-libraries 0.10

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```
* /opt/cola/permits/1685982223_1684882176.140761/0/auto-common-0-10-jar/META-
INF/maven/com.google.auto/auto-common/pom.xml
```

## 1.140 headjs 1.0.3

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## 1.141 phantomjs-embedder 1.0.0

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/opt/cola/permits/1685982313\_1684947139.5064816/0/phanbedder-2-1-1-1-0-0-jar/linux86/phantomjs: binary file matches

/opt/cola/permits/1685982313\_1684947139.5064816/0/phanbedder-2-1-1-1-0-0-jar/macosx/phantomjs: binary file matches

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## 1.142 jackson-databind 2.9.5

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# Jackson JSON processor

Jackson is a high-performance, Free/Open Source JSON processing library.

It was originally written by Tatu Saloranta ([tatu.saloranta@iki.fi](mailto:tatu.saloranta@iki.fi)), and has been in development since 2007.

It is currently developed by a community of developers, as well as supported commercially by FasterXML.com.

## ## Licensing

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To find the details that apply to this artifact see the accompanying LICENSE file.

For more information, including possible other licensing options, contact FasterXML.com (<http://fasterxml.com>).

## ## Credits

A list of contributors may be found from CREDITS file, which is included in some artifacts (usually source distributions); but is always available from the source code management (SCM) system project uses.

# 1.143 angular-route 1.2.28

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```
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 * @license AngularJS v1.2.28
 * (c) 2010-2014 Google, Inc. http://angularjs.org
 * License: MIT
 */
```

Found in path(s):

```
* /opt/cola/permits/1685982241_1684869173.863246/0/angular-route-1-2-28-tgz/package/angular-route.js
```

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# packaged angular-route

This repo is for distribution on `npm` and `bower`. The source for this module is in the [main AngularJS repo](<https://github.com/angular/angular.js/tree/master/src/ngRoute>).

Please file issues and pull requests against that repo.

## Install

You can install this package either with `npm` or with `bower`.

### npm

```
```shell
npm install angular-route
```
```

Add a ``<script>`` to your `index.html`:

```
```html
<script src="/node_modules/angular-route/angular-route.js"></script>
```
```

Then add `ngRoute` as a dependency for your app:

```
```javascript
angular.module('myApp', ['ngRoute']);
```
```

Note that this package is not in CommonJS format, so doing `require('angular-route')` will return `undefined`.

### bower

```
```shell
bower install angular-route
```
```

Add a ``<script>`` to your `index.html`:

```
```html
<script src="/bower_components/angular-route/angular-route.js"></script>
```
```

Then add `ngRoute` as a dependency for your app:

```
```javascript
angular.module('myApp', ['ngRoute']);
```
```

## Documentation

Documentation is available on the  
[AngularJS docs site](<http://docs.angularjs.org/api/ngRoute>).

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\* /opt/cola/permits/1685982241\_1684869173.863246/0/angular-route-1-2-28-tgz/package/angular-route.min.js

## 1.144 angular-seed 0.0.0

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## 1.145 okhttp 3.9.1

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- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tagobjects/FirefoxBrowser.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/Timeouts.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/XmlReporter.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/JavaCollectionWrapper.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/DoNotInterrupt.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfContainWord.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfTheSameElementsAsApplication.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/DistributedTestRunnerSuite.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/JUnitXmlReporter.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/exceptions/TimeoutField.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/exceptions/TableDrivenPropertyCheckFailedException.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/events/Ordinal.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/ReporterFactory.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/matchers/LazyArg.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfAtMostOneElementOfApplication.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/jmock/JMockExpectations.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfAWordToAMatcherApplication.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-



jar/org/scalatest/words/BeWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/matchers/HavePropertyMatchResult.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/matchers/Matcher.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfAnTypeInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/enablers/Readability.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/BeforeAndAfterAllConfigMap.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/ParallelTestExecution.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/FunSuiteLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Doc.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/easymock/EasyMockSugar.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/TimeoutTask.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfInOrderApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfSizeWordApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/XmlSocketReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ShouldVerb.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/fixture/FunSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfOneElementOfApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/junit/JUnitSuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfTheSameElementsInOrderAsApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/fixture/Transformer.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/EventToPresent.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/run.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/StreamlinedXmlEquality.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfTheTypeInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/ScalaFutures.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/FreeSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/NonImplicitAssertions.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/path/FunSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/JavaFutures.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/DiscardedEvaluationException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/Slow.scala  
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jar/org/scalatest/DoNotDiscover.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/FunSuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/LoneElement.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/FunSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/TestFailedException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/PleaseUseNoExceptionShouldSyntaxInstead.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/DashboardReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Sequential.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/EventHandler.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/TestRegistration.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/SuiteMixin.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/testng/TestNGSuiteLike.scala  
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jar/org/scalatest/fixture/Spec.scala  
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jar/org/scalatest/tools/StandardErrReporter.scala  
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jar/org/scalatest/concurrent/SignalerTimeoutTask.scala  
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jar/org/scalatest/BeforeAndAfterEachTestData.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Slicing.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/Retryable.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/time/Units.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/StringVerbBlockRegistration.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfRegexWordApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Size.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/JSuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfLengthWordApplication.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/ReporterConfiguration.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfOnlyApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/BeforeAndAfterAll.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/NotAllowedException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/AsyncPendingTransformer.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/ConfigMapFixture.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/events/Event.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/junit/JUnit3Suite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/DoNotSignal.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/ChromeBrowser.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/words/ResultOfInOrderOnlyApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/DynaTags.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/SequentialNestedSuiteExecution.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfAnWordToSymbolApplication.scala  
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jar/org/scalatest/Docuenter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/KeyMapping.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SuiteResult.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/StopOnFailure.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SuiteResultHolder.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Collecting.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfBeThrownBy.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncEngine.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/SlowpokeDetector.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/StatusJPanel.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/FlatSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Fact.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/NoExceptionWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/selenium/WebBrowser.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncTestRegistration.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/ValueMapping.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfBeWordForAnType.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfGreaterThanComparison.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/SpecLike.scala  
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jar/org/scalatest/words/ResultOfBeWordForNoException.scala

\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/GivenWhenThen.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/HtmlReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Entry.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ContainWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Notifying.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfGreaterThanOrEqualToComparison.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/matchers/MatcherProducers.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/MatchersHelper.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/FullyMatchWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/TimeLimits.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/IntegrationPatience.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/fixture/AsyncTestRegistration.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/fixture/AsyncFlatSpecLike.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfAtLeastOneOfApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/HaveWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/matchers/MatchSucceeded.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/EncodedOrdering.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/fixture/WordSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/TestThreadsStartingCounter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/mockito/MockitoSugar.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Stopper.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/AsyncTestSuiteMixin.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tags/CPU.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/words/ResultOfAWordToBePropertyMatcherApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/HtmlUnitBrowser.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Retries.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/PimpedReadWriteLock.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Sequencing.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/AsyncFeatureSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/CancelAfterFailure.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfAfterWordApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/RunningTest.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/PatienceConfiguration.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/CPU.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/TestPendingException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Suites.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Checkpoints.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/ThreadSignaler.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/junit/JUnitFailedError.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/RandomTestOrder.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/matchers/BePropertyMatcher.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Reporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/matchers/AnMatcher.scala  
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jar/org/scalatest/tagobjects/Disk.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/StringVerbBehaveLikeInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/FeatureSpec.scala  
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jar/org/scalatest/concurrent/PimpedThreadGroup.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/AsyncFreeSpecLike.scala  
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jar/org/scalatest/tools/Framework.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/MemoryReporter.scala  
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jar/org/scalatest/DocSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/ConfigMap.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/ConcurrentDistributor.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Payloads.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/FeatureSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfNotExist.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/NotWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/WordSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/junit/MyRunListener.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/Runner.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SuiteDiscoveryHelper.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/EmptyWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfKeyWordApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Length.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfLessThanComparison.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/junit/JUnitRunner.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Transformer.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/SubjectWithAfterWordRegistration.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Slowpoke.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/WordSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/events/Formatter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-



jar/org/scalatest/words/ResultOfNoneOfApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/WillMatchersHelper.scala  
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jar/org/scalatest/ConfigMapWrapperSuite.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/StringReporter.scala  
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jar/org/scalatest/DispatchReporter.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/CatchReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/time/Span.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/ColorBar.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/matchers/BePropertyMatchResult.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfOfTypeInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/StringVerbStringInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfStringPassedToVerb.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SuiteRunner.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/JavaMapWrapper.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/Slow.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/StackDepthException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/DiagrammedExpr.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/Inspectors.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/RunnerGUI.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AppendedClues.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/FixtureNodeFamily.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfBeWordForAType.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncPropSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/AbstractPatienceConfiguration.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/ConductorMethods.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/AsyncWordSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Aggregating.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/matchers/LazyMessage.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/Network.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/MatcherWords.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/ModifiableMessage.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/DiscoverySuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/SortedWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Stepwise.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/junit/JUnitWrapperSuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/ScalaTestAntTask.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/Conductors.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/PartialFunctionValues.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/InternetExplorerBrowser.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Informer.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/DiagrammedAssertionsMacro.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/UnitFixture.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/RecoverMethods.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/FactInspectors.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncFeatureSpecLike.scala  
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jar/org/scalatest/events/NameInfo.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfATypeInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncFunSpecLike.scala  
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jar/org/scalatest/tools/StandardOutReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/FreeSpecLike.scala  
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jar/org/scalatest/tools/PrintReporter.scala  
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jar/org/scalatest/words/ResultOfAWordToSymbolApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/TagAnnotation.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/LengthWord.scala  
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jar/org/scalatest/words/ResultOfTheSameInstanceAsApplication.scala  
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jar/org/scalatest/words/IncludeWord.scala  
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jar/org/scalatest/ConcurrentInformer.scala  
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jar/org/scalatest/SeveredStackTraces.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/TestSuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/MatchPatternWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/CanVerb.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncFlatSpecLike.scala  
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jar/org/scalatest/fixture/AsyncFreeSpecLike.scala  
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jar/org/scalatest/tools/AnsiColor.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SocketReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/BehaveWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/TestRegistrationClosedException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/DeprecatedTimeLimitedTests.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/EndWithWord.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SuiteSortingReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/SelectorInterruptor.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/Existence.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/DefinedWord.scala  
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jar/org/scalatest/ResourcefulReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfValueWordApplication.scala  
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jar/org/scalatest/SuiteRerunner.scala  
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jar/org/scalatest/FeatureSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/testng/TestNGWrapperSuite.scala  
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jar/org/scalatest/junit/AssertionsForJUnit.scala  
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jar/org/scalatest/enablers/Definition.scala  
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jar/org/scalatest/matchers/BeMatcher.scala  
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jar/org/scalatest/FunSpec.scala  
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jar/org/scalatest/concurrent/SelectorSignaler.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Informing.scala  
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jar/org/scalatest/TryValues.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/exceptions/TestFailedDueToTimeoutException.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/words/ResultOfAllElementsOfApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/AsyncWordSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Inside.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfMessageWordApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-

jar/org/scalatest/exceptions/ModifiablePayload.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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jar/org/scalatest/words/ResultOfDefinedAt.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfAnWordToBePropertyMatcherApplication.scala  
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jar/org/scalatest/TestData.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/exceptions/DuplicateTestNameException.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/TestSpecificReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/package.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/words/ResultOfTaggedAsInvocation.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/EitherValues.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Tracker.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-



jar/org/scalatest/Rerunner.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/SbtDispatchReporter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/DistributedTestSorter.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/concurrent/Futures.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfAllOfApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tools/RunDoneListener.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tagobjects/Network.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/Notifier.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/Disk.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/PropSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/enablers/WheneverAsserting.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/refspec/RefSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/words/ResultOfInOrderElementsOfApplication.scala  
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jar/org/scalatest/concurrent/package.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/InsertionOrderSet.scala

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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/enablers/Timed.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/FutureOutcome.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/AnnotationHelper.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/AsyncTimeLimitedTests.scala  
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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/AsyncCancelAfterFailure.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/enablers/Futuristic.scala

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\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/jmock/JMockCycleFixture.scala

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- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/SerialExecutionContext.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/prop/Edges.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/SuiteParam.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/PendingStatement.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/concurrent/SleepHelper.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/mock/package.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/UnquotedString.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/Expectations.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/JavaClassesWrappers.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/prop/Randomizer.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/prop/GeneratorChecks.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/NestedSuiteParam.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/TestSpec.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/prop/Generator.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/tools/ArgsParser.scala
- \* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/DeferredAbortedSuite.scala

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jar/org/scalatest/fixture/AsyncWordSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/FreeSpecLike.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/FeatureSpecLike.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/AsyncFeatureSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/AsyncPropSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/AsyncFlatSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/AsyncFreeSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/AsyncTestSuite.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/AsyncFunSuite.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/FunSpecLike.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/AsyncPropSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/matchers/MatchPatternHelper.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/AsyncFunSpec.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/AsyncTestSuite.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/fixture/FunSuiteLike.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
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jar/org/scalatest/selenium/Page.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/WordSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncFunSuite.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/InternetExplorerBrowser.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncFunSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/AsyncConfigMapFixture.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/matchers/MatchPatternMacro.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/StreamlinedXml.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/matchers/TypeMatcherMacro.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/HtmlUnitBrowser.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/AsyncFeatureSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/StreamlinedXmlNormMethods.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/AsyncFreeSpec.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/FlatSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/FirefoxBrowser.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/fixture/PropSpecLike.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/SafariBrowser.java  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/AsyncWordSpec.scala  
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jar/org/scalatest/matchers/TypeMatcherHelper.scala  
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jar/org/scalatest/fixture/AsyncFlatSpec.scala  
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jar/org/scalatest/words/ResultOfNoElementsOfApplication.scala  
\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-  
jar/org/scalatest/tags/ChromeBrowser.java

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* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/CompileMacro.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/AssertionsMacro.scala
* /opt/cola/permits/1685982723_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-
jar/org/scalatest/DiagrammedExprMacro.scala
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```
factExceptionWasThrown=Exception {0} was thrown
factNoExceptionWasThrown=No exception was thrown
midSentenceFactExceptionWasThrown=exception {0} was thrown
midSentenceFactNoExceptionWasThrown=no exception was thrown
exceptionExpected=Expected exception {0} to be thrown, but no exception was thrown
expectedExceptionWasThrown=Did not expect exception {0} to be thrown, but it was thrown
midSentenceExceptionExpected=expected exception {0} to be thrown, but no exception was thrown
midSentenceExpectedExceptionWasThrown=did not expect exception {0} to be thrown, but it was thrown
noExceptionWasThrown=No exception was thrown.
resultWas=No exception was thrown. Instead, result was: {0}
exceptionThrown={0} was thrown.
didNotEqual={0} did not equal {1}
wrongException=Expected exception {0} to be thrown, but {1} was thrown
midSentenceWrongException=expected exception {0} to be thrown, but {1} was thrown
anException=Expected no exception to be thrown, but {0} was thrown.
exceptionNotExpected=An unexpected {0} was thrown.
expectedButGot=Expected {0}, but got {1}
expectedAndGot=Expected {0}, and got {1}
midSentenceExpectedButGot=expected {0}, but got {1}
midSentenceExpectedAndGot=expected {0}, and got {1}
conditionFalse=A boolean condition should have been true.
```

refNotNull=A reference should have been null.  
refNull=A reference should have been non-null.  
floatInfinite=A float value was infinite. Expected: {0} Actual: {1}. Delta: {2}.  
floatNaN=A float value was NaN. Expected: {0} Actual: {1}. Delta: {2}.  
doubleInfinite=A double value was infinite. Expected: {0} Actual: {1}. Delta: {2}.  
doubleNaN=A double value was NaN. Expected: {0} Actual: {1}. Delta: {2}.  
testEvent=Test Event: {0}: {1}

expressionFailed={0} failed

testFailed=TEST FAILED - {0}  
testStarting=Test Starting - {0}  
testSucceeded=Test Succeeded - {0}  
testIgnored=Test Ignored - {0}  
testPending=Test Pending - {0}  
testCanceled=Test Canceled - {0}  
suiteStarting=Suite Starting - {0}  
suiteCompleted=Suite Completed - {0}  
suiteAborted=SUITE ABORTED - {0}  
runAborted=\*\*\* RUN ABORTED \*\*\*  
infoProvided=Info Provided - {0}  
alertProvided=Alert Provided - {0}  
noteProvided=Note Provided - {0}  
markupProvided=Markup Provided - {0}  
scopeOpened=Scope Opened - {0}  
scopeClosed=Scope Closed - {0}  
scopePending=Scope Pending - {0}  
payloadToString=payload.get.toString: {0}

noNameSpecified=(No name specified)

runStarting=Run starting. Expected test count is: {0}  
rerunStarting=Rerun starting. Expected test count is: {0}  
rerunCompleted=Rerun completed. Total number of tests run was: {0}  
rerunStopped=Rerun stopped. Total number of tests run was: {0}  
friendlyFailure=Invalid option given to Runner.\njava org.suiterunner.Runner [option1 [option2..]] [suite1 [suite2...]]\n Valid options are:\n -g display graphical user interface\n -o print results to standard output\n -e print results to standard error\n -f <filename> print results to file\n -r <reporter class name> pass test events to reporter  
showStackTraceOption=Show Stack Traces  
suitebeforeclass=Suite class names must appear after reporters.  
reportTestsStarting=Report Tests Starting  
reportTestsSucceeded=Report Test Success  
reportTestsFailed=Report Test Failed  
reportAlerts=Report Alerts  
reportInfo=Report Miscellaneous Information Messages  
reportStackTraces=Include Stack Traces in Reports  
reportRunStarting=Report Run Starting



reportRunCompleted=Report Run Completed  
reportSummary=Show A Summary of Results  
probarg=Problem arg: {0}  
errBuildingDispatchReporter=Error preparing reporters.  
missingFileName=A -f option must be followed by an output file name.  
missingReporterClassName=A -r option must be followed by a Reporter class name.  
errParsingArgs=Error parsing command line arguments.  
invalidConfigOption=Invalid configuration option: {0}  
cantOpenFile=Unable to create a PrintReporter that prints reports to a file.  
reporterThrew=Reporter completed abruptly with an exception after receiving event: {0}.  
reporterDisposeThrew=Reporter completed abruptly with an exception on invocation of the dispose method.  
slowpokeDetectorEventNotFound=The "Slowpoke" detector received a test-finished event for which it had not seen a matching test-starting event: suiteName = {0}, suiteId = {1}, testName = {2}.  
suiteExecutionStarting=The run method of a nested suite is about to be invoked.  
executeException=Exception encountered when invoking run on a nested suite.  
executeExceptionWithMessage=Exception encountered when invoking run on a nested suite - {0}  
runOnSuiteException=Exception encountered when invoking run on a suite.  
runOnSuiteExceptionWithMessage=Exception encountered when invoking run on a suite - {0}  
suiteCompletedNormally=The run method of a nested suite returned normally.  
notOneOfTheChosenStyles={0} is not one of the chosen styles, which are: {1}. For information on chosen styles, see the Scaladoc documentation for org.scalatest.tools.Runner.  
notTheChosenStyle={0} is not the chosen style, which is: {1}. For information on chosen styles, see the Scaladoc documentation for org.scalatest.tools.Runner.  
Rerun=Rerun  
executeStopping=The run method of a Suite is returning because a stop was requested.  
illegalReporterArg=An illegal reporter argument was specified on the command line: "{0}".  
cantLoadReporterClass=Couldn't load a Reporter class: "{0}".  
cantInstantiateReporter=Couldn't instantiate a Reporter class: "{0}". Is the class public with a public no-arg constructor?  
overwriteExistingFile=The file "{0}" already exists in this directory. Replace it?  
cannotLoadSuite=Unable to load a Suite class. This could be due to an error in your runpath. Missing class: {0}  
cannotLoadDiscoveredSuite=Unable to load a Suite class that was discovered in the runpath: {0}  
nonSuite=One or more requested classes are not Suites:  
cannotInstantiateSuite=Unable to instantiate a Suite class. Is each Suite class you specified public, with a public no-arg constructor? Suite class name: {0}  
cannotLoadClass=A needed class was not found. This could be due to an error in your runpath. Missing class: {0}  
bigProblems=An exception or error caused a run to abort.  
bigProblemsWithMessage=An exception or error caused a run to abort: {0}  
bigProblemsMaybeCustomReporter=An exception or error caused a run to abort. This may have been caused by a problematic custom reporter.  
cannotFindMethod=The Suite to rerun does not contain the method to rerun. Method name: {0}  
securityWhenRerunning=A SecurityException was thrown when attempting a rerun: {0}  
overwriteDialogTitle=Save  
openPrefs=Open Recipe  
savePrefs=Save Recipe  
runsFailures=Runs and Failures  
allEvents=All Events  
needFileNameTitle=Edit Reporter Configuration

needFileNameMessage=A file name is required to create a File Reporter. Please supply a valid file name.  
needClassNameTitle=Edit Reporter Configuration  
needClassNameMessage=A Reporter class name is required to create a Custom Reporter. Please supply a fully qualified name of a class that implements org.suiterunner.Reporter.  
NoSuitesFoundText=No Suites found in the runpath  
cantInvokeExceptionText=Can't invoke method  
multipleTestsFailed=\*\*\* {0} TESTS FAILED \*\*\*  
oneTestFailed=\*\*\* 1 TEST FAILED \*\*\*  
oneSuiteAborted=\*\*\* 1 SUITE ABORTED \*\*\*  
multipleSuitesAborted=\*\*\* {0} SUITES ABORTED \*\*\*  
allTestsPassed=All tests passed.  
noTestsWereExecuted=No tests were executed.

eventsLabel=Events:  
detailsLabel=Details:  
testsRun=Tests Run:  
testsFailed=Failed:  
testsExpected=Expected:  
testsIgnored=Ignored:  
testsPending=Pending:  
testsCanceled=Canceled:

ScalaTestTitle=ScalaTest  
ScalaTestMenu=ScalaTest  
Run=Run  
Stop=Stop  
Exit=Exit  
About=About...  
AboutBoxTitle=About ScalaTest

AppName=ScalaTest  
AppCopyright=Copyright (C) 2001-2014 Artima, Inc. All rights reserved.  
AppURL=www.scalatest.org  
Reason=A tool for testing Scala and Java software  
Trademarks=ScalaTest is a trademark of Artima, Inc.  
ArtimaInc=Artima, Inc.  
MoreInfo=For more information, visit:

ViewMenu=View

JavaSuiteRunnerFile=srj  
JavaSuiteRunnerFileDescription=Recipe Files (\*.srj)

defaultConfiguration=default

reporterTypeLabel=Reporter Type:  
graphicReporterType=Graphic Reporter  
customReporterType=Custom Reporter

stdoutReporterType=Standard Output Reporter  
stderrReporterType=Standard Error Reporter  
fileReporterType=File Reporter  
reporterConfigLabel=Reporter Configuration: {0}  
unusedField=Field for Custom and File Reporters:

couldntRun=Couldn't Run  
couldntRerun=Couldn't Rerun

MENU\_PRESENT\_DISCOVERY\_STARTING=Discovery Starting Reports  
MENU\_PRESENT\_DISCOVERY\_COMPLETED=Discovery Completed Reports  
MENU\_PRESENT\_RUN\_STARTING=Run Starting Reports  
MENU\_PRESENT\_TEST\_STARTING=Test Starting Reports  
MENU\_PRESENT\_TEST\_FAILED=Test Failed Reports  
MENU\_PRESENT\_TEST\_SUCCEEDED=Test Succeeded Reports  
MENU\_PRESENT\_TEST\_IGNORED=Test Ignored Reports  
MENU\_PRESENT\_TEST\_PENDING=Test Pending Reports  
MENU\_PRESENT\_TEST\_CANCELED=Test Canceled Reports  
MENU\_PRESENT\_SUITE\_STARTING=Suite Starting reports  
MENU\_PRESENT\_SUITE\_ABORTED=Suite Aborted Reports  
MENU\_PRESENT\_SUITE\_COMPLETED=Suite Completed Reports  
MENU\_PRESENT\_INFO\_PROVIDED=Information Provided Reports  
MENU\_PRESENT\_ALERT\_PROVIDED=Alert Reports  
MENU\_PRESENT\_NOTE\_PROVIDED=Note Reports  
MENU\_PRESENT\_SCOPE\_OPENED=Scope Opened Reports  
MENU\_PRESENT\_SCOPE\_CLOSED=Scope Closed Reports  
MENU\_PRESENT\_SCOPE\_PENDING=Scope Pending Reports  
MENU\_PRESENT\_MARKUP\_PROVIDED=Markup Provided Reports  
MENU\_PRESENT\_RUN\_STOPPED=Run Stopped Reports  
MENU\_PRESENT\_RUN\_ABORTED=Run Aborted Reports  
MENU\_PRESENT\_RUN\_COMPLETED=Run Completed Reports

RUN\_STARTING=Run Starting  
TEST\_STARTING=Test Starting  
TEST\_FAILED=Test Failed  
TEST\_SUCCEEDED=Test Succeeded  
TEST\_IGNORED=Test Ignored  
TEST\_PENDING=Test Pending  
TEST\_CANCELED=Test Canceled  
SUITE\_STARTING=Suite Starting  
SUITE\_ABORTED=Suite Aborted  
SUITE\_COMPLETED=Suite Completed  
INFO\_PROVIDED=Info Provided  
ALERT\_PROVIDED=Alert Provided  
NOTE\_PROVIDED=Note Provided  
SCOPE\_OPENED=Scope Opened  
SCOPE\_CLOSED=Scope Closed  
SCOPE\_PENDING=Scope Pending

MARKUP\_PROVIDED=Markup Provided  
RUN\_STOPPED=Run Stopped  
RUN\_ABORTED=Run Aborted  
RUN\_COMPLETED=Run Completed

DISCOVERY\_STARTING=Discovery Starting  
DISCOVERY\_COMPLETED=Discovery Completed  
RERUN\_DISCOVERY\_STARTING=Rerun Discovery Starting  
RERUN\_DISCOVERY\_COMPLETED=Rerun Discovery Completed  
RERUN\_RUN\_STARTING=Rerun Starting  
RERUN\_TEST\_STARTING=Rerun Test Starting  
RERUN\_TEST\_FAILED=Rerun Test Failed  
RERUN\_TEST\_SUCCEEDED=Rerun Test Succeeded  
RERUN\_TEST\_IGNORED=Rerun Test Ignored  
RERUN\_TEST\_PENDING=Rerun Test Pending  
RERUN\_TEST\_CANCELED=Rerun Test Canceled  
RERUN\_SUITE\_STARTING=Rerun Suite Starting  
RERUN\_SUITE\_ABORTED=Rerun Suite Aborted  
RERUN\_SUITE\_COMPLETED=Rerun Suite Completed  
RERUN\_INFO\_PROVIDED=Rerun Info Provided  
RERUN\_ALERT\_PROVIDED=Rerun Alert Provided  
RERUN\_NOTE\_PROVIDED=Rerun Note Provided  
RERUN\_MARKUP\_PROVIDED=Rerun Markup Provided  
RERUN\_RUN\_STOPPED=Rerun Stopped  
RERUN\_RUN\_ABORTED=Rerun Aborted  
RERUN\_RUN\_COMPLETED=Rerun Completed  
RERUN\_SCOPE\_OPENED=Rerun Scope Opened  
RERUN\_SCOPE\_CLOSED=Rerun Scope Closed  
RERUN\_SCOPE\_PENDING=Rerun Scope Pending

DetailsEvent=Event  
DetailsSuiteId=Suite ID  
DetailsName=Name  
DetailsMessage=Message  
LineNumber=Line  
DetailsDate=Date  
DetailsThread=Thread  
DetailsThrowable=Exception  
DetailsCause=Cause  
None=None  
DetailsDuration=Duration  
DetailsSummary=Summary

should=should {0}  
itShould=it should {0}  
prefixSuffix={0} {1}  
prefixShouldSuffix={0} should {1}

testSucceededIconChar=-  
testFailedIconChar=-  
iconPlusShortName={0} {1}  
iconPlusShortNameAndNote={0} {1} {2}  
infoProvidedIconChar=+  
markupProvidedIconChar=+  
failedNote=\*\*\* FAILED \*\*\*  
abortedNote=\*\*\* ABORTED \*\*\*  
specTextAndNote={0} {1}  
ignoredNote=!!! IGNORED !!!  
pendingNote=(pending)  
canceledNote=!!! CANCELED !!!  
infoProvidedNote=  
alertProvidedNote=  
noteProvidedNote=  
scopeOpenedNote=  
scopeClosedNote=  
  
givenMessage=Given {0}  
whenMessage=When {0}  
thenMessage=Then {0}  
andMessage=And {0}  
  
scenario=Scenario: {0}  
commaBut={0}, but {1}  
commaAnd={0}, and {1}  
commaDoubleAmpersand={({0}) && ({1})}  
commaDoublePipe={({0}) || ({1})}  
unaryBang=!({0})  
equaled={0} equaled {1}  
was={0} was {1}  
wasNot={0} was not {1}  
wasA={0} was a {1}  
wasNotA={0} was not a {1}  
wasAn={0} was an {1}  
wasNotAn={0} was not an {1}  
wasDefinedAt={0} was defined at {1}  
wasNotDefinedAt={0} was not defined at {1}  
equaledPlusOrMinus={0} equaled {1} plus or minus {2}  
didNotEqualPlusOrMinus={0} did not equal {1} plus or minus {2}  
wasPlusOrMinus={0} was {1} plus or minus {2}  
wasNotPlusOrMinus={0} was not {1} plus or minus {2}  
wasLessThan={0} was less than {1}  
wasNotLessThan={0} was not less than {1}  
wasGreaterThan={0} was greater than {1}  
wasNotGreaterThan={0} was not greater than {1}  
wasLessThanOrEqualTo={0} was less than or equal to {1}  
wasNotLessThanOrEqualTo={0} was not less than or equal to {1}

wasGreaterThanOrEqualTo={0} was greater than or equal to {1}  
wasNotGreaterThanOrEqualTo={0} was not greater than or equal to {1}  
wasSameInstanceAs={0} was the same instance as {1}  
wasNotSameInstanceAs={0} was not the same instance as {1}  
booleanExpressionWas=the boolean expression was {0}  
booleanExpressionWasNot=the boolean expression was not {0}  
wasAnInstanceOf={0} was an instance of {1}  
wasNotAnInstanceOf={0} was not an instance of {1}, but an instance of {2}  
wasEmpty={0} was empty  
wasNotEmpty={0} was not empty  
wasNull=The reference was null  
midSentenceWasNull=the reference was null  
wasNotNull={0} was not null  
equaledNull=The reference equaled null  
midSentenceEqualedNull=the reference equaled null  
didNotEqualNull={0} did not equal null  
wasNone={0} was None  
wasNotNone={0} was not None  
wasNil={0} was Nil  
wasNotNil={0} was not Nil  
wasSome={0} was equal to Some({1})  
wasNotSome={0} was not equal to Some({1})  
hasNeitherAOrAnMethod={0} has neither a {1} nor an {2} method  
hasNeitherAnOrAnMethod={0} has neither an {1} nor an {2} method  
hasBothAAndAnMethod={0} has both a {1} and an {2} method  
hasBothAnAndAnMethod={0} has both an {1} and an {2} method  
didNotEndWith={0} did not end with substring {1}  
endedWith={0} ended with substring {1}  
didNotStartWith={0} did not start with substring {1}  
startedWith={0} started with substring {1}  
didNotStartWithRegex={0} did not start with a substring that matched the regular expression {1}  
startedWithRegex={0} started with a substring that matched the regular expression {1}  
startedWithRegexButNotGroup={0} started with a substring that matched the regular expression {1}, but {2} did not match group {3}  
startedWithRegexButNotGroupAtIndex={0} started with a substring that matched the regular expression {1}, but {2} did not match group {3} at index {4}  
startedWithRegexAndGroup={0} started with a substring that matched the regular expression {1} and group {2}  
didNotEndWithRegex={0} did not end with a substring that matched the regular expression {1}  
endedWithRegex={0} ended with a substring that matched the regular expression {1}  
endedWithRegexButNotGroup={0} ended with a substring that matched the regular expression {1}, but {2} did not match group {3}  
endedWithRegexButNotGroupAtIndex={0} ended with a substring that matched the regular expression {1}, but {2} did not match group {3} at index {4}  
endedWithRegexAndGroup={0} ended with a substring that matched the regular expression {1} and group {2}  
didNotContainNull={0} did not contain null  
containedNull={0} contained null  
didNotContainKey={0} did not contain key {1}  
containedKey={0} contained key {1}

didNotContainValue={0} did not contain value {1}  
containedValue={0} contained value {1}  
hadSizeInsteadOfExpectedSize={0} had size {1} instead of expected size {2}  
hadSize={0} had size {1}  
hadMessageInsteadOfExpectedMessage={0} had message {1} instead of expected message {2}  
hadExpectedMessage={0} had message {1}  
didNotContainExpectedElement={0} did not contain element {1}  
containedExpectedElement={0} contained element {1}  
didNotIncludeSubstring={0} did not include substring {1}  
includedSubstring={0} included substring {1}  
didNotIncludeRegex={0} did not include substring that matched regex {1}  
includedRegex={0} included substring that matched regex {1}  
includedRegexButNotGroup={0} included substring that matched regex {1}, but {2} did not match group {3}  
includedRegexButNotGroupAtIndex={0} included substring that matched regex {1}, but {2} did not match group {3} at index {4}  
includedRegexAndGroup={0} included substring that matched regex {1} and group {2}  
hadLengthInsteadOfExpectedLength={0} had length {1} instead of expected length {2}  
hadLength={0} had length {1}  
didNotFullyMatchRegex={0} did not fully match the regular expression {1}  
fullyMatchedRegex={0} fully matched the regular expression {1}  
fullyMatchedRegexButNotGroup={0} fully matched the regular expression {1}, but {2} did not match group {3}  
fullyMatchedRegexButNotGroupAtIndex={0} fully matched the regular expression {1}, but {2} did not match group {3} at index {4}  
fullyMatchedRegexAndGroup={0} fully matched the regular expression {1} and group {2}  
matchResultedInFalse=The value {0} matched a case in the specified partial function, but the result was false  
didNotMatch=The value {0} did not match any case in the specified partial function  
matchResultedInTrue=The value {0} matched a case in the specified partial function, and the result was true  
noLengthStructure=have length ({0}) used with an object that had no public field or method named 'length' or 'getLength'  
noSizeStructure=have size ({0}) used with an object that had no public field or method named 'size' or 'getSize'  
sizeAndGetSize=have size ({0}) used with an object that has multiple fields and/or methods named 'size' and 'getSize'  
negativeOrZeroRange=Range ({0}) passed to +- was zero or negative. Must be a positive non-zero number.  
didNotContainSameElements={0} did not contain the same elements as {1}  
containedSameElements={0} contained the same elements as {1}  
didNotContainSameElementsInOrder={0} did not contain the same elements in the same (iterated) order as {1}  
containedSameElementsInOrder={0} contained the same elements in the same (iterated) order as {1}  
didNotContainAllOfElements={0} did not contain all of ({1})  
containedAllOfElements={0} contained all of ({1})  
allOfDuplicate=allOf must not contain any duplicated values  
didNotContainAllElementsOf={0} did not contain all elements of {1}  
containedAllElementsOf={0} contained all elements of {1}  
didNotContainAllOfElementsInOrder={0} did not contain all of ({1}) in order  
containedAllOfElementsInOrder={0} contained all of ({1}) in order  
didNotContainAllElementsOfInOrder={0} did not contain all elements of {1} in order  
containedAllElementsOfInOrder={0} contained all elements of {1} in order  
inOrderDuplicate=inOrder must not contain any duplicated values  
didNotContainOneOfElements={0} did not contain one (and only one) of ({1})

containedOneOfElements={0} contained one (and only one) of ({1})  
didNotContainOneElementOf={0} did not contain one (and only one) element of {1}  
containedOneElementOf={0} contained one (and only one) element of {1}  
didNotContainAtLeastOneOf={0} did not contain at least one of ({1})  
containedAtLeastOneOf={0} contained at least one of ({1})  
atLeastOneOfDuplicate=atLeastOneOf must not contain any duplicated values  
didNotContainAtLeastOneElementOf={0} did not contain at least one element of {1}  
containedAtLeastOneElementOf={0} contained at least one element of {1}  
oneOfDuplicate=oneOf must not contain any duplicated values  
didNotContainOnlyElements={0} did not contain only ({1})  
containedOnlyElements={0} contained only ({1})  
didNotContainOnlyElementsWithFriendlyReminder={0} did not contain only ({1}), did you forget to say : \_\*  
containedOnlyElementsWithFriendlyReminder={0} contained only ({1}), did you forget to say : \_\*  
onlyDuplicate=only must not contain any duplicated values  
onlyEmpty=only must be given at least one element  
didNotContainInOrderOnlyElements={0} did not contain only ({1}) in order  
containedInOrderOnlyElements={0} contained only ({1}) in order  
inOrderOnlyDuplicate=inOrderOnly must not contain any duplicated values  
atMostOneOfDuplicate=atMostOneOf must not contain any duplicated values  
didNotContainAtMostOneOf={0} did not contain at most one of ({1})  
containedAtMostOneOf={0} contained at most one of ({1})  
atMostOneElementOfDuplicate=atMostOneElementOf must not contain any duplicated values  
didNotContainAtMostOneElementOf={0} did not contain at most one element of {1}  
containedAtMostOneElementOf={0} contained at most one element of {1}  
noneOfDuplicate=noneOf must not contain any duplicated values  
didNotContainA={0} did not contain a {1}  
containedA={0} contained a {1}: {2}  
didNotContainAn={0} did not contain an {1}  
containedAn={0} contained an {1}: {2}  
wasNotSorted={0} was not sorted  
wasSorted={0} was sorted  
wasNotDefined={0} was not defined  
wasDefined={0} was defined  
doesNotExist={0} does not exist  
exists={0} exists  
wasNotReadable={0} was not readable  
wasReadable={0} was readable  
wasNotWritable={0} was not writable  
wasWritable={0} was writable  
didNotMatchTheGivenPattern={0} did not match the given pattern  
matchedTheGivenPattern={0} matched the given pattern  
duplicateTestName=Duplicate test name: {0}  
cantNestFeatureClauses=Feature clauses cannot be nested.  
itCannotAppearInsideAnotherIt=An it clause may not appear inside another it clause.  
itCannotAppearInsideAnotherItOrThey=An it clause may not appear inside another it or they clause.  
theyCannotAppearInsideAnotherItOrThey=A they clause may not appear inside another it or they clause.  
describeCannotAppearInsideAnIt=A describe clause may not appear inside an it clause.  
ignoreCannotAppearInsideAnIt=An ignore clause may not appear inside an it clause.



ignoreCannotAppearInsideAnItOrAThey=An ignore clause may not appear inside an it or a they clause.  
scenarioCannotAppearInsideAnotherScenario=A scenario clause may not appear inside another scenario clause.  
featureCannotAppearInsideAScenario=A feature clause may not appear inside a scenario clause.  
ignoreCannotAppearInsideAScenario=An ignore clause may not appear inside a scenario clause.  
testCannotAppearInsideAnotherTest=A test clause may not appear inside another test clause.  
propertyCannotAppearInsideAnotherProperty=A property clause may not appear inside another property clause.  
ignoreCannotAppearInsideATest=An ignore clause may not appear inside a test clause.  
ignoreCannotAppearInsideAProperty=An ignore clause may not appear inside a property clause.  
shouldCannotAppearInsideAnIn=a "should" clause may not appear inside an "in" clause  
mustCannotAppearInsideAnIn=a "must" clause may not appear inside an "in" clause  
whenCannotAppearInsideAnIn=a "when" clause may not appear inside an "in" clause  
thatCannotAppearInsideAnIn=a "that" clause may not appear inside an "in" clause  
whichCannotAppearInsideAnIn=a "which" clause may not appear inside an "in" clause  
canCannotAppearInsideAnIn=a "can" clause may not appear inside an "in" clause  
behaviorOfCannotAppearInsideAnIn=a "behavior of" clause may not appear inside an "in" clause  
dashCannotAppearInsideAnIn=a "-" clause may not appear inside an "in" clause  
inCannotAppearInsideAnotherIn=An in clause may not appear inside another in clause.  
inCannotAppearInsideAnotherInOrIs=An in clause may not appear inside another in or is clause.  
isCannotAppearInsideAnotherInOrIs=An is clause may not appear inside another in or is clause.  
ignoreCannotAppearInsideAnIn=An ignore clause may not appear inside an in clause.  
ignoreCannotAppearInsideAnInOrAnIs=An ignore clause may not appear inside an in or an is clause.  
registrationAlreadyClosed=Test Registration is already closed.  
itMustAppearAfterTopLevelSubject=An it clause must only appear after a top level subject clause.  
theyMustAppearAfterTopLevelSubject=A they clause must only appear after a top level subject clause.  
allPropertiesHadExpectedValues=All properties had their expected values, respectively, on object {0}  
midSentenceAllPropertiesHadExpectedValues=all properties had their expected values, respectively, on object {0}  
propertyHadExpectedValue=The {0} property had its expected value {1}, on object {2}  
midSentencePropertyHadExpectedValue=the {0} property had its expected value {1}, on object {2}  
propertyDidNotHaveExpectedValue=The {0} property had value {2}, instead of its expected value {1}, on object {3}  
midSentencePropertyDidNotHaveExpectedValue=the {0} property had value {2}, instead of its expected value {1}, on object {3}  
propertyNotFound=have {0} ({1}) used with an object that had no public field or method named {0} or {2}  
propertyCheckSucceeded=Property check succeeded  
lengthPropertyNotAnInteger=The length property was none of Byte, Short, Int, or Long.  
sizePropertyNotAnInteger=The size property was none of Byte, Short, Int, or Long.  
wasEqualTo={0} was equal to {1}  
wasNotEqualTo={0} was not equal to {1}  
printedReportPlusLineNumber={0} ({1})  
printedReportPlusPath={0}\n\*\* {1} \*\*  
propertyFailed=Falsified after {0} successful property evaluations.  
propertyExhausted=Gave up after {0} successful property evaluations. {1} evaluations were discarded.  
undecoratedPropertyCheckFailureMessage=Property check failed.  
propertyException={0} was thrown during property evaluation.  
generatorException={0} was thrown during argument generation.  
thrownExceptionsMessage=Message: {0}  
thrownExceptionsLocation=Location: ({0})  
propCheckExhausted=Gave up after {0} successful property evaluations. {1} evaluations were discarded.

propCheckExhaustedAfterOne=Gave up after 1 successful property evaluation. {0} evaluations were discarded.  
occurredAtRow=Occurred at table row {0} (zero based, not counting headings), which had values (  
occurredOnValues=Occurred when passed generated values (  
propCheckLabel=Label of failing property:  
propCheckLabels=Labels of failing property:  
suiteAndTestNamesFormattedForDisplay={0}, {1}  
notLoneElement=Expected {0} to contain exactly 1 element, but it has size {1}  
testNGConfigFailed=TestNG configuration failed  
jUnitTestFailed=A JUnit test failed  
testSummary=Tests: succeeded {0}, failed {1}, canceled {2}, ignored {3}, pending {4}  
suiteSummary=Suites: completed {0}, aborted {1}  
suiteScopeSummary=Suites: completed {0}, aborted {1} Scopes: pending {2}  
runCompletedIn=Run completed in {0}.  
runCompleted=Run completed.  
runAbortedIn=Run aborted after {0}.  
runStoppedIn=Run stopped after {0}.  
runStopped=Run aborted.  
totalNumberOfTestsRun=Total number of tests run: {0}  
oneMillisecond=1 millisecond  
milliseconds={0} milliseconds  
oneSecond=1 second  
oneSecondOneMillisecond=1 second, 1 millisecond  
oneSecondMilliseconds=1 second, {0} milliseconds  
seconds={0} seconds  
secondsMilliseconds={0} seconds, {1} milliseconds  
oneMinute=1 minute  
oneMinuteOneSecond=1 minute, 1 second  
oneMinuteSeconds=1 minute, {0} seconds  
minutes={0} minutes  
minutesOneSecond={0} minutes, 1 second  
minutesSeconds={0} minutes, {1} seconds  
oneHour=1 hour  
oneHourOneSecond=1 hour, 1 second  
oneHourSeconds=1 hour, {0} seconds  
oneHourOneMinute=1 hour, 1 minute  
oneHourOneMinuteOneSecond=1 hour, 1 minute, 1 second  
oneHourOneMinuteSeconds=1 hour, 1 minute, {0} seconds  
oneHourMinutes=1 hour, {0} minutes  
oneHourMinutesOneSecond=1 hour, {0} minutes, 1 second  
oneHourMinutesSeconds=1 hour, {0} minutes, {1} seconds  
hours={0} hours  
hoursOneSecond={0} hours, 1 second  
hoursSeconds={0} hours, {1} seconds  
hoursOneMinute={0} hours, 1 minute  
hoursOneMinuteOneSecond={0} hours, 1 minute, 1 second  
hoursOneMinuteSeconds={0} hours, 1 minute, {1} seconds  
hoursMinutes={0} hours, {1} minutes  
hoursMinutesOneSecond={0} hours, {1} minutes, 1 second

hoursMinutesSeconds={0} hours, {1} minutes, {2} seconds  
withDuration={0} ({1})  
feature=Feature: {0}  
needFixtureInTestName=No test found with the name {0}, because in an org.scalatest.fixture.Suite test names end in either "(Fixture)" or "(Fixture, Informer)"  
testNotFound=Test not found: {0}  
pendingUntilFixed=A block of code that was marked pendingUntilFixed did not throw an exception. Remove "pendingUntilFixed" and the curly braces to eliminate this failure.  
dashXDeprecated=-x has been deprecated and will select an XML reporter in a future version of ScalaTest. Please use -l instead of -x to specify tagsToExclude.  
threadCalledAfterConductingHasCompleted=Cannot invoke the thread method on Conductor after its multi-threaded test has completed.  
cannotInvokeWhenFinishedAfterConduct=Cannot invoke whenFinished after conduct (which is called by whenFinished) has been invoked.  
cantRegisterThreadsWithSameName=Cannot register two threads with the same name. Duplicate name: {0}.  
cannotCallConductTwice=A Conductor's conduct method can only be invoked once.  
cannotWaitForBeatZero=A Conductor starts at beat zero, so you can't wait for beat zero.  
cannotWaitForNegativeBeat=A Conductor starts at beat zero, so you can only wait for a beat greater than zero.  
cannotPassNonPositiveClockPeriod=The clockPeriod passed to conduct must be greater than zero. Value passed was: {0}.  
cannotPassNonPositiveTimeout=The timeout passed to conduct must be greater than zero. Value passed was: {0}.  
whenFinishedCanOnlyBeCalledByMainThread=whenFinished can only be called by the thread that created Conductor.  
suspectedDeadlock=Test aborted because of suspected deadlock. No progress has been made (the beat did not advance) for {0} clock periods ({1}).  
testTimedOut=Test timed out because threads existed that were runnable while no progress was made (the beat did not advance) for {0}.  
suspectedDeadlockDEPRECATED=Test aborted because of suspected deadlock. No progress has been made (the beat did not advance) for {0} clock periods ({1} ms).  
testTimedOutDEPRECATED=Test timed out because threads existed that were runnable while no progress was made (the beat did not advance) for {0} seconds.  
concurrentInformerMod=Two threads have apparently attempted to run a suite at the same time. This has resulted in both threads attempting to concurrently change the current Informer. Suite class name: {0}  
concurrentNotifierMod=Two threads have apparently attempted to run a suite at the same time. This has resulted in both threads attempting to concurrently change the current Notifier. Suite class name: {0}  
concurrentAlerterMod=Two threads have apparently attempted to run a suite at the same time. This has resulted in both threads attempting to concurrently change the current Alerter. Suite class name: {0}  
concurrentDocumenterMod=Two threads have apparently attempted to run a suite at the same time. This has resulted in both threads attempting to concurrently change the current Documenter. Suite class name: {0}  
cantCallInfoNow="Sorry, you can only call the info method during the registration and running phases (i.e., when constructing or executing this {0})."  
cantCallMarkupNow="Sorry, you can only call the markup method during the registration and running phases (i.e., when constructing or executing this {0})."  
concurrentFunSuiteMod=Two threads attempted to modify FunSuite's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "testsFor" or "test" methods on the object before the first thread completed its construction.  
concurrentPropSpecMod=Two threads attempted to modify PropSpec's internal data, which should only be modified

by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "testsFor" or "test" methods on the object before the first thread completed its construction.

concurrentFixtureFunSuiteMod=Two threads attempted to modify FixtureFunSuite's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "testsFor" or "test" methods on the object before the first thread completed its construction.

concurrentFixturePropSpecMod=Two threads attempted to modify FixturePropSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "testsFor" or "test" methods on the object before the first thread completed its construction.

concurrentSpecMod=Two threads attempted to modify Spec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "describe" or "it" methods on the object before the first thread completed its construction.

concurrentFreeSpecMod=Two threads attempted to modify FreeSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "describe" or "it" methods on the object before the first thread completed its construction.

concurrentFixtureSpecMod=Two threads attempted to modify FixtureSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "describe" or "it" methods on the object before the first thread completed its construction.

concurrentFlatSpecMod=Two threads attempted to modify FlatSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to register tests (such as with "it should") on the object before the first thread completed its construction.

concurrentFixtureFlatSpecMod=Two threads attempted to modify FixtureFlatSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to register tests (such as with "it should") on the object before the first thread completed its construction.

concurrentWordSpecMod=Two threads attempted to modify WordSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to register tests (such as with "do something" in) on the object before the first thread completed its construction.

concurrentFixtureWordSpecMod=Two threads attempted to modify FixtureWordSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to register tests (such as with "do something" in) on the object before the first thread completed its construction.

concurrentFixtureFreeSpecMod=Two threads attempted to modify FixtureFreeSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to register tests (such as with "do something" in) on the object before the first thread completed its construction.

concurrentFeatureSpecMod=Two threads attempted to modify FeatureSpec's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "feature" or "scenario" methods on the object before the first thread completed its construction.

concurrentFixtureFeatureSpecMod=Two threads attempted to modify FixtureFeatureSpec's internal data, which

should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "feature" or "scenario" methods on the object before the first thread completed its construction.

concurrentDocSpecMod=Two threads attempted to modify Doc's internal data, which should only be modified by the thread that constructs the object. This likely means that a subclass has allowed the this reference to escape during construction, and some other thread attempted to invoke the "body" method on the object before the first thread completed its construction.

tryNotAFailure=The Try on which failure was invoked was not a Failure.

tryNotASuccess=The Try on which success was invoked was not a Success.

optionValueNotDefined=The Option on which value was invoked was not defined.

eitherLeftValueNotDefined=The Either on which left.value was invoked was not defined as a Left.

eitherRightValueNotDefined=The Either on which right.value was invoked was not defined as a Right.

partialFunctionValueNotDefined=The PartialFunction on which valueAt( {0} ) was invoked was not defined.

insidePartialFunctionNotDefined=The partial function passed as the second parameter to inside was not defined at the value passed as the first parameter to inside, which was: {0}

insidePartialFunctionAppendSomeMsg={0},\n{1}inside {2}

insidePartialFunctionAppendNone=An exception was thrown,\n{0}inside {1}

didNotEventuallySucceed=The code passed to eventually never returned normally. Attempted {0} times over {1}.

didNotEventuallySucceedBecause=The code passed to eventually never returned normally. Attempted {0} times over {1}. Last failure message: {2}.

wasNeverReady=A timeout occurred waiting for a future to complete. Queried {0} times, sleeping {1} between each query.

awaitMustBeCalledOnCreatingThread=The await method on Waiter may only be called from the same thread that constructed the Waiter.

awaitTimedOut=The await method on Waiter timed out.

futureReturnedAnException=The future returned an exception of type: {0}.

futureReturnedAnExceptionWithMessage=The future returned an exception of type: {0}, with message: {1}.

futureWasCanceled=The future was canceled.

futureExpired=The future expired. Queried {0} times, sleeping {1} milliseconds between each query.

timeoutFailedAfter=The code passed to failAfter did not complete within {0}.

timeoutFailingAfter=The code passed to failingAfter did not complete within {0}.

timeoutCanceledAfter=The code passed to cancelAfter did not complete within {0}.

timeoutCancelingAfter=The code passed to cancelingAfter did not complete within {0}.

testTimeLimitExceeded=The test did not complete within the specified {0} time limit.

singularNanosecondUnits={0} nanosecond

pluralNanosecondUnits={0} nanoseconds

singularMicrosecondUnits={0} microsecond

pluralMicrosecondUnits={0} microseconds

singularMillisecondUnits={0} millisecond

pluralMillisecondUnits={0} milliseconds

singularSecondUnits={0} second

pluralSecondUnits={0} seconds

singularMinuteUnits={0} minute

pluralMinuteUnits={0} minutes

singularHourUnits={0} hour  
pluralHourUnits={0} hours  
singularDayUnits={0} day  
pluralDayUnits={0} days

leftAndRight={0} and {1}  
leftCommaAndRight={0}, and {1}  
configMapEntryNotFound=The config map did not contain required entry with key "{0}".  
configMapEntryHadUnexpectedType=The config map entry with key "{0}" had an unexpected (runtime) type: {1}.  
The expected (runtime) type was: {2}. The value was: {3}.

forAssertionsMoreThanZero={0} argument must be more than 0  
forAssertionsMoreThanEqualZero={0} argument must be more than or equal 0  
forAssertionsMoreThan={0} argument must be more than {1} argument  
forAssertionsGenTraversableMessageWithStackDepth=at index {0}, {1} ({2})  
forAssertionsGenTraversableMessageWithoutStackDepth=at index {0}, {1}  
forAssertionsGenMapMessageWithStackDepth=at key {0}, {1} ({2})  
forAssertionsGenMapMessageWithoutStackDepth=at key {0}, {1}  
forAssertionsNoElement=no element  
forAssertionsElement={0} element  
forAssertionsElements={0} elements  
forAssertionsIndexLabel=index {0}  
forAssertionsIndexAndLabel=index {0} and {1}  
forAssertionsKeyLabel=key {0}  
forAssertionsKeyAndLabel=key {0} and {1}  
forAllFailed=forAll failed, because: \n{0} \nin {1}  
allShorthandFailed="all" inspection failed, because: \n{0} \nin {1}  
forAtLeastFailedNoElement=forAtLeast({0}) failed, because no element satisfied the assertion block: \n{1} \nin {2}  
forAtLeastFailed=forAtLeast({0}) failed, because only {1} satisfied the assertion block: \n{2} \nin {3}  
atLeastShorthandFailedNoElement="atLeast({0})" inspection failed, because no element satisfied the assertion block: \n{1} \nin {2}  
atLeastShorthandFailed="atLeast({0})" inspection failed, because only {1} satisfied the assertion block: \n{2} \nin {3}  
forAtMostFailed=forAtMost({0}) failed, because {1} elements satisfied the assertion block at {2} in {3}  
atMostShorthandFailed="atMost({0})" inspection failed, because {1} elements satisfied the assertion block at {2} in {3}  
forExactlyFailedNoElement=forExactly({0}) failed, because no element satisfied the assertion block: \n{1} \nin {2}  
forExactlyFailedLess=forExactly({0}) failed, because only {1} satisfied the assertion block at {2}: \n{3} \nin {4}  
forExactlyFailedMore=forExactly({0}) failed, because {1} satisfied the assertion block at {2} in {3}  
exactlyShorthandFailedNoElement="exactly({0})" inspection failed, because no element satisfied the assertion block: \n{1} \nin {2}  
exactlyShorthandFailedLess="exactly({0})" inspection failed, because only {1} satisfied the assertion block at {2}: \n{3} \nin {4}  
exactlyShorthandFailedMore="exactly({0})" inspection failed, because {1} satisfied the assertion block at {2} in {3}  
forNoFailed=forNo failed, because 1 element satisfied the assertion block at {0} in {1}  
noShorthandFailed="no" inspection failed, because 1 element satisfied the assertion block at {0} in {1}

forBetweenFailedNoElement=forBetween({0}, {1}) failed, because no element satisfied the assertion block: \n{2} \nin {3}

forBetweenFailedLess=forBetween({0}, {1}) failed, because only {2} satisfied the assertion block at {3}: \n{4} \nin {5}

forBetweenFailedMore=forBetween({0}, {1}) failed, because {2} satisfied the assertion block at {3} in {4}

betweenShorthandFailedNoElement="between({0}, {1})" inspection failed, because no element satisfied the assertion block: \n{2} \nin {3}

betweenShorthandFailedLess="between({0}, {1})" inspection failed, because only {2} satisfied the assertion block at {3}: \n{4} \nin {5}

betweenShorthandFailedMore="between({0}, {1})" inspection failed, because {2} satisfied the assertion block at {3} in {4}

forEveryFailed=forEvery failed, because: \n{0} \nin {1}

everyShorthandFailed="every" inspection failed, because: \n{0} \nin {1}

discoveryStarting=Discovery starting.

discoveryCompleted=Discovery completed.

discoveryCompletedIn=Discovery completed in {0}.

doingDiscovery=Discovering Suites to run...

atCheckpointAt=(in Checkpoint) at

slowpokeDetected=Test still running after {0}: suite name: {1}, test name: {2}.

alertFormattedText=\*\*\* {0}

noteFormattedText=\*\*\* {0}

testFlickered=Test canceled because flickered: initially failed, but succeeded on retry

cannotRerun=Test in memory file is not rerunnable: rerun event = {0}, suiteId = {1}, testName = {2}.

testCannotBeNestedInsideAnotherTest=Test cannot be nested inside another test.

moreThanOneAnnotationFound=More than one "{0}" Annotation found on class hierarchy of class "{1}"

notExactlyOneAnnotationFound=Not exactly one "{0}" Annotation found on class hierarchy of class "{1}"

nonEmptyMatchPatternCase=No code is allowed to the right of rocket symbols (=>) in a partial function passed to matchPattern, because matchPattern is intended only for ensuring that an expression matches a pattern. If you want to make further assertions after a successful pattern match, use org.scalatest.Inside instead.

expectedTypeErrorButGotNone=Expected a type error, but got none for code: {0}

gotTypeErrorAsExpected=Got a type error as expected for code: {0}

expectedCompileErrorButGotNone=Expected a compiler error, but got none for code: {0}

didNotCompile={0} did not compile

compiledSuccessfully={0} compiled successfully

expectedTypeErrorButGotParseError=Expected a type error, but got the following parse error: "{0}", for code: {1}

expectedNoErrorButGotTypeError=Expected no compiler error, but got the following type error: "{0}", for code: {1}

expectedNoErrorButGotParseError=Expected no compiler error, but got the following parse error: "{0}", for code: {1}

beTripleEqualsNotAllowed=The deprecation cycle for 'be ===' has finished and the syntax is no longer supported. Please use equal, be, or === syntax instead.

assertionShouldBePutInsideItOrTheyClauseNotDescribeClause=Assertion should be put inside it or they clause, not

describe clause.

exceptionWasThrownInDescribeClause={0} was thrown inside describe({1}), construction cannot continue: {2}

assertionShouldBePutInsideInClauseNotDashClause=Assertion should be put inside in clause, not - clause.

exceptionWasThrownInDashClause={0} was thrown inside {1} -, construction cannot continue: {2}

assertionShouldBePutInsideScenarioClauseNotFeatureClause=Assertion should be put inside scenario clause, not feature clause.

exceptionWasThrownInFeatureClause={0} was thrown scenario({1}) -, construction cannot continue: {2}

assertionShouldBePutInsideItOrTheyClauseNotShouldMustWhenThatWhichOrCanClause=Assertion should be put inside it or they clause, not should, must, when, that, which or can clause.

exceptionWasThrownInShouldClause={0} was thrown inside {1} should, construction cannot continue: {2}

exceptionWasThrownInMustClause={0} was thrown inside {1} must, construction cannot continue: {2}

exceptionWasThrownInWhenClause={0} was thrown inside {1} when, construction cannot continue: {2}

exceptionWasThrownInThatClause={0} was thrown inside {1} that, construction cannot continue: {2}

exceptionWasThrownInWhichClause={0} was thrown inside {1} which, construction cannot continue: {2}

exceptionWasThrownInCanClause={0} was thrown inside {1} can, construction cannot continue: {2}

assertionShouldBePutInsideDefNotObject=Assertion should be put inside def, not object.

exceptionWasThrownInObject={0} was thrown inside object `{1}`, construction cannot continue.

tableDrivenForEveryFailed=tableDrivenForEveryFailed: {0}

tableDrivenExistsFailed=tableDrivenExistsFailed: {0}

withFixtureNotAllowedInAsyncFixtures=withFixture is not allowed in AsyncFixtures

leftParensCommaBut=({0}), but {1}

rightParensCommaBut={0}, but ({1})

bothParensCommaBut=({0}), but ({1})

leftParensCommaAnd=({0}), and {1}

rightParensCommaAnd={0}, and ({1})

bothParensCommaAnd=({0}), and ({1})

assertionWasTrue=Assertion was true

Found in path(s):

\* /opt/cola/permits/1685982723\_1684869192.7680812/0/scalatest-2-10-3-0-0-sources-2-jar/org/scalatest/ScalaTestBundle.properties

## 1.147 apache-common-codec 1.10

### 1.147.1 Available under license :

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/\*

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```

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* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* SHA2-based Unix crypt implementation.
* <p>
* Based on the C implementation released into the Public Domain by Ulrich Drepper <drepper@redhat.com>;
* http://www.akkadia.org/drepper/SHA-crypt.txt
* <p>
* Conversion to Kotlin and from there to Java in 2012 by Christian Hammers <ch@lathspell.de>; and likewise
put
* into the Public Domain.
* <p>
* This class is immutable and thread-safe.
*
* @version $Id: Sha2Crypt.java 1619948 2014-08-22 22:53:55Z ggregory $
* @since 1.7
*/

```

Found in path(s):

```

* /opt/cola/permits/1530515190_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-
tar-gz/nikitakraev-apache-common-codec-
caa8093/apache/src/main/java/apache/commons/codec/digest/Sha2Crypt.java

```

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```

/*
* Licensed to the Apache Software Foundation (ASF) under one or more
* contributor license agreements. See the NOTICE file distributed with
* this work for additional information regarding copyright ownership.
* The ASF licenses this file to You under the Apache License, Version 2.0
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```

```

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* See the License for the specific language governing permissions and
* limitations under the License.
*/
/**
* The libc crypt() "1" and Apache "$apr1$" MD5-based hash algorithm.
* <p>
* Based on the public domain ("beer-ware") C implementation from Poul-Henning Kamp which was found at: <a
* href="http://www.freebsd.org/cgi/cvsweb.cgi/src/lib/libcrypt/crypt-md5.c?rev=1.1;content-type=text%2Fplain">
* crypt-md5.c @ freebsd.org

* <p>
* Source:
*
* <pre>
* $FreeBSD: src/lib/libcrypt/crypt-md5.c,v 1.1 1999/01/21 13:50:09 brandon Exp $
* </pre>
* <p>
* Conversion to Kotlin and from there to Java in 2012.
* <p>
* The C style comments are from the original C code, the ones with "/*" from the port.
* <p>
* This class is immutable and thread-safe.
*
* @version $Id: Md5Crypt.java 1563226 2014-01-31 19:38:06Z ggregory $
* @since 1.7
*/

```

Found in path(s):

```

* /opt/cola/permits/1530515190_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-
tar-gz/nikitakraev-apache-common-codec-
caa8093/apache/src/main/java/apache/commons/codec/digest/Md5Crypt.java

```

No license file was found, but licenses were detected in source scan.

```

/*
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* The ASF licenses this file to You under the Apache License, Version 2.0
* (the "License"); you may not use this file except in compliance with
* the License. You may obtain a copy of the License at
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* http://www.apache.org/licenses/LICENSE-2.0
*
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* distributed under the License is distributed on an "AS IS" BASIS,
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```

\*/

Found in path(s):

- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/binary/Hex.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/DecoderException.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/bm/RuleType.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/DaitchMokotoffSoundex.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/Caverphone1.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/DoubleMetaphone.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/bm/NameType.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/BinaryEncoder.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/net/BCodec.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/ColognePhonetic.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/bm/PhoneticEngine.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/net/QCodec.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/Decoder.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/EncoderException.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/binary/Base64OutputStream.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-tar-gz/nikitakraev-apache-common-codec-caa8093/apache/src/main/java/apache/commons/codec/language/bm/ResourceConstants.java
- \* /opt/cola/permits/1530515190\_1673519223.8258314/0/nikitakraev-apache-common-codec-1-10-0-g84dd72c-1-

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caa8093/apache/src/main/java/apache/commons/codec/StringEncoderComparator.java  
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caa8093/apache/src/main/java/apache/commons/codec/language/Metaphone.java  
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caa8093/apache/src/main/java/apache/commons/codec/binary/BaseNCodec.java

# 1.148 ismaestro/angular7-example-app v5.1.0

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## 1.149 dnsjava 2.1.8

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## 1.150 asm-analysis 5.0.3

## 1.151 jackson-module-scala 2.9.5

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# 1.152 apache-commons-cli 1.3.1

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## 1.153 findbugs-jsr305 1.3.9

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Found in path(s):

```
* /opt/ws_local/PERMITS_SQL/1010092589_1591857556.34/0/jsr305-1-3-9-
jar/javax/annotation/concurrent/GuardedBy.java
* /opt/ws_local/PERMITS_SQL/1010092589_1591857556.34/0/jsr305-1-3-9-
jar/javax/annotation/concurrent/NotThreadSafe.java
* /opt/ws_local/PERMITS_SQL/1010092589_1591857556.34/0/jsr305-1-3-9-
jar/javax/annotation/concurrent/Immutable.java
```

## 1.154 apache-xalan-java 2.7.2

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<a href="http://www.flexiprovider.de/">http://www.flexiprovider.de/</a>

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<li>Albert Moliner <amoliner&#064evintia.com> - initial TSP implementation.</li>  
<li>Carlos Lozano <carlos&#064evintia.com> - initial TSP implementation, patch to SignerInformation for supporting repeated signers, initial updates for supporting repeated attributes in CMS.</li>  
<li>Javier Delgado <javi&#064javi.codewarp.org> - initial Mozilla PublicKeyAndChallenge classes.</li>  
<li>Joni Hahkala <joni.hahkala&#064cern.ch> - initial implementations of VOMS Attribute Certificate Validation, IetfAttrSyntax, and ObjectDigestInfo. We also wish to thank the <a href="http://www.eu-egee.org">EGEE project</a> for making the work available.</li>  
<li>Rolf Schillinger<rolf&#064sir-wum.de> - initial implementation of Attribute Certificate generation.</li>  
<li>Sergey Bahtin <Sergey\_Bahtin&#064yahoo.com> - fix for recovering certificate aliases in BKS and UBER key stores. Initial implementations of GOST-28147, GOST-3410, EC GOST-3410, GOST OFB mode (GOFB) and GOST-3411.</li>  
<li>Franck Leroy <Franck.Leroy&#064keynectis.com> - ANS.1 set sorting. Contributions to TSP implementation. Test vectors for Bleichenbacher's forgery attack.</li>  
<li>Atsuhiko Yamanaka <ymnk&#064jcraft.com> - patch for improving use of Montgomery numbers in BigInteger library. Patch to use size of private exponent in DH parameters.</li>  
<li>Nickolay Bolshakov <tyrex&#064reksoft.ru> - patch for class cast exception in AuthorityInformationAccess class.</li>  
<li>Soren Hilmer <soren.hilmer&#064tietoenator.com> - patches for CertID with issuerSerial set in TSP implementation, additional compliance testing.</li>  
<li>Steve Mitchell <mitchell&#064intertrust.com> - patch for stateful path validator fix. Patch to allow BigInteger class to create negative numbers from byte arrays. Additions to allow different providers to be used for asymmetric/symmetric encryption in OpenPGP. Optimisation to avoid redundant verification in path validator. Suggestion to use PKIXParameters.getSigProvider() correctly.</li>  
<li>Dirk Eisner <D.Eisner&#064seeburger.de> - initial implementation of ISO 78164-4 padding.</li>  
<li>Julien Pasquier <julienpasquier&#064free.fr> - initial implementation of attribute classes from RFC 3126. Fix to KEKIdentifier, OtherKeyAttribute parsing. Initial ContentHints class.</li>  
<li>Matteo <matartuso&#064libero.it> - sequence patch to ASN1Dump.</li>  
<li>Andrew Paterson <andrew.paterson&#064burnsecs.com> - patches to PGP tools, isRevoked method on PGPPublicKey.</li>

- <li>Vladimir Molotkov <vladimir.n.molotkov@intel.com> - extensive provider exception handling compliance testing.</li>
- <li>Florin Kollan <adlocflo@web.de> - fix to ElGamalKeyParameters equality testing.</li>
- <li>Pavel Vassiliev <paulvas@gmail.com> - Initial GOST28147Mac implementation.</li>
- <li>Tom Pesman <tom@tlinux.net> - addition of DES-EDE encryption for RSAPrivate keys to PEMWriter.</li>
- <li>Lukasz Kowalczyk <lukasz.b.kowalczyk@gmail.com> - patch to fix parsing issue with OpenSSL PEM based certificate requests.</li>
- <li>Arndt Hasch <Arndt.Hasch@maxence.de> - additional fix for partial reading with new style PGP packets.</li>
- <li>Fix Bernd (KCDP 11) <bernd.fix@credit-suisse.com> - fix for 31 byte issue and exception throwing by Whirlpool.</li>
- <li>David M. Lee <dmlee@Crossroads.com> - code for add and remove secret key in the PGPSecretKeyRing class. Additions to S/MIME and CMS unit tests.</li>
- <li>Mike Dillon <md5@embody.org> - additional checks for PGP secret and public key construction, patches to copyWithNewPassword.</li>
- <li>tu-vi cung <t2cung@hotmail.com> - patch for out of bounds problem in getDecoderStream method.</li>
- <li>Chris Schultz <cschultz@gmail.com> - fix for InputStream constructor for X509V2AttributeCertificate.</li>
- <li>David M. Lee <dmlee@Crossroads.com> - implementation assistance with streaming CMS classes.</li>
- <li>Joel Rees <rees@ddcom.co.jp> - fix to correct getOID methods from returning same set on X.509 attribute certificates.</li>
- <li>Francesc Sau <francesc.sau@partners.netfocus.es> - micro fix for tsp Accuracy class.</li>
- <li>Larry Bugbee <bugbee@mac.com> - initial ECNR implementation.</li>
- <li>Remi Blancher <Remi.Blancher@keynectis.com> - Contributions to TSP implementation. Initial implementation of RFC 3739 and ICAO ASN.1 classes.</li>
- <li>Brian O'Rourke <brianorourke@gmail.com> - patch for signature creation time override in OpenPGP.</li>
- <li>Andreas Schwier <andreas.schwier@cardcontact.de> - initial implementation of ISO9797 MAC Algorithm 3, addition of DES-EDE 64 MAC to the provider, fix to EC point encoding, addition of EC and RSA-PSS OIDs to CMS, addition of AES-CMAC and DESede-CMAC to JCE provider.</li>
- <li>David Josse <david.josse@transacttools.net> - Patch for trailer function in version 2 signature packets.</li>
- <li>Kishimoto Kazuhiko <kazu-k@hi-ho.ne.jp> - RFC 3280 updates to policy processing in the CertPath validator. Additional test data not covered by NIST.</li>
- <li>Lawrence Tan <lwrnctan@gmail.com> - Large field OID sample test data. Missing key types in JDKKeyFactory.</li>
- <li>Carlos Valiente <superdupont@gmail.com> - Addition of CRL writing to the PEMWriter class.</li>
- <li>Keyon AG, Martin Christinat, <a href="http://www.keyon.ch">http://www.keyon.ch</a> - fixing incorrect ASN.1 encoding of field elements in X9FieldElement class.</li>
- <li>Olaf Keller, <olaf.keller.bc@bluewin.ch> - initial implementation of the elliptic curves over binary fields F2m. Additional tests and modifications to elliptic curve support for both F2m and Fp. Performance improvements to F2m multiplication. Initial implementation of WNAF/WTNAF point multiplication. Improvement to k value generation in ECDSA.</li>
- <li>Jörg Eichhorn <eichhorn@ponton-consulting.de> - patch to fix EOF read on SharedFileInputStream, support for F2m compression.</li>
- <li>Karsten Ohme <widerstand@t-online.de> - initial check against for out of range data on non byte aligned RSA keys. Addition of equals/hashCode on ECCurve.Fp. Additional curve type support for Fp, contributions to F2m compression. F2m decoding for ECPointUtil. Infinity fix and prime192v2 fix for Fp. Extra validation for RSA key creation. Fix to name typos for some OpenSSL key generators. RFC-1779 table, improved RFC 2253 compliance for X509Name. Additional constructor validation for X.509/ESS ASN.1 classes. Validation for

Printable, IA5, and Numeric Strings.

Support for surrogate pairs in DERUTF8String, DER UTF8 test. Additional X.509 name attributes for ISIS-MTT, RFC 3039, addition of indirect CRL support, initial X509 LDAP CertStore implementation, CertificatePair class, and X509CertificatePair class. Contributions to X509Store/Parser infrastructure and design.

CertPath support for implicit DSA parameters and a range of NameConstraints. Addition of support for V1 attribute certificates and attribute certificate path validation. Initial classes for ASN.1 ISIS-MTT support. Enhancements for improving compliance with the NIST CertPath tests.

- Carlos Lozano Ruiz <carlos@tradise.com> - patch for ctrl only handling in CRLFOutputStream.
- John Alfred Prufrock <j.a.prufrock@gmail.com> - mods to GOST-3411 and MD2 to support ExtendedDigest.
- Stefan Neusatz Guilhen <sneusatz@gmail.com> - initial version of RoleSyntax, improvements to AttributeCertificateHolder and AttributeCertificateIssuer.
- Marzio Lo Giudice <marzio.logiudice@gmail.com> - fix to endianness in KDF2BytesGenerator, additional KDF2 tests.
- Georg Lippold <georg.lippold@gmx.de> - initial implementation of NaccacheStern cipher.
- Chris Viles <chris\_viles@yahoo.com> - fix to SignatureSubpacket critical bit setting.
- Pasi Eronen <Pasi.Eronen@nokia.com> - extra toString() support for ASN.1 library. Initial patch for large OID components.
- Lijun Liao <lijun.liao@rub.de> - performance enhancements for SHA family of digests. Bug report and patch for blank line handling in ArmoredInputStream.
- Maria Ivanova <maria.ivanova@gmail.com> - support for tags > 30 in ASN.1 parsing.
- Armin H&uuml;berling <arminha@student.ethz.ch> - first cut of internationalisation, initial PKIX validation classes.
- Marius Schilder <mschilder@google.com> - main set of test vectors for Bleichenbacher's forgery attack.
- Xavier Le Vouch <xavier@brittanyssoftware.com> - general code clean ups.
- Erik Tews <e\_tews@cdc.informatik.tu-darmstadt.de> - initial threaded random seed generator, constant-time PKCS#1.5 decoding.
- Thomas Dixon <reikomusha@gmail.com> - initial implementations of TEA/XTEA, Salsa20, ISAAC, and Noekeon. XTEA enhancements.
- Frank Cornelis <info@frankcornelis.be> - addition of crlAccessMethod in X509ObjectIdentifiers.
- Rui Joaquim <rjoaquim@cc.isel.ipl.pt> - initial implementation of RSA blinding for signatures.
- David Stacey <DStacey@allantgroup.com> - addition of trust packet checking on revocation signatures in PGPSecretKeyRing.
- Martijn Brinkers <list@mitm.nl> - better exception handling in CMS enveloping, "just in time" modifications for CRL and Sequence evaluation.
- Julius Davies <juliusdavies@gmail.com> - additional modes and algorithm support in PEMReader.
- Matthias <g@rtner.de> - GnuPG compatibility changes for PBEFileProcessor.
- Olga K&uuml;thler <olga.kaethler@hjp consulting.com> - initial implementation of TeleTrusT EC curves, additional ISO 9797 MACs, contributions to EAC OIDs, addition of EAC algorithms to CMS Signing.
- Germano Rizzo <germano.rizzo@gmail.com> - initial implementation of CMac, EAX, HC-128, and HC-256, optimisations for Salsa20.
- N&uacute;ria Mar&iacute; <numaa@hotmail.com> - patch for alternate data type recognition in CMSSignedDataParser.
- Janis Schuller <js@tzi.de> - addition of NotationData packets for OpenPGP.
- Michael Samblanet <mike@samblanet.com> - patches towards improved Sun/default provider support in CMS.



- <li>Mike StJohns <mstjohns@comcast.net> - patches for supporting empty subject in X.509 certificate generation, noneWithECDSA.</li>
- <li>Ramon Keller <ramon.keller@gmx.ch> - patch to deal with null revocations return from other CRL in X509V2CRLGenerator.</li>
- <li>Mark Nelson <mark@nabr.com> - correction to excluded DN in name constraints processing for PKIX processing.</li>
- <li>Eugene Golushkov <eugene\_gff@ukr.net> - mask fix to single byte read in TlsInputStream.</li>
- <li>Julien Pasquier <julienpasquier@free.fr> - additional classes for supporting signature policy and signer certificates in the ASN.1 esf and ess libraries.</li>
- <li>Peter Knopp <pknopp@mtg.de> - fix for named curve recognition in ECGOST key generation.</li>
- <li>Jakub Gwozdz <gwozdz@rpg.pl> - addition of getTsa() to TimeStampTokenInfo.</li>
- <li>Bartosz Malkowski <bmalkow@tigase.org> - initial implementation of VMPC cipher, VMPCRandomGenerator, VMPCMac.</li>
- <li>Tal Yacobi <tal.yacobi@octavian-tech.com> - fix for issue in OpenPGP examples [#BJA-55].</li>
- <li>Massimiliano Ziccardi <massimiliano.ziccardi@gmail.com> - support for counter signature reading in CMS API, update for multiple counter signature attributes.</li>
- <li>Andrey Pavlenko <andrey.a.pavlenko@gmail.com> - security manager patch for PKCS1Encoding property check.</li>
- <li>Mike StJohns <mstjohns@comcast.net> - updates to KeyPurposeId</li>
- <li>J Ross Nicoll <jrn@jrn.me.uk> - improved exception handling for getInstance() in ASN.1 library.</li>
- <li>Matthew Stevenson <mavricknz@yahoo.com> - patch to constructor for CRMF CertSequence.</li>
- <li>Gabriele Contini <gcontini@hotmail.com> - identified a bug in ASN.1 library with handling of unterminated NDEF's.</li>
- <li>Roelof Naude <roelof.naude@epiuse.com> - patch for TLS client to send empty client certs in response to HP\_CERTIFICATE\_REQUEST.</li>
- <li>Patrick Peck <peck@signaturen.at> - identified problem with DERApplicationSpecific and high tag numbers in ASN.1 library.</li>
- <li>Michael LeMay <lemaymd@lemaymd.com> - identified problem with EAX [#BJA-93].</li>
- <li>Alex Dupre <ale@FreeBSD.org> - fix to use of Signature rather than SignatureSpi in provider [#BJA-90]. Addition of null provider use to SignedPublicKeyAndChallenge and PKCS10CertificationRequest [#BJA-102]</li>
- <li>Michael Schoene <michael@sigrid-und-michael.de> - fix of improper handling of null in ExtendedPKIXParameters.setTrustedACIssuers(), check for V2 signingCertificate attribute in TimeStampResponse.validate().</li>
- <li>Ion Larrañaga <ilarra@s21sec.com> fix to default partial packet generation in BCPGOutputStream.</li>
- <li>Bob Kerns <bob.kerns@positscience.com> fix to hashCode for X509CertificateObject.</li>
- <li>Stefan Meyer <stefan.meyer@ewe.de> backport for PKIXCertPathValidator and SMIMESignedMailReviewer.</li>
- <li>Robert J. Moore <Robert.J.Moore@allanbank.com> speedups for OpenPGPCFB mode, clean room JCE patches.</li>
- <li>Rui Hodai <rui@po.ntts.co.jp> speed ups for Camellia implementation, CamelliaLightEngine.</li>
- <li>Emir Bucalovic <emir.bucalovic@mail.com> initial implementation of Grain-v1 and Grain-128.</li>
- <li>Torbjorn Svensson <tobbe79@gmail.com> initial implementation of Grain-v1 and Grain-128.</li>
- <li>Paul FitzPatrick <bouncycastle\_pfitz@fitzpatrick.cc> error message fix to X509LDAPCertStoreSpi, comparison fix to BCStrictStyle.</li>
- <li>Henrik Andersson <k.henrik.andersson@gmail.com> addition of UniqueIssuerID to certificate generation.</li>
- <li>Cagdas Cirit <cagdas@citir@gmail.com> subjectAlternativeName fix for x509CertStoreSelector.</li>

<li>Harakiri <harakiri\_23&#064yahoo.com> datahandler patch for attached parts in SMIME signatures.</li>  
<li>Pedro Henriques <pmahenriques&#064gmail.com> explicit bounds checking for DESKeyGenerator, code simplification for OAEP encoding.</li>  
<li>Lothar Kimmeringer <job&#064kimmeringer.de> verbose mode for ASN1Dump, support for DERExternal.</li>  
<li>Richard Farr <rfarr.se&#064gmail.com> initial SRP-6a implementation.</li>  
<li>Thomas Castiglione <castiglione&#064au.ibm.com> patch to encoding for CRMF OptionalValidity.</li>  
<li>Elisabetta Romani <eromani&#064sopei.it> patch for recognising multiple counter signatures.</li>  
<li>Robin Lundgren <r737lundgren&#064gmail.com> CMPCertificate constructor from X509CertificateStructure fix.</li>  
<li>Petr Kadlec <mormegil&#064centrum.cz> fix to sign extension key and IV problem in HC-128, HC-256.</li>  
<li>Andreas Antener <antener\_a&#064gmx.ch> fix to buffer reset in AsymmetricBufferedBlockCipher.</li>  
<li>Harendra Rawat <hsrawat&#064yahoo.com> fix for BERConstructedOctetString.</li>  
<li>Rolf Lindemann <lindemann&#064trustcenter.de> patch for PKCS12 key store to support more flexible attribute specifications [#BMA-42].</li>  
<li>Alex Artamonov <alexart.home&#064gmail.com> name look up patch for GOST-2001 parameters.</li>  
<li>Mike Lyons <mlyons&#064layer7tech.com> work arounds for EC JDK bug 6738532 and JSSE EC naming conventions.</li>  
<li>Chris Cole <chris\_h\_cole&#064yahoo.com> identified a problem handling null passwords when loading a BKS keystore.</li>  
<li>Tomas Krivanek <tom&#064atack.cz> added checking of Sender header to SignedMailValidator.</li>  
<li>Michael <emfau&#064t-online.de> correction of field error in getResponse method in CertRepMessage.</li>  
<li>Trevor Perrin <trevor&#064cryptography.com> addition of constant time equals to avoid possible timing attacks.</li>  
<li>Markus Kil&aring;s <markus&#064primekey.se> several enhancements to TimeStampResponseGenerator.</li>  
<li>Dario Novakovic <darionis&#064yahoo.com> fix for NPE when checking revocation reason on CRL without extensions.</li>  
<li>Michael Smith <msmith&#064cbnco.com> bug fixes and enhancements to the CMP and CRMF classes, initial Master List classes.</li>  
<li>Andrea Zilio <andrea.zilio&#064gmail.com> fix for PEM password encryption of private keys.</li>  
<li>Alex Birkett <alex&#064birkett.co.uk> added support for EC cipher suites in TLS client (RFC 4492) [#BJA-291].</li>  
<li>Wayne Grant <waynedgrant&#064gmail.com> additional OIDs for PCKS10 and certificate generation support.</li>  
<li>Frank Cornelis <info&#064frankcornelis.be> additional support classes for CAdES, enhancements to OCSP classes.</li>  
<li>Jan Dittberner <jan&#064dittberner.info> addHeader patch for SMIME generator.</li>  
<li>Bob McGowan <boab.mcgoo&#064btinternet.com> patch to support different content and mgf digests in PSS signing.</li>  
<li>Ivo Matheis <i.matheis&#064seeburger.de> fix to padding verification in ISO-9796-1.</li>  
<li>Marco Sandrini <nessche&#064gmail.com> patch to add IV to ISO9797Alg3Mac.</li>  
<li>Alf Malf <alfilmalf&#064hotmail.com> removal of unnecessary limit in CMSContentInfoParser.</li>  
<li>Alfonso Massa <alfonso.massa&#064insiel.it> contributions to CMS time stamp classes.</li>  
<li>Giacomo Boccoardo <gboccoardo&#064unimaticaspa.it> initial work on CMSTimeStampedDataParser.</li>  
<li>Arnis Tartu <arnis&#064ut.ee> patches for dealing with OIDs with specific key sizes associated in CMS.</li>  
<li>Janusz Sikocinski <J.Sikocinski&#064gdzie.pl> addition of Features subpacket support to OpenPGP API.</li>  
<li>Juri Hudolejev <jhudolejev&#064gmail.com> JavaDoc fix to CMSSignedDataParser.</li>  
<li>Liane Velten <liane.velten&#064hjp-consulting.com> fine tuning of code for DHParameters validation.</li>

- <li>Shawn Willden <swillden@#064google.com> additional functionality to PGPKKeyRing.</li>
- <li>Atanas Krachev <akrachev@#064gmail.com> added support for revocation signatures in OpenPGP.</li>
- <li>Mickael Laiking <mickael.laiking@#064keynectis.com> initial cut of EAC classes.</li>
- <li>Tim Buktu <tbuktu@#064hotmail.com> Initial implementation of NTRU signing and encryption.</li>
- <li>Bernd <rbernd@#064gmail.com> Fix for open of PGP literal data stream with UTF-8 naming.</li>
- <li>Steing Inge Morisbak <stein.inge.morisbak@#064BEKK.no> Test code for lower case Hex data in PEM headers.</li>
- <li>Andreas Schmid <andreas.schmid@#064tngtech.com> Additional expiry time check in PGPPublicKeys.</li>
- <li>Phil Steitz <phil.steitz@#064gmail.com> Final patch eliminating JCE dependencies in the OpenPGP BC classes.</li>
- <li>Ignat Korchagin <ignat.korchagin@#064gmail.com> Initial implementation of DSTU-4145-2002, long hash fix for DSTU-4145-2002.</li>
- <li>Petar Petrov <p.petrov@#064bers-soft.com> Testing and debugging of UTF-8 OpenPGP passwords.</li>
- <li>Daniel Fitzpatrick <daniel.f.nwr@#064gmail.com> Initial implementation of ephemeral key support for IES, initial implementations of RSA-KEM and ECIES-KEM, initial implementation of homogeneous projective coordinates for EC.</li>
- <li>Andy Neilson <Andy.Neilson@#064quest.com>a further patches to deal with multiple providers and PEMReader.</li>
- <li>Ted Shaw <xiao.xj@#064gmail.com> patch to MiscPEMGenerator for handling new PKCS10CertificationRequests.</li>
- <li>Eleriseth <Eleriseth@#064WPECGLtYbVi8Rl6Y7Vzl2Lvd2EUVW99v3yNV3IWROG8.fms> speed up for SIC/CTR mode. Provider compatibility generalisations for EC operations.</li>
- <li>Kenny Root <kenny@#064the-b.org> patch for issuerAltName, subjectAltName support in X509CertificateObject, BaseBlockCipher.getIV() patch for AEAD.</li>
- <li>Maarten Bodewes <maarten.bodewes@#064gmail.com> initial implementation of HKDF and NIST SP 800-108 MAC based KDF functions.</li>
- <li>Philip Clay <pilf\_b@#064yahoo.com> Initial implementation of J-PAKE.</li>
- <li>Brian Carlstrom <bdc@#064carlstrom.com> compliance patches for some JCA/JCE keystore and cipher classes, miscellaneous code quality improvements, initial provider PBKDF2WithHmacSHA1 SecretKeyFactory.</li>
- <li>Samuel Lid&eacute;n Borell <samuel@#064primekey.se> patch to add DSTU-4145 to DefaultSignatureAlgorithmFinder</li>
- <li>Sergio Demian Lerner <sergiolerner@#064certimix.com> pointing out isInfinity issue in ECDSASigner signature verification.</li>
- <li>Tim Whittington <Tim.Whittington@#064orionhealth.com> patch to remove extra init call in CMac, additional of Memoable interface for Digest classes, initial implementation of GMAC, further correctness tests for IV and reset processing in OCB, CCM, and block cipher reset. Initial implementation of Skein, XSalsa20, ChaCha, reduced round Salsa20, Threefish, and the Poly1305 MAC. Documentation updates. Added OCB support to Noekeon and CAST6 in the provider, exception testing for CTS, optimisations for CCM, provider support for AAD cipher methods, safe CipherInput/OutputStream implementations for use with AAD and subsequent bug fixes, cleanup after IDEA patent expiry, work on JCE SipHash support, optimisations for AESFastEngine, further work on EncodableDigest for SHA-2 digests, contributions to BCrypt/OpenBSDBCrypt, PGP API documentation and code quality work.</li>
- <li>Marcus Lundblad <marcus.lundblad@#064primekey.se> patch for working around JDK jarsigner TSP bug, optional setting of IssuerSerial in TimeStampTokenGenerator, additional extensions enhancement for time stamp token generation.</li>
- <li>Andrey Zhozhin <zhozhin@#064xrm.ru> patch for override of TSP SignerInfo attributes.</li>
- <li>Sergey Tiunov <t5555d@#064gmail.com> initial cut of DVCS classes.</li>
- <li>Damian Kolasa <fatfredy@#064gmail.com> ASN1Sequence patch for class cast issue in X9Curve.</li>

<li>Ash Hughes <ashley.hughes@blueyonder.co.uk> patches for supporting PGPSecretKeyRing/PGPSecretKeys encodings with empty private keys, initial code for PGPSignatureSubpacketVector.getEmbeddedSignatures().</li>

<li>Daniel Hirscher <dev@daniel-hirscher.de> patch to support parsing of explicit EC parameters in PEM files.</li>

<li>Daniele Ricci <daniele.athome@gmail.com> initial implementation of EC keys for OpenPGP and RFC6637 support.</li>

<li>Matti Aarnio <matti.aarnio@methics.fi> tweaks to any build to remove dependence on shell scripts. Initial SM3 digest implementation, some EC related code cleanups, JavaDoc improvements for ASN.1 classes.</li>

<li>Babak Najafi <bnajafi@akamai.com> fixes to OpenPGP NotationData to prevent truncation problems.</li>

<li>Eric Mueller <eric.mueller@sage.de> additional standard algorithm name lookups in JcaPEMKeyConverter.</li>

<li>Mathias Herberts <Mathias.Herberts@gmail.com> fix to inOff usage in RFC3394WrapEngine.</li>

<li>Daniil Ivanov <daniil.ivanov@gmail.com> addition of provider support for GOST HMAC SecretKeyFactory.</li>

<li>Daniele Grasso <daniele.grasso86@gmail.com> contributions to final Key calculation code for SRP6.</li>

<li>Andrey Utkin <cindrhc@gmail.com> patch to reconstruction of ECGOST keys from PrivateKeyInfo objects in provider classes.</li>

<li>Arnis Tartu <arnis@ut.ee> checker for generated key vs OID in JceCMSContentEncryptorBuilder.</li>

<li>AxelVDB <axel-vdb@riseup.net> initial implementation of Shacal2.</li>

<li>Roberto Tyley <> further work on completing gradle build.</li>

<li>Waldemar Dick <wdick@devmue.de> code improvement in x500 ASN.1 package.</li>

<li>Sid Steward <sid.steward@pdfllabs.com> code improvements to ASN1Boolean.</li>

<li>Alex Klyubin <klyubin@google.com> AlgorithmParameters check for EC key agreement.</li>

<li>Jonathan Gillett <gsoc.student@gmail.com> Initial support for block cipher IVs in IESEngine, IES MAC length check bug fix.</li>

<li>Andreas Reiter <andreas.reiter@iaik.tugraz.at> Reported incomplete status of CertificateVerify processing in (D)TLS server, and provided fix.</li>

<li>Kieran Miller <kieran.miller@gmail.com> initial implementation for RFC 5649 key wrap with padding.</li>

<li>Oliver Ehli <ehli@arago.de> Additional support for BSI plain ECDSA in the provider.</li>

<li>Daniel Heldt <Daniel.Heldt@cryptovision.com> Initial support for encodable state message digests</li>

<li>Robert Bushman <bouncycastle@traxel.com> Clean up of DirectKeySignature example.</li>

<li>Maurice Aarts <aarts@riscure.com> updated to KDF generator to follow NIST SP 800-108.</li>

<li>Franziskus Kiefer <https://github.com/franziskuskiefer> initial implementation of Cramer-Shoup.</li>

<li>KB Sriram <mail\_kb@yahoo.com> testing for odd encodings for PGP User Attribute Subpackets.</li>

<li>Marco Schulze <marco@nightlabs.de> Reported verification bug in GenericSigner.</li>

<li>Martin Schaef <https://github.com/martinschaef> contributed a code-cleanup patch.</li>

<li>Lijun Liao <ljun.liao@gmail.com> addition of getSignatureAlgorithmID to BasicOCSPResp.</li>

<li>dstutz <https://github.com/dstutz> added iteration count setters to PKCS#12 PBE mac/key generator builders.</li>

<li>Tobias Wich <tobias.wich@ecsec.de> Provided patch for TLS to work around servers sending Supported Elliptic Curves extension unexpectedly.</li>

<li>Hauke Mehrtens <hauke@hauke-m.de> TLS patch to add ECDHE\_ECDSA CCM ciphersuites from RFC 7251.</li>

<li>Daniel Zimmerman <dmz@galois.com> Further key quality improvements to RSAKeyPairGenerator.</li>

<li>Jens Kapitza <ltj.kapitza@schwarze-allianz.de> Iterable support in OpenPGP API, code cleanup in OpenPGP API.</li>

- <li>Johan Eklund<johan&#064primekey.se> update to RFC 6960 for OCSPObjectIdentifiers.</li>
- <li>nikosn<https://github.com/nikosn> Fix to encoding of EC private keys to ensure encoding matches order length.</li>
- <li>Axel von dem Bruch <axel-vdb&#064riseup.net> Contributions to BCrypt/OpenBSDBCrypt, original version of Blake2bDigest.</li>
- <li>Derek Atkins <derek&#064ihtfp.com> Documentation fixes to X9ObjectIdentifiers.</li>
- <li>Peter Jr Halicky <peto&#064halicky.sk> Correction to notification/error message handling in SignedMailValidator.</li>
- <li>IartiguePierre<https://github.com/IartiguePierre> Fix for counter signature SID in CMSSignedData.</li>
- <li>Thomas Belot<thomas.belot+BC&#064gmail.com> initial CertPathLoopTest for demonstrating stack overflow issue.</li>
- <li>Rich DiCroce<https://github.com/rdicroce> Initial implementation of server-side TLS-SRP support. TLS API extension to support non-blocking usage.</li>
- <li>Bj&ouml;r;n Kautler<https://github.com/Vampire> Refinements to cert path validation (authority key addition, certificate order preservation).</li>
- <li>Dominik Sch&uuml;rmann<https://github.com/dschuermann> method for returning signatures/verifications without user IDs on PGPPublicKey, method for exposing S2K in PGPPrivateKey, constants for GNU protection modes in S2K classes, optional version header for armored output.</li>
- <li>Michael <MSKnete&#064web.de> initial fix for bitStrength issue for OpenPGP EC keys.</li>
- <li>Tobias Wagner <tobias.wagner&#064n-design.de> Fix SecureRandom handling in BcAsymmetricKeyWrapper [#BJA-536].</li>
- <li>Sergio Giro <sgiro&#064google.com> Fixed adding of additional stores from CRL distribution point [#BJA-537]. Fixed missing null check for CRL certificate issuer [#BJA-538], removal of risky zeroisation code in PBE.java, check for salt in PBEKeys that require it.</li>
- <li>bschuette<https://github.com/bschuette> Fixed typo in DefaultSignatureAlgorithmIdentifierFinder, additional methods on CMSSignedDataParser.</li>
- <li>Leonard Dallot<https://github.com/dallotTazTag> Fix to S2K usage of none on changing passwords on keys without passwords originally.</li>
- <li>Jan Willem Janssen <j.w.janssen+bouncycastle&#064lxtreme.nl> Support for DSAParameters in lightweight SubjectPublicKeyInfoFactory, initial content signer verifier for BC lightweight EC.</li>
- <li>Sebastian Oerding <sebastian.oerding@robotron.de> Fixes to toString() in x509.CertificatePolicies.</li>
- <li>Kai Kramer <kai.kramer&#064gmail.com> Code to deal with orphaned chain certificates in the PKCS#12 KeyStore.</li>
- <li>Benoit Charles <benoit.charles&#064opentrust.com> Fix for IES data length check on decryption.</li>
- <li>Niko <nfink95&#064gmail.com> fix to cast issue in getOutputSize() for ECIES.</li>
- <li>akwizgran<https://github.com/akwizgran> Fixed clone of key in Blake2bDigest copy constructor, blake2b reset issue for variant keys.</li>
- <li>Matthias Edelhoff <Matthias.Edelhoff&#064cryptovision.com> BasicConstraintsValidation pathlen fix in PKIX certpath classes.</li>
- <li>Lukasz Deputat <lukasz.deputat&#064gmail.com> Fixed bugs in TlsUtils read methods [#BJA-592].</li>
- <li>Justin Ludwig <https://github.com/justinludwig> Iterator fix for PGPObjectFactory to handle stream packets at start of iterated data.</li>
- <li>Andr&eacute; Berenguel <https://github.com/aberenguel> Fix to include ECNamedCurveSpec in EC AlgorithmParameterSpi.</li>
- <li>Slawomir Jaranowski<https://github.com/slawekjaranowski> Patch to make cipher/hash/signature name methods in PGP internal API public.</li>
- <li>Andrey Vasilyev<https://github.com/andrey-vasilyev> Initial implementation of GOST R 34.11-2012.</li>
- <li>William Glanton <>wglanton77&#064gmail.com> Fixed bug in Poly1305 [#BJA-620].</li>

- <li>jdvorak001<https://github.com/jdvorak001> Speed improvements for ASN.1 ObjectIdentifier cache.</li>
- <li>Joseph Naegele <jnaegele&#064grierforensics.com> Patch for handling multiple certificates in a DANE SMIMEA entry.</li>
- <li>Andrew Bonventre<https://github.com/andybons> NullPointer patch for WNaFUtil.</li>
- <li>The Google Security Team (Project Wycheproof) <https://github.com/google/wycheproof> defect analysis and additional test cases for the provider.</li>
- <li>Gorka Irazoqui <girazoki&#064wpi.edu> from Intel Security Center of Excellence <https://security-center.intel.com/> detection of the issue with AESFastEngine (CVE-2016-1000339), additional suggestions for improvement to hardening of AESEngine.</li>
- <li>Joerg Senekowitsch <joerg.senekowitsch&#064veridos.com> patch to deal with hard coded boolean in EAC ECDSAPublicKey.</li>
- <li>Alexandr Krivoshta <wipe&#064ya.ru> N4 calculation fix to GOFB mode.</li>
- <li>Artem Storozhuk <storajs72&#064gmail.com> N4 calculation fix to GOFB mode.</li>
- <li>Na Yu <na.yu&#064samsung.com> Constructor patches to CMC PKIData.</li>
- <li>Evangelos Karatsiolis <ekaratsiolis&#064mtg.de> Corrected use of explicit tagging in X.509 PolicyConstraints class.</li>
- <li>VivleSoren <https://github.com/VivleSoren> additional constructor for McElieceCCA2PrivateKeyParameters.</li>
- <li>mtausig <https://github.com/mtausig> JavaDoc fix for MCSEncryptedDataGenerator.</li>
- <li>Anders Schack-Mulligen <https://github.com/aschackmull> code cleanups for CMSSignedDataParser, BrokenKDF2BytesGenerator.</li>
- <li>Sebastian Wolfgang Roland <sebastianwolfgang.roland&#064stud.tu-darmstadt.de> Initial XMSS/XMSS-MT implementation.</li>
- <li>didisoft <https://github.com/didisoft> test code for PGP signature removal involving user ids.</li>
- <li>Mike Safonov<https://github.com/MikeSafonov> initial implementation of GOST3410-2012 for light weight provider and JCA</li>
- <li>Artem Storozhuk <storajs72&#064gmail.com> initial implementation of DSTU7564 (digest) and DSTU7624 (cipher) and their associated modes.</li>
- <li>Andreas Glaser <andreas.glaser@gi-de.com> patch to recognise ANSSI curves for PKCS#10 requests.</li>

</ul>  
</body>  
</html>

## 1.157 scalautils 3.0.0

### 1.157.1 Available under license :

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- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/UnquotedString.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/exceptions/NullArgumentException.scala

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- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/DigitString.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/GuessANumber.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/CompileTimeAssertions.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/GuessANumberMacros.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/DigitStringMacro.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/Percent.scala
- \* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/anyvals/DigitChar.scala

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jar/org/scalactic/anyvals/PosZInt.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosDouble.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosZLongMacro.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/NumericEqualityConstraints.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosZIntMacro.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosFloat.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosLongMacro.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosInt.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosDoubleMacro.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/Snapshots.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosLong.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosZDouble.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosZDoubleMacro.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/anyvals/PosZFloat.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
```



jar/org/scalactic/anyvals/PosIntMacro.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-  
jar/org/scalactic/anyvals/PosZLong.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-  
jar/org/scalactic/anyvals/PosFloatMacro.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-  
jar/org/scalactic/anyvals/PosZFloatMacro.scala  
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jar/org/scalactic/BooleanMacro.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/MacroOwnerRepair.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/Requirements.scala

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jar/org/scalactic/Normalization.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/Tolerance.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/TrySugar.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/LowPriorityConversionCheckedConstraint.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/Explicitly.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/Equivalence.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/MapEqualityConstraints.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/OptionSugar.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/exceptions/ValidationFailedException.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/Accumulation.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/TolerantNumerics.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

jar/org/scalactic/AbstractStringUniformity.scala

\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/ComposedNormalizingEquality.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/SeqEqualityConstraints.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Validation.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/ComposedNormalizingEquivalence.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/NormalizingEquivalence.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/package.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Prettifier.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/FutureSugar.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/TripleEqualsSupport.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/EitherSugar.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/StringNormalizations.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/TripleEquals.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/source/Position.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/TimesOnInt.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/DeprecatedPrettyMethods.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Equality.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/CanEqual.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Uniformity.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Chain.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Every.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Catcher.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/LowPriorityTypeCheckedConstraint.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/SetEqualityConstraints.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/DefaultEquality.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Or.scala  
\* /opt/cola/permits/1685982301\_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-

```
jar/org/scalactic/TraversableEqualityConstraints.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/NormalizingEquality.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/NormMethods.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/ConversionCheckedTripleEquals.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/TypeCheckedTripleEquals.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-
jar/org/scalactic/PrettyMethods.scala
* /opt/cola/permits/1685982301_1684950608.4029415/0/scalactic-2-11-3-0-0-sources-jar/org/scalactic/Bool.scala
```

## 1.158 browsermob-proxy-core-module 2.1.5

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```
/**
 * Derives the charset from the Content-Type header in the HttpMessage. If the Content-Type header is not present
 or does not contain
 * a character set, this method returns the ISO-8859-1 character set. See { @link
 BrowserMobHttpUtil#readCharsetInContentTypeHeader(String)}
 * for more details.
 *
 * @param httpMessage HTTP message to extract charset from
 * @return the charset associated with the HTTP message, or the default charset if none is present
 * @throws UnsupportedCharsetException if there is a charset specified in the content-type header, but it is not
 supported
 */
```

Found in path(s):

```
* /opt/cola/permits/1685982277_1684882673.349099/0/browsermob-core-2-1-5-sources-
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## 1.159 apache-commons-lang 2.6

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## 1.160 totvs-gps-rpw 0.0.1

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\* /opt/cola/permits/1685982541\_1684869380.3505192/0/totvs-gps-rpw-0-0-1-tgz/package/dist/polyfills.bundle.js

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CA;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AA  
CA;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa,eAAe,EAAE;AACjB,gBA



BAAgB;AACHb;AACa,sBAAsB,+BAA+B;AACrD;AACa,eAAe,EAAE;AACjB,gBAAgB;AACHb;AACa;AAC A,eAAe,EAAE;AACjB,gBAAgB;AACHb;AACa;AACa;AACa;AACa;AACa,SAAS,OAAO,iEAAU,EAAE;AA C5B;AACa;AACa,mDAAmD;AACnD,SAAS,gCAAgC,OAAO,6DAAM,uBAAuB,IAAI;AACjF,MAAM;AACN; AACa,CAAC;AACD;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa,gBAAgB;AACHb;AA CA;AACa,gBAAgB;AACHb;AACa;AACa;AACa;AACa;AACa;AACa,CAAC;AACD;AACa,IAAI,gEAAS;A ACb;AACa;AACa;AACa;AACa,gBAAgB;AACHb;AACa;AACa,gBAAgB;AACHb;AACa,iBAAiB,eAAe;AA ChC;AACa,CAAC;AACD;AACa,IAAI,gEAAS;AACb;AACa;AACa;AACa;AACa,gBAAgB;AACHb;AACa; AACa,gBAAgB;AACHb;AACa,iBAAiB,gBAAgB;AACjC;AACa,CAAC;AACD;AACa,IAAI,gEAAS;AACb;A ACA;AACa;AACa;AACa,gBAAgB;AACHb;AACa;AACa,gBAAgB;AACHb;AACa,iBAAiB,iBAAiB;AACiC; AACa,CAAC;AACD;AACa,IAAI,gEAAS;AACb;AACa;AACa;AACa;AACa,gBAAgB;AACHb;AACa;AAC A,gBAAgB;AACHb;AACa,iBAAiB,cAAc;AAC/B;AACa,CAAC;AACD;AACa,IAAI,gEAAS;AACb;AACa;AA CA;AACa;AACa,gBAAgB;AACHb;AACa;AACa,gBAAgB;AACHb;AACa,iBAAiB,sBAAsB;AACvC;AACa, CAAC;:AAED;AACa;AACa,cAAc,WAAW;AACzB;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AAC A;AACa,KAAK,UAAU,kEAAW,YAAy,6EAAoB,EAAE;AAC5D,KAAK,UAAU,2EAAoB,yCAAyC;AAC5E,K AAK,UAAU,yEAAgB,yDAaYD;AACxF,KAAK,uDAaUD;AAC5D;AACa;AACa;AACa;AACa;AACa;AACa; AACa;AACa,KAAK,UAAU,gEAAS,6BAA6B;AACrD,KAAK,wEAAwE;AAC7E;AACa;AACa;AACa;AACa, sBAAsB,qFAAqB,CAAC,oEAAy;AACxD;AACa,YAAy;AACZ;AACa;AACa;AACa;AACa;AACa;AACa,Y AAY;AACZ;AACa;AACa,eAAe,mEAAy;AAC3B;AACa;AACa,YAAy;AACZ;AACa;AACa;AACa;AACa; AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa; AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa,eAAe,EAAE;AACjB,gBAAgB;AACHb;AAC A;AACa;AACa;AACa;AACa;AACa,eAAe,EAAE;AACjB,gBAAgB;AACHb;AACa;AACa;AACa;A ACA;AACa,iBAAiB,UAAU,6DAAM,0BAA0B;AAC3D,iBAAiB,sCAAsC,6DAAM,EAAE;AAC/D;AACa;AAC A;AACa;AACa;AACa,SAAS,OAAO,+DAAQ;AACxB;AACa;AACa,yBAAyB,UAAU,mEAAy,sCAAsC;AAC rF,yBAAyB,yEAAyE;AACiG,yBAAyB,yEAAyE;AACiG,yBAAyB,8EAA8E;AACvG,yBAAyB,gEAAgE;AACzF; AACa,yBAAyB,UAAU,uEAAgB,oCAAoC;AACvF,yBAAyB,8DAA8D;AACvF;AACa,wBAAwB,mEAAW;AA CnC;AACa;AACa;AACa;AACa;AACa,8BAA8B,qEAAy,EAAE,wEAAiB;AAC7D,iBAAiB,IAAI;AACrB;AA CA;AACa,gDAAGD;AACHd,SAAS,oCAAoC,OAAO,+DAAQ,EAAE,GAAG,OAAO,+DAAQ,EAAE,IAAI;AACt F,MAAM;AACN;AACa,CAAC;:AAED;AACa;AACa,cAAc,WAAW;AACzB;AACa;AACa;AACa;AACa;AA CA;AACa;AACa;AACa,gEAAgE,EAAE,OAAO;:AAEzE;AACa;AACa,cAAc,WAAW;AACzB;AACa;AACa; AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa,CAAC;AACD;AACa; AACa;AACa;AACa;AACa;AACa,uCAAuC,qEAAc;AACrD;AACa;AACa;AACa;AACa;AACa;AACa;AA CA;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa,wCAAwC,aAAa;AACrD;AACa;AACa;AACa; AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa,wCAAwC,aAAa;AAC rD;AACa,eAAe,EAAE;AACjB,gBAAgB;AACHb;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;A ACA;AACa;AACa;AACa;AACa;AACa,wCAAwC,aAAa;AACrD;AACa,eAAe,EAAE;AACjB,gBAAgB;AAC hB;AACa;AACa,uBAAuB,EAAE;AACzB,uBAAuB,EAAE;AACzB;AACa,uBAAuB,EAAE;AACzB;AACa;AA CA;AACa,uBAAuB,EAAE;AACzB,uBAAuB,EAAE;AACzB;AACa;AACa;AACa;AACa,uBAAuB,EAAE;AA CzB;AACa;AACa;AACa;AACa;AACa,wBAAwB,EAAE;AACiB;AACa,uBAAuB,EAAE;AACzB;AACa;AA CA;AACa;AACa;AACa,CAAC;:AAED;AACa;AACa,cAAc,WAAW;AACzB;AACa;AACa;AACa;AACa;A ACA;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;A ACA;AACa;AACa,WAAW,EAAE;AACb,YAAy;AACZ;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AAC A;AACa,YAAy;AACZ;AACa;AACa;AACa;:AAEA;AACa;AACa,cAAc,WAAW;AACzB;AACa;AACa; AACa;AACa;AACa;AACa;AACa;AACa;AACa,WAAW,EAAE;AACb,YAAy;AACZ;AACa;AACa,mBAA mB,EAAE;AACrB,iBAAiB;AACjB,iBAAiB;AACjB,kBAAkB;AACiB,iBAAiB;AACjB,iBAAiB;AACjB;AACa,k DAakD,uBAAuB,EAAE;AAC3E;AACa;AACa,WAAW,EAAE;AACb,YAAy;AACZ;AACa;AACa,mBAAmB, EAAE;AACrB,YAAy;AACZ,YAAy;AACZ,YAAy;AACZ,YAAy;AACZ,YAAy;AACZ,YAAy;AACZ;AACa,6BAA6B,GAA G,kBAAkB,yBAAyB,EAAE;AAC7E;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa;AACa; AACa;AACa;AACa;AACa;AACa,WAAW,EAAE;AACb,YAAy;AACZ;AACa;AACa,sBAAsB,EAAE;AACx





values that an Observable emits, as well as for when it completes or errors. You can achieve this in two following ways.

The first way is creating an object that implements `{ @link Observer }` interface. It should have methods defined by that interface, but note that it should be just a regular JavaScript object, which you can create yourself in any way you want (ES6 class, classic function constructor, object literal etc.). In particular do not attempt to use any RxJS implementation details to create Observers - you don't need them. Remember also that your object does not have to implement all methods. If you find yourself creating a method that doesn't do anything, you can simply omit it. Note however, that if ``error`` method is not provided, all errors will be left uncaught.

The second way is to give up on Observer object altogether and simply provide callback functions in place of its methods. This means you can provide three functions as arguments to ``subscribe``, where first function is equivalent of a ``next`` method, second of an ``error`` method and third of a ``complete`` method. Just as in case of Observer, if you do not need to listen for something, you can omit a function, preferably by passing ``undefined`` or ``null``, since ``subscribe`` recognizes these functions by where they were placed in function call. When it comes to ``error`` function, just as before, if not provided, errors emitted by an Observable will be thrown.

Whatever style of calling ``subscribe`` you use, in both cases it returns a Subscription object. This object allows you to call ``unsubscribe`` on it, which in turn will stop work that an Observable does and will clean up all resources that an Observable used. Note that cancelling a subscription will not call ``complete`` callback provided to ``subscribe`` function, which is reserved for a regular completion signal that comes from an Observable.

Remember that callbacks provided to ``subscribe`` are not guaranteed to be called asynchronously. It is an Observable itself that decides when these functions will be called. For example `{ @link of }` by default emits all its values synchronously. Always check documentation for how given Observable will behave when subscribed and if its default behavior can be modified with a `{ @link Scheduler }`.

`@example <caption>Subscribe with an Observer</caption>`

```
const
sumObserver = {
 sum: 0,
 next(value) {
 console.log('Adding: ' + value);
 this.sum =
this.sum + value;
 },
 error() { // We actually could just remove this method,
},
 complete() {
 console.log('Sum equals: ' + this.sum);
}
};
Rx.Observable.of(1, 2, 3) // Synchronously emits 1, 2, 3 and then completes.
.subscribe(sumObserver);
// Logs:
// "Adding: 1"
// "Adding: 2"
// "Adding: 3"
// "Sum equals: 6"

```

`@example <caption>Subscribe with functions</caption>`

```
let sum =
0;
Rx.Observable.of(1, 2, 3)
.subscribe(
 function(value) {
 console.log('Adding: '
+ value);
 sum = sum + value;
 },
 undefined,
 function() {
 console.log('Sum
equals: ' + sum);
 }
);
// Logs:
// "Adding: 1"
// "Adding: 2"
//
"Adding: 3"
// "Sum equals: 6"

```

`@example <caption>Cancel a subscription</caption>`

```
const subscription = Rx.Observable.interval(1000).subscribe(
 num => console.log(num),
 undefined,
 () => console.log('completed!') // Will not be called, even
);
// when
cancelling subscription
setTimeout(() => {
 subscription.unsubscribe();
 console.log('unsubscribed!');
}, 2500);
// Logs:
// 0 after 1s
// 1 after 2s
//
"unsubscribed!" after 2.5s

```

`@param {Observer|Function} observerOrNext (optional)` Either an observer with methods to be called, or the first of three possible handlers, which is the handler for each value emitted from the subscribed Observable.

`@param {Function} error (optional)` A handler for a terminal event resulting from an error. If no error handler is provided, the error will be thrown as unhandled.

`@param {Function} complete (optional)` A handler for a terminal event resulting from successful completion.

`@return {ISubscription}` a subscription reference to the registered handlers

`@method subscribe`

```
Observable.prototype.subscribe = function (observerOrNext, error, complete) {
 var operator = this.operator;
 var sink = toSubscriber(observerOrNext, error, complete);
 if (operator) {
 operator.call(sink,
this.source);
 }
 else {
 sink.add(this.source || !sink.syncErrorThrowable ? this._subscribe(sink) :
this._trySubscribe(sink));
 }
 if (sink.syncErrorThrowable) {
 sink.syncErrorThrowable = false;
 if (sink.syncErrorThrown) {
 throw sink.syncErrorValue;
 }
 }
 return sink;
};
Observable.prototype._trySubscribe = function (sink) {
 try {
 return this._subscribe(sink);
 }

```









```

{function(): void} [complete] The `complete` callback of an Observer.
Subscriber(destinationOrNext, error, complete) {
 this._super.call(this);
 this.syncErrorValue = null;
 this.syncErrorThrown = false;
 this.syncErrorThrowable = false;
 this.isStopped = false;
 switch (arguments.length) {
 case 0:
 this.destination = emptyObserver;
 break;
 case 1:
 if (!destinationOrNext) {
 this.destination = emptyObserver;
 break;
 }
 if (typeof destinationOrNext === 'object') {
 // HACK(benlesh): To resolve an issue where Node users may have multiple // copies of rxjs in their node_modules directory.
 if (isTrustedSubscriber(destinationOrNext)) {
 var trustedSubscriber = destinationOrNext[rxSubscriberSymbol];
 this.syncErrorThrowable = trustedSubscriber.syncErrorThrowable;
 this.destination = trustedSubscriber;
 trustedSubscriber.add(this);
 } else {
 this.syncErrorThrowable = true;
 this.destination = new SafeSubscriber(this, destinationOrNext);
 }
 }
 default:
 this.syncErrorThrowable = true;
 this.destination = new SafeSubscriber(this, destinationOrNext, error, complete);
 break;
 }
}
Subscriber.prototype[rxSubscriberSymbol] = function () { return this; };
/**
 * A static factory for a Subscriber, given a (potentially partial) definition of an Observer.
 * @param {function(x: ?T): void} [next] The `next` callback of an Observer.
 * @param {function(e: ?any): void} [error] The `error` callback of an Observer.
 * @param {function(): void} [complete] The `complete` callback of an Observer.
 * @return {Subscriber<T>} A Subscriber wrapping the (partially defined) Observer represented by the given arguments.
 */
Subscriber.create = function (next, error, complete) {
 var subscriber = new Subscriber(next, error, complete);
 subscriber.syncErrorThrowable = false;
 return subscriber;
};
/**
 * The {@link Observer} callback to receive notifications of type `next` from the Observable, with a value. The Observable may call this method 0 or more times.
 * @param {T} [value] The `next` value.
 * @return {void}
 */
Subscriber.prototype.next = function (value) {
 if (!this.isStopped) {
 this._next(value);
 }
};
/**
 * The {@link Observer} callback to receive notifications of type `error` from the Observable, with an attached {@link Error}. Notifies the Observer that the Observable has experienced an error condition.
 * @param {any} [err] The `error` exception.
 * @return {void}
 */
Subscriber.prototype.error = function (err) {
 if (!this.isStopped) {
 this.isStopped = true;
 this._error(err);
 }
};
/**
 * The {@link Observer} callback to receive a valueless notification of type `complete` from the Observable. Notifies the Observer that the Observable has finished sending push-based notifications.
 * @return {void}
 */
Subscriber.prototype.complete = function () {
 if (!this.isStopped) {
 this.isStopped = true;
 this._complete();
 }
};
Subscriber.prototype.unsubscribe = function () {
 if (this.closed) {
 return;
 }
 this.isStopped = true;
 _super.prototype.unsubscribe.call(this);
};
Subscriber.prototype._next = function (value) {
 this.destination.next(value);
};
Subscriber.prototype._error = function (err) {
 this.destination.error(err);
 this.unsubscribe();
};
Subscriber.prototype._complete = function () {
 this.destination.complete();
 this.unsubscribe();
};
/** @deprecated internal use only */
Subscriber.prototype._unsubscribeAndRecycle = function () {
 var _a = this, _parent = _a._parent, _parents = _a._parents;
 this._parent = null;
 this._parents = null;
 this.unsubscribe();
 this.closed = false;
 this.isStopped = false;
 this._parent = _parent;
 this._parents = _parents;
 return this;
};
return Subscriber;
})(Subscription);
/**
 * We need this JSDoc comment for affecting ESDoc.
 * @ignore
 * @extends {Ignored}
 */
var SafeSubscriber = /*@__PURE__*/ /*@__PURE__*/ function (_super) {
 __extends(SafeSubscriber, _super);
 function SafeSubscriber(_parentSubscriber, observerOrNext, error, complete) {
 _super.call(this);
 this._parentSubscriber = _parentSubscriber;
 var next;
 var context = this;
 if (isFunction(observerOrNext)) {
 next = observerOrNext;
 } else if (observerOrNext) {
 next = observerOrNext.next;
 error = observerOrNext.error;
 complete = observerOrNext.complete;
 if (observerOrNext !== emptyObserver) {
 context = Object.create(observerOrNext);
 if (isFunction(context.unsubscribe)) {
 this.unsubscribe = context.unsubscribe;
 }
 }
 }
 }
}

```



```

Subscription was created.\n * @return {void}\n */\n Subscription.prototype.unsubscribe = function () {\n
var hasErrors = false;\n var errors;\n if (this.closed) {\n return;\n }\n var _a = this, _parent =\n _a._parent, _parents = _a._parents, _unsubscribe = _a._unsubscribe, _subscriptions = _a._subscriptions;\n
this.closed = true;\n this._parent = null;\n this._parents = null;\n // null out _subscriptions first so any\n
child subscriptions that attempt\n // to remove themselves from this subscription will noop\n
this._subscriptions = null;\n var index = -1;\n var len = _parents ? _parents.length : 0;\n // if\n
this._parent is null, then so is this._parents, and we\n // don't have to remove ourselves from any parent\n
subscriptions.\n while (_parent) {\n _parent.remove(this);\n // if this._parents is null or index >=\n
len,\n // then _parent is set to null, and the loop exits\n _parent = ++index < len && _parents[index] ||\n
null;\n }\n if (isFunction(_unsubscribe)) {\n var trial = tryCatch(_unsubscribe).call(this);\n if\n
(trial === errorObject) {\n hasErrors = true;\n errors = errors || (errorObject.e instanceof\n
UnsubscriptionError ?\n flattenUnsubscriptionErrors(errorObject.e.errors) : [errorObject.e]);\n
 }\n }\n if (isArray(_subscriptions)) {\n index = -1;\n len = _subscriptions.length;\n
while (++index < len) {\n var sub = _subscriptions[index];\n if (isObject(sub)) {\n var\n
trial = tryCatch(sub.unsubscribe).call(sub);\n if (trial === errorObject) {\n hasErrors =\n
true;\n errors = errors || [];\n var err = errorObject.e;\n if (err instanceof\n
UnsubscriptionError) {\n errors = errors.concat(flattenUnsubscriptionErrors(err.errors));\n
 }\n else {\n errors.push(err);\n }\n }\n
 }\n }\n }\n if (hasErrors) {\n throw new UnsubscriptionError(errors);\n }\n};\n /**\n
 * Adds a tear down to be called during the unsubscribe() of this\n
 * Subscription.\n
 * * If the tear down\n
being added is a subscription that is already\n
 * unsubscribed, is the same reference `add` is being called on, or\n
is\n
 * `Subscription.EMPTY`, it will not be added.\n
 * * If this subscription is already in an `closed` state,\n
the passed\n
 * tear down logic will be executed immediately.\n
 * * @param {TeardownLogic} teardown\n
The additional logic to execute on\n
 * teardown.\n
 * @return {Subscription} Returns the Subscription used or\n
created to be\n
 * added to the inner subscriptions list. This Subscription can be used with\n
 * `remove()` to\n
remove the passed teardown logic from the inner subscriptions\n
 * list.\n
 */\n Subscription.prototype.add =\n
function (teardown) {\n if (!teardown || (teardown === Subscription.EMPTY)) {\n return\n
Subscription.EMPTY;\n }\n if (teardown === this) {\n return this;\n }\n var subscription =\n
teardown;\n switch (typeof teardown) {\n case 'function':\n subscription = new\n
Subscription(teardown);\n case 'object':\n if (subscription.closed || typeof subscription.unsubscribe\n
!== 'function') {\n return subscription;\n }\n else if (this.closed) {\n return\n
subscription.unsubscribe();\n }\n else if (typeof\n
subscription._addParent !== 'function' /* quack quack */) {\n var tmp = subscription;\n subscription = new\n
Subscription();\n subscription._subscriptions = [tmp];\n }\n break;\n default:\n throw new Error('unrecognized teardown ' + teardown + ' added to\n
Subscription.);\n }\n var subscriptions = this._subscriptions || (this._subscriptions = []);\n
subscriptions.push(subscription);\n subscription._addParent(this);\n return subscription;\n};\n /**\n
 * Removes a Subscription from the internal list of subscriptions that will\n
 * unsubscribe during the unsubscribe\n
process of this Subscription.\n
 * @param {Subscription} subscription The subscription to remove.\n
 * @return\n
{void}\n
 */\n Subscription.prototype.remove = function (subscription) {\n var subscriptions =\n
this._subscriptions;\n if (subscriptions) {\n var subscriptionIndex =\n
subscriptions.indexOf(subscription);\n if (subscriptionIndex !== -1) {\n subscriptions.splice(subscriptionIndex, 1);\n
 }\n }\n};\n Subscription.prototype._addParent =\n
function (parent) {\n var _a = this, _parent = _a._parent, _parents = _a._parents;\n if (!_parent || _parent\n
=== parent) {\n // If we don't have a parent, or the new parent is the same as the\n // current parent,\n
then set this._parent to the new parent.\n this._parent = parent;\n }\n else if (!_parents) {\n //\n
If there's already one parent, but not multiple, allocate an Array to\n // store the rest of the parent\n
Subscriptions.\n this._parents = [parent];\n }\n else if (_parents.indexOf(parent) === -1) {\n //

```















well-known `Array.prototype.filter` method, this operator takes values from the source Observable, passes them through a predicate function and only emits those values that yielded `true`.

**Example** Emit only click events whose target was a DIV element

```
var clicks = Rx.Observable.fromEvent(document, 'click');
var clicksOnDivs = clicks.filter(ev => ev.target.tagName === 'DIV');
clicksOnDivs.subscribe(x => console.log(x));
```

**See also**

- `distinct`
- `distinctUntilChanged`
- `distinctUntilKeyChanged`
- `ignoreElements`
- `partition`
- `skip`

**Signature**

```
function filter(predicate: (value: T, index: number): boolean): Observable<T>
```

**Parameters**

- `predicate`: A function that evaluates each value emitted by the source Observable. If it returns `true`, the value is emitted, if `false` the value is not passed to the output Observable. The `index` parameter is the number `i` for the `i`-th source emission that has happened since the subscription, starting from the number `0`.

**Return** An Observable of values from the source that were allowed by the `predicate` function.

**Method** `filter`

**Owner** Observable

```
export function filter(predicate, thisArg) {
 return higherOrderFilter(predicate, thisArg)(this);
}
```

**sourceMappingURL**=filter.js.map

---

**WEBPACK FOOTER**

```
C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node_modules/rxjs/_esm5/operator/filter.js
module id = ../../../../rxjs/_esm5/operator/filter.js
module chunks = vendor", /** PURE_IMPORTS_START .._operators_map PURE_IMPORTS_END */
import { map as higherOrderMap } from './operators/map';
/** Applies a given project function to each value emitted by the source Observable, and emits the resulting values as an Observable.
Like [Array.prototype.map()](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/map), it passes each source value through a transformation function to get corresponding output values.

Similar to the well known Array.prototype.map function, this operator applies a projection to each value and emits that projection in the output Observable.
Example Map every click to the clientX position of that click
var clicks = Rx.Observable.fromEvent(document, 'click');
var positions = clicks.map(ev => ev.clientX);
positions.subscribe(x => console.log(x));
See also

- mapTo
- pluck

Parameters

- project: The function to apply to each value emitted by the source Observable. The index parameter is the number i for the i-th emission that has happened since the subscription, starting from the number 0.
- thisArg: An optional argument to define what this is in the project function.

Return An Observable that emits the values from the source Observable transformed by the given project function.
Method map
Owner Observable
export function map(project, thisArg) {
 return higherOrderMap(project, thisArg)(this);
}
```

**sourceMappingURL**=map.js.map

---

**WEBPACK FOOTER**

```
C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node_modules/rxjs/_esm5/operator/map.js
module id = ../../../../rxjs/_esm5/operator/map.js
module chunks = vendor", /** PURE_IMPORTS_START .._operators_share PURE_IMPORTS_END */
import { share as higherOrder } from './operators/share';
/** Returns a new Observable that multicasts (shares) the original Observable. As long as there is at least one Subscriber this Observable will be subscribed and emitting data. When all subscribers have unsubscribed it will unsubscribe from the source Observable. Because the Observable is multicasting it makes the stream hot.
This behaves similarly to .publish().refCount(), with a behavior difference when the source observable emits complete. .publish().refCount() will not resubscribe to the original source, however .share() will resubscribe to the original source.
Observable.of("test").publish().refCount() will not re-emit "test" on new subscriptions, Observable.of("test").share() will re-emit "test" to new subscriptions.

Return An Observable that upon connection causes the source Observable to emit items to its Observers.
Method share
Owner Observable
export function share() {
 return higherOrder()(this);
}
```

**sourceMappingURL**=share.js.map

---

**WEBPACK FOOTER**

```
C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node_modules/rxjs/_esm5/operator/share.js
module id = ../../../../rxjs/_esm5/operator/share.js
module chunks = vendor", /** PURE_IMPORTS_START .._operators_take
```





through a `predicate` function and only emits those values that yielded `true`.

**Example** Emit only click events whose target was a DIV element

```

var clicks = Rx.Observable.fromEvent(document, 'click');
var clicksOnDivs = clicks.filter(ev => ev.target.tagName === 'DIV');
clicksOnDivs.subscribe(x => console.log(x));

```

**See** `@link distinct`, `@link distinctUntilChanged`, `@link distinctUntilKeyChanged`, `@link ignoreElements`, `@link partition`, `@link skip`

**param** `predicate` A function that evaluates each value emitted by the source Observable. If it returns `true`, the value is emitted, if `false` the value is not passed to the output Observable. The `index` parameter is the number `i` for the `i`-th source emission that has happened since the subscription, starting from the number `0`.

**param** `[thisArg]` An optional argument to determine the value of `this` in the `predicate` function.

**return** `{Observable}` An Observable of values from the source that were allowed by the `predicate` function.

```

function filter(predicate, thisArg) {
 return function filterOperatorFunction(source) {
 return source.lift(new FilterOperator(predicate, thisArg));
 };
}
var FilterOperator = /*@__PURE__*/
/*@__PURE__*/ function () {
 function FilterOperator(predicate, thisArg) {
 this.predicate = predicate;
 this.thisArg = thisArg;
 }
 FilterOperator.prototype.call = function (subscriber, source) {
 return source.subscribe(new FilterSubscriber(subscriber, this.predicate, this.thisArg));
 };
 return FilterOperator;
}();

```

**We need this JSDoc comment for affecting ESDoc**

```

/**
 * @ignore
 * @extends {Ignored}
 */
var FilterSubscriber = /*@__PURE__*/ (/*@__PURE__*/ function (_super) {
 __extends(FilterSubscriber, _super);
 function FilterSubscriber(destination, predicate, thisArg) {
 _super.call(this, destination);
 this.predicate = predicate;
 this.thisArg = thisArg;
 this.count = 0;
 }
 // the try catch block below is left specifically for // optimization and perf reasons. a tryCatcher is not necessary here.
 FilterSubscriber.prototype._next = function (value) {
 var result;
 try {
 result = this.predicate.call(this.thisArg, value, this.count++);
 } catch (err) {
 this.destination.error(err);
 return;
 }
 if (result) {
 this.destination.next(value);
 }
 };
 return FilterSubscriber;
})(Subscriber);

```

**sourceMappingURL=filter.js.map**

**WEBPACK FOOTER**

`C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node_modules/rxjs/_esm5/operators/filter.js`

`module id = ../.././rxjs/_esm5/operators/filter.js`

`module chunks = vendor",`

```

/** PURE_IMPORTS_START ..Subscriber PURE_IMPORTS_END */
var __extends = (this && this.__extends) || function (d, b) {
 for (var p in b)
 if (b.hasOwnProperty(p))
 d[p] = b[p];
 function __() { this.constructor = d; }
 d.prototype = b === null ? Object.create(b) : (__.prototype = b.prototype, new __());
};
import { Subscriber } from './Subscriber';

```

**Applies a given `project` function to each value emitted by the source Observable, and emits the resulting values as an Observable.**

**Like `Array.prototype.map()`** ([https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global\\_Objects/Array/map](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/map)), it passes each source value through a transformation function to get corresponding output values.

**Similar to the well known `Array.prototype.map` function, this operator applies a projection to each value and emits that projection in the output Observable.**

**Example** Map every click to the clientX position of that click

```

var clicks = Rx.Observable.fromEvent(document, 'click');
var positions = clicks.map(ev => ev.clientX);
positions.subscribe(x => console.log(x));

```

**param** `project` The function to apply to each `value` emitted by the source Observable. The `index` parameter is the number `i` for the `i`-th emission that has happened since the subscription, starting from the number `0`.

**param** `[thisArg]` An optional argument to define what `this` is in the `project` function.

**return** `{Observable<R>}` An Observable that emits the values from the source Observable transformed by the given `project` function.

```

function map(project, thisArg) {
 return function mapOperation(source) {
 if (typeof project !== 'function')
 throw new TypeError('argument is not a function. Are you looking for `mapTo`?');
 return source.lift(new MapOperator(project, thisArg));
 };
}
export var MapOperator = /*@__PURE__*/ (/*@__PURE__*/ function () {
 function

```





this merger.

```

@example <caption>Map and flatten each letter to an Observable ticking every 1
second</caption>
var letters = Rx.Observable.of('a', 'b', 'c');
var result = letters.mergeMap(x =>
Rx.Observable.interval(1000).map(i => x+i));
result.subscribe(x => console.log(x));
// Results in the
following:
a0
b0
c0
a1
b1
c1
// continues to list a,b,c with respective
ascending integers
@see { @link concatMap}
@see { @link exhaustMap}
@see { @link merge}
@see { @link mergeAll}
@see { @link mergeMapTo}
@see { @link mergeScan}
@see { @link
switchMap}
@param {function(value: T, ?index: number): ObservableInput} project A function
that,
when applied to an item emitted by the source Observable, returns an
Observable.
@param
{function(outerValue: T, innerValue: I, outerIndex: number, innerIndex: number): any} [resultSelector] A
function to produce the value on the output Observable based on the values
and the indices of the source (outer
emission and the inner Observable
emission. The arguments passed to this function are:
- `outerValue`: the
value that came from the source
- `innerValue`: the value that came from the projected Observable
-
`outerIndex`: the "index" of the value that came from the source
- `innerIndex`: the "index" of the value from
the projected Observable
@param {number} [concurrent=Number.POSITIVE_INFINITY] Maximum number
of input
Observables being subscribed to concurrently.
@return {Observable} An Observable that emits the
result of applying the
projection function (and the optional `resultSelector`) to each item emitted
by the
source Observable and merging the results of the Observables obtained
from this transformation.
@method
mergeMap
@owner Observable
^/next export function mergeMap(project, resultSelector, concurrent) {
 if
 (concurrent === void 0) {
 concurrent = Number.POSITIVE_INFINITY;
 }
 return function
 mergeMapOperatorFunction(source) {
 if (typeof resultSelector === 'number') {
 concurrent =
 resultSelector;
 resultSelector = null;
 }
 return source.lift(new MergeMapOperator(project,
 resultSelector, concurrent));
 };
}
^/next export var MergeMapOperator = /*@__PURE__*/ (/*@__PURE__*/
function () {
 function MergeMapOperator(project, resultSelector, concurrent) {
 if (concurrent === void 0) {
 concurrent = Number.POSITIVE_INFINITY;
 }
 this.project = project;
 this.resultSelector = resultSelector;
 this.concurrent = concurrent;
 }
 MergeMapOperator.prototype.call
 = function (observer, source) {
 return source.subscribe(new MergeMapSubscriber(observer, this.project,
 this.resultSelector, this.concurrent));
 };
 return MergeMapOperator;
})();
^/next We need this JSDoc
comment for affecting ESDoc.
@ignore
@extends {Ignored}
^/next export var MergeMapSubscriber =
/*@__PURE__*/ (/*@__PURE__*/ function (_super) {
 __extends(MergeMapSubscriber, _super);
 function
 MergeMapSubscriber(destination, project, resultSelector, concurrent) {
 if (concurrent === void 0) {
 concurrent = Number.POSITIVE_INFINITY;
 }
 _super.call(this, destination);
 this.project =
 project;
 this.resultSelector = resultSelector;
 this.concurrent = concurrent;
 this.hasCompleted =
 false;
 this.buffer = [];
 this.active = 0;
 this.index = 0;
 }
 MergeMapSubscriber.prototype._next = function (value) {
 if (this.active < this.concurrent) {
 this._tryNext(value);
 }
 else {
 this.buffer.push(value);
 }
 };
 MergeMapSubscriber.prototype._tryNext = function (value) {
 var result;
 var index = this.index++;
 try {
 result = this.project(value, index);
 }
 catch (err) {
 this.destination.error(err);
 return;
 }
 this.active++;
 this._innerSub(result, value, index);
 };
 MergeMapSubscriber.prototype._innerSub = function (ish, value, index) {
 this.add(subscribeToResult(this,
 ish, value, index));
 };
 MergeMapSubscriber.prototype._complete = function () {
 this.hasCompleted =
 true;
 if (this.active === 0 && this.buffer.length === 0) {
 this.destination.complete();
 }
 };
 MergeMapSubscriber.prototype.notifyNext = function (outerValue, innerValue, outerIndex,
 innerIndex) {
 if (this.resultSelector) {
 this._notifyResultSelector(outerValue, innerValue, outerIndex,
 innerIndex);
 }
 else {
 this.destination.next(innerValue);
 }
 };
 MergeMapSubscriber.prototype._notifyResultSelector = function (outerValue, innerValue, outerIndex,
 innerIndex) {
 var result;
 try {
 result = this.resultSelector(outerValue, innerValue, outerIndex,
 innerIndex);
 }
 catch (err) {
 this.destination.error(err);
 return;
 }
 this.destination.next(result);
 };
 MergeMapSubscriber.prototype.notifyComplete = function (innerSub) {

```













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```

global Reflect, Promise */
var extendStatics = function(d, b) {
 extendStatics = Object.setPrototypeOf
 || ({__proto__: []} instanceof Array && function(d, b) { d.__proto__ = b; })
 || function(d, b) { for (var p in b) if (b.hasOwnProperty(p)) d[p] = b[p]; };
 return extendStatics(d, b);
};
export function __extends(d, b) {
 extendStatics(d, b);
 function __() { this.constructor = d; }
 d.prototype = b === null ? Object.create(b) : (__proto__ = b.prototype, new __());
}
export var __assign = function() {
 __assign = Object.assign || function __assign(t) {
 for (var s, i = 1, n = arguments.length; i < n; i++) {
 s = arguments[i];
 for (var p in s) if (Object.prototype.hasOwnProperty.call(s, p)) t[p] = s[p];
 }
 return t;
 };
 return __assign.apply(this, arguments);
}
export function __rest(s, e) {
 var t = {};
 for (var p in s) if (Object.prototype.hasOwnProperty.call(s, p) && e.indexOf(p) < 0) t[p] = s[p];
 if (s != null && typeof Object.getOwnPropertySymbols === "function")
 for (var i = 0, p = Object.getOwnPropertySymbols(s); i < p.length; i++) if (e.indexOf(p[i]) < 0) t[p[i]] = s[p[i]];
 return t;
}
export function __decorate(decorators, target, key, desc) {
 var c = arguments.length, r = c < 3 ? target : desc === null ? desc = Object.getOwnPropertyDescriptor(target, key) : desc, d;
 if (typeof Reflect === "object" && typeof Reflect.decorate === "function") r = Reflect.decorate(decorators, target, key, desc);
 else for (var i = decorators.length - 1; i >= 0; i--) if (d = decorators[i]) r = (c < 3 ? d(r) : c > 3 ? d(target, key, r) : d(target, key)) || r;
 return c > 3 && r && Object.defineProperty(target, key, r), r;
}
export function __param(paramIndex, decorator) {
 return function (target, key) { decorator(target, key, paramIndex); };
}
export function __metadata(metadataKey, metadataValue) {
 if (typeof Reflect === "object" && typeof Reflect.metadata === "function") return Reflect.metadata(metadataKey, metadataValue);
}
export function __awaiter(thisArg, _arguments, P, generator) {
 return new (P || (P = Promise))(function (resolve, reject) {
 function fulfilled(value) { try { step(generator.next(value)); } catch (e) { reject(e); } }
 function rejected(value) { try { step(generator["throw"](value)); } catch (e) { reject(e); } }
 function step(result) { result.done ? resolve(result.value) : new P(function (resolve) { resolve(result.value); }).then(fulfilled, rejected); }
 step((generator = generator.apply(thisArg, _arguments || [])).next());
 });
}
export function __generator(thisArg, body) {
 var _ = { label: 0, sent: function() { if (t[0] & 1) throw t[1]; return t[1]; }, trys: [], ops: [] }, f, y, t, g;
 return g = { next: verb(0), "throw": verb(1), "return": verb(2) }, typeof Symbol === "function" && (g[Symbol.iterator] = function() { return this; }), g;
 function verb(n) { return function (v) { return step([n, v]); }; }
 function step(op) {
 if (f) throw new TypeError("Generator is already executing.");
 while (1) try {
 if (f = 1, y && (t = op[0] & 2 ? y["return"] : op[0] ? y["throw"] || ((t = y["return"]) && t.call(y, 0) : y.next) && !(t = t.call(y, op[1])).done) return t;
 if (y = 0, t) op = [op[0] & 2, t.value];
 switch (op[0]) {
 case 0: case 1: t = op; break;
 case 4:
 _label++; return { value: op[1], done: false };
 case 5: _label++; y = op[1]; op = [0]; continue;
 case 7: op = _ops.pop(); _trys.pop(); continue;
 default:
 if (!(t = _trys, t = t.length > 0 && t[t.length - 1]) && (op[0] === 6 || op[0] === 2)) { _ = 0; continue; }
 if (op[0] === 3 && (t || (op[1] > t[0] && op[1] < t[3]))) { _label = op[1]; break; }
 if (op[0] === 6 && _label < t[1]) { _label = t[1]; t = op; break; }
 if (t && _label < t[2]) { _label = t[2]; _ops.push(op); break; }
 if (t[2]) _ops.pop();
 _trys.pop(); continue;
 }
 op = body.call(thisArg, _);
 } catch (e) { op = [6, e]; y = 0; } finally { f = t = 0; }
 if (op[0] & 5) throw op[1]; return { value: op[0] ? op[1] : void 0, done: true };
 }
 }
}
export function __exportStar(m, exports) {
 for (var p in m) if (!exports.hasOwnProperty(p)) exports[p] = m[p];
}
export function __values(o) {
 var m = typeof Symbol === "function" && o[Symbol.iterator], i = 0;
 if (m) return m.call(o);
 return {
 next: function () {
 if (o && i >= o.length) o = void 0;
 return { value: o && o[i++], done: !o };
 }
 };
}
export function __read(o, n) {
 var m = typeof Symbol === "function" && o[Symbol.iterator];
 if (!m) return o;
 var i = m.call(o), r, ar = [], e;
 try {
 while ((n === void 0 || n-- > 0) && !(r = i.next()).done) ar.push(r.value);
 } catch (error) { e = { error: error }; } finally {

```



```

 try {
 if (r && !r.done && (m = i["return"])) m.call(i);
 } finally { if (e) throw e.error; }
 return ar;
 }
 export function __spread() {
 for (var ar = [], i = 0; i < arguments.length; i++)
 ar = ar.concat(__read(arguments[i]));
 return ar;
 }
 export function __await(v) {
 return this instanceof __await ? (this.v = v, this) : new __await(v);
 }
 export function __asyncGenerator(thisArg, _arguments, generator) {
 if (!Symbol.asyncIterator) throw new TypeError("Symbol.asyncIterator is not defined.");
 var g = generator.apply(thisArg, _arguments || []), i, q = [];
 return i = {
 verb("next"), verb("throw"), verb("return"),
 i[Symbol.asyncIterator] = function () { return this; },
 i: function verb(n) {
 if (g[n] i[n] = function (v) {
 return new Promise(function (a, b) {
 q.push([n, v, a, b]) > 1 || resume(n, v);
 });
 }
 }
 };
 function resume(n, v) {
 try { step(g[n](v)); } catch (e) { settle(q[0][3], e); }
 }
 function step(r) {
 r.value instanceof __await ? Promise.resolve(r.value.v).then(
 fulfill, reject) : settle(q[0][2], r);
 }
 function fulfill(value) { resume("next", value); }
 function reject(value) { resume("throw", value); }
 function settle(f, v) {
 if (f(v), q.shift(), q.length) resume(q[0][0], q[0][1]);
 }
 }
 export function __asyncDelegator(o) {
 var i, p;
 return i = {
 verb("next"), verb("throw"), function (e) { throw e; },
 verb("return"),
 i[Symbol.iterator] = function () { return this; },
 i: function verb(n, f) {
 i[n] = o[n] ? function (v) {
 return (p = !p) ? { value: __await(o[n](v)), done: n === "return" } : f ? f(v) : v;
 } : f;
 }
 };
 }
 export function __asyncValues(o) {
 if (!Symbol.asyncIterator) throw new TypeError("Symbol.asyncIterator is not defined.");
 var m = o[Symbol.asyncIterator], i;
 return m ? m.call(o) : (o = typeof __values === "function" ? __values(o) : o[Symbol.iterator](), i = {
 verb("next"), verb("throw"), verb("return"),
 i[Symbol.asyncIterator] = function () { return this; },
 i: function verb(n) {
 i[n] = o[n] && function (v) {
 return new Promise(function (resolve, reject) {
 v = o[n](v), settle(resolve, reject, v.done, v.value);
 });
 };
 }
 };
 function settle(resolve, reject, d, v) {
 Promise.resolve(v).then(function(v) { resolve({ value: v, done: d }); }, reject);
 }
 }
 export function __makeTemplateObject(cooked, raw) {
 if (Object.defineProperty) {
 Object.defineProperty(cooked, "raw", { value: raw });
 } else {
 cooked.raw = raw;
 }
 return cooked;
 }
 export function __importStar(mod) {
 if (mod && mod.__esModule) return mod;
 var result = {};
 if (mod != null) for (var k in mod) if (Object.hasOwnProperty.call(mod, k)) result[k] = mod[k];
 result.default = mod;
 return result;
 }
 export function __importDefault(mod) {
 return (mod && mod.__esModule) ? mod : { default: mod };
 }
 // WEBPACK FOOTER
 // C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node_modules/tslib/tslib.es6.js
 // module id = ../..../tslib/tslib.es6.js
 // module chunks = vendor", "var g;
 // This works in non-strict mode
 (function() {
 return this;
 })();
 // This works if eval is allowed (see CSP)
 tg = g || Function("return this")() || (1,eval)("this");
 // This works if the window reference is available
 if (typeof window === "object") tg = window;
 // g can still be undefined, but nothing to do about it
 // We return undefined, instead of nothing here, so it's easier to handle this case.
 if (!global) {
 ...
 }
 module.exports = g;
 // WEBPACK FOOTER
 // (webpack)/buildin/global.js
 // module id = ../..../webpack/buildin/global.js
 // module chunks = polyfills vendor", "/*
 * @license Angular v5.2.1
 * (c) 2010-2018 Google, Inc. https://angular.io
 * License: MIT
 *
 * @import { Attribute, ChangeDetectorRef, ComponentFactoryResolver, Directive, ElementRef, EventEmitter, Host, Inject, Injectable, InjectionToken, Input, IterableDiffers, KeyValueDiffers, LOCALE_ID, NgModule, NgModuleRef, Optional, Pipe, Renderer2, TemplateRef, Version, ViewContainerRef, WrappedValue, isDevMode, isListLikeIterable, isObservable, isPromise, stringify } from '@angular/core';
 *
 * @import { __assign, __extends } from 'tslib';
 *
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 *
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
 *
 * This class should not be used directly by an application developer. Instead, use
 *
 * @link Location
 *
 * `PlatformLocation` encapsulates all calls to DOM apis, which allows the Router to be platform
 * agnostic.
 * This means that we can have different implementation of `PlatformLocation` for the different
 * platforms that angular supports. For example,
 *
 * @angular/platform-browser` provides an
 * implementation specific to the browser environment, while
 *
 * @angular/platform-webworker` provides
 * one suitable for use with web workers.
 *
 * The

```

`PlatformLocation` class is used directly by all implementations of `{@link LocationStrategy}` when they need to interact with the DOM apis like `pushState`, `popState`, etc... `{@link LocationStrategy}` in turn is used by the `{@link Location}` service which is used directly by the `{@link Router}` in order to navigate between routes. Since all interactions between `{@link Router}` / `{@link Location}` / `{@link LocationStrategy}` and DOM apis flow through the `PlatformLocation` class they are all platform independent.

```

@abstract
class PlatformLocation = (function () {
 function PlatformLocation() {}
 return PlatformLocation;
})();

```

`@whatItDoes` indicates when a location is initialized

```

@experimental
class LOCATION_INITIALIZED = new InjectionToken('Location Initialized');

```

A serializable version of the event from `onPopState` or `onHashChange`

```

@experimental
@record
@experimental
@record
@fileoverview added by tsickle
@suppress {checkTypes}

```

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`LocationStrategy` is responsible for representing and reading route state from the browser's URL. Angular provides two strategies: `{@link HashLocationStrategy}` and `{@link PathLocationStrategy}`. This is used under the hood of the `{@link Location}` service. Applications should use the `{@link Router}` or `{@link Location}` services to interact with application route state. For instance, `{@link HashLocationStrategy}` produces URLs like `http://example.com#/foo`, and `{@link PathLocationStrategy}` produces `http://example.com/foo` as an equivalent URL. See these two classes for more.

```

@stable
@abstract
class LocationStrategy = (function () {
 function LocationStrategy() {}
 return LocationStrategy;
})();

```

The `APP_BASE_HREF` token represents the base href to be used with the `{@link PathLocationStrategy}`. If you're using `{@link PathLocationStrategy}`, you must provide a provider to a string representing the URL prefix that should be preserved when generating and recognizing URLs.

```

Example
typescript
import {Component, NgModule} from '@angular/core';
import {APP_BASE_HREF} from '@angular/common';
@NgModule({
 providers: [{provide: APP_BASE_HREF, useValue: '/my/app'}]
})
class AppModule {}

```

`@stable` `APP_BASE_HREF = new InjectionToken('appBaseHref');`

```

@fileoverview added by tsickle
@suppress {checkTypes}
checked by tsc

```

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`Location` is a service that applications can use to interact with a browser's URL. Depending on which `{@link LocationStrategy}` is used, `Location` will either persist to the URL's path or the URL's hash segment. Note: it's better to use `{@link Router#navigate}` service to trigger route changes. Use `Location` only if you need to interact with or create normalized URLs outside of routing. `Location` is responsible for normalizing the URL against the application's base href. A normalized URL is absolute from the URL host, includes the application's base href, and has no trailing slash: `~/my/app/user/123` is normalized to `~/my/app/user/123`

```

Example
@example
common/location/ts/path_location_component.ts
region=LocationComponent
@stable
class Location = (function () {
 function Location(platformStrategy) {
 var _this = this;
 @internal
 this._subject = new EventEmitter();
 this._platformStrategy = platformStrategy;
 var @type {?} browserBaseHref = this._platformStrategy.getBaseHref();
 this._baseHref = Location.stripTrailingSlash(_stripIndexHtml(browserBaseHref));
 this._platformStrategy.onPopState(function (ev) {
 _this._subject.emit({url: _this.path(true), pop: true, type: ev.type});
 });
 }
 /**
 * Returns the normalized URL path.
 * // TODO: vsavkin.
 * Remove the boolean flag and always include hash once the deprecated router is removed.
 * Returns the normalized URL path.
 * @param {=} includeHash
 * @return {?}
 * Location.prototype.path = (function (includeHash) {
 * if (includeHash === void 0) { includeHash = false; }
 * }

```

```

return this.normalize(this._platformStrategy.path(includeHash));\n };\n /**\n * Normalizes the given path and compares to the current normalized path.\n *\n * Normalizes the given path and compares to the current normalized path.\n * @param {?} path\n * @param {?=} query\n * @return {?}\n */\n Location.prototype.isCurrentPathEqualTo = /**\n * Normalizes the given path and compares to the current normalized path.\n * @param {?} path\n * @param {?=} query\n * @return {?}\n */\n function (path, query) {\n if (query === void 0) { query = ""; }\n return this.path() == this.normalize(path + Location.normalizeQueryParams(query));\n };\n /**\n * Given a string representing a URL, returns the normalized URL path without leading or\n * trailing slashes.\n *\n * Given a string representing a URL, returns the normalized URL path without leading or\n * trailing slashes.\n * @param {?} url\n * @return {?}\n */\n Location.prototype.normalize = /**\n * Given a string representing a URL, returns the normalized URL path without leading or\n * trailing slashes.\n * @param {?} url\n * @return {?}\n */\n function (url) {\n return Location.stripTrailingSlash(_stripBaseHref(this._baseHref, _stripIndexHtml(url)));\n };\n /**\n * Given a string representing a URL, returns the platform-specific external URL path.\n * If the given URL doesn't begin with a leading slash ('/'), this method adds one\n * before normalizing. This method will also add a hash if `HashLocationStrategy` is\n * used, or the `APP_BASE_HREF` if the `PathLocationStrategy` is in use.\n *\n * Given a string representing a URL, returns the platform-specific external URL path.\n * If the given URL doesn't begin with a leading slash ('/'), this method adds one\n * before normalizing. This method will also add a hash if `HashLocationStrategy` is\n * used, or the `APP_BASE_HREF` if the `PathLocationStrategy` is in use.\n * @param {?} url\n * @return {?}\n */\n Location.prototype.prepareExternalUrl = /**\n * Given a string representing a URL, returns the platform-specific external URL path.\n * If the given URL doesn't begin with a leading slash ('/'), this method adds one\n * before normalizing. This method will also add a hash if `HashLocationStrategy` is\n * used, or the `APP_BASE_HREF` if the `PathLocationStrategy` is in use.\n * @param {?} url\n * @return {?}\n */\n function (url) {\n if (url && url[0] !== '/') {\n url = '/' + url;\n }\n return this._platformStrategy.prepareExternalUrl(url);\n };\n // TODO: rename this method to pushState\n /**\n * Changes the browsers URL to the normalized version of the given URL, and pushes a\n * new item onto the platform's history.\n *\n * Changes the browsers URL to the normalized version of the given URL, and pushes a\n * new item onto the platform's history.\n * @param {?} path\n * @param {?=} query\n * @return {?}\n */\n Location.prototype.go = /**\n * Changes the browsers URL to the normalized version of the given URL, and pushes a\n * new item onto the platform's history.\n * @param {?} path\n * @param {?=} query\n * @return {?}\n */\n function (path, query) {\n if (query === void 0) { query = ""; }\n this._platformStrategy.pushState(null, "", path, query);\n };\n /**\n * Changes the browsers URL to the normalized version of the given URL, and replaces\n * the top item on the platform's history stack.\n *\n * Changes the browsers URL to the normalized version of the given URL, and replaces\n * the top item on the platform's history stack.\n * @param {?} path\n * @param {?=} query\n * @return {?}\n */\n Location.prototype.replaceState = /**\n * Changes the browsers URL to the normalized version of the given URL, and replaces\n * the top item on the platform's history stack.\n * @param {?} path\n * @param {?=} query\n * @return {?}\n */\n function (path, query) {\n if (query === void 0) { query = ""; }\n this._platformStrategy.replaceState(null, "", path, query);\n };\n /**\n * Navigates forward in the platform's history.\n *\n * Navigates forward in the platform's history.\n * @return {?}\n */\n Location.prototype.forward = /**\n * Navigates forward in the platform's history.\n * @return {?}\n */\n function () { this._platformStrategy.forward(); };\n /**\n * Navigates back in the platform's history.\n *\n * Navigates back in the platform's history.\n * @return {?}\n */\n Location.prototype.back = /**\n * Navigates back in the platform's history.\n * @return {?}\n */\n function () { this._platformStrategy.back(); };\n /**\n * Subscribe to the platform's `popState` events.\n *\n * Subscribe to the platform's `popState` events.\n * @param {?} onNext\n * @param {?=} onThrow\n * @param {?=} onReturn\n * @return {?}\n */\n Location.prototype.subscribe = /**\n * Subscribe to the platform's `popState` events.\n * @param {?} onNext\n * @param {?=} onThrow\n * @param {?=} onReturn\n * @return {?}\n */

```

```

function (onNext, onThrow, onReturn) {
 return this._subject.subscribe({
 next: onNext,
 error: onThrow,
 complete: onReturn
 });
}

/**
 * Given a string of url parameters, prepend with '?' if needed, otherwise
 * return parameters as is.
 * @param {string} params
 * @return {string}
 */
Location.normalizeQueryParams = function (params) {
 return params && params[0] !== '?' ? '?' + params : params;
}

/**
 * Given 2 parts of a url, join them
 * with a slash if needed.
 * @param {string} start
 * @param {string} end
 * @return {string}
 */
Location.joinWithSlash = function (start, end) {
 if (start.length === 0) {
 return end;
 }
 if (end.length === 0) {
 return start;
 }
 var slashes = 0;
 if (start.endsWith('/')) {
 slashes++;
 }
 if (end.startsWith('/')) {
 slashes++;
 }
 if (slashes === 2) {
 return start + end.substring(1);
 }
 if (slashes === 1) {
 return start + end;
 }
 return start + '/' + end;
}

/**
 * If url has a trailing slash, remove it, otherwise return url as is.
 * This method looks for the first occurrence of either #, ?, or the end of the
 * line as ^ characters after any of these should not be replaced.
 * @param {string} url
 * @return {string}
 */
Location.stripTrailingSlash = function (url) {
 var match = url.match(/#\/?$/);
 var pathEndIdx = match && match.index || url.length;
 var droppedSlashIdx = pathEndIdx - (url[pathEndIdx - 1] === '/' ? 1 : 0);
 return url.slice(0, droppedSlashIdx) + url.slice(pathEndIdx);
}

Location.decorators = [
 { type: Injectable },
];

/** @nocollapse */
Location.ctorParameters = function () {
 return [
 { type: LocationStrategy },
];
};

return Location;
})();

/**
 * @param {string} baseHref
 * @param {string} url
 * @return {string}
 */
function _stripBaseHref(baseHref, url) {
 return baseHref && url.startsWith(baseHref) ? url.substring(baseHref.length) : url;
}

/**
 * @param {string} url
 * @return {string}
 */
function _stripIndexHtml(url) {
 return url.replace(/\/index.html$/, "");
}

/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked
 * by tsc
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is
 * governed by an MIT-style license that can be
 * found in the LICENSE file at
 * https://angular.io/license
 *
 * @whatItDoes Use URL hash for storing application location data.
 * @description
 * `HashLocationStrategy` is a {@link LocationStrategy} used to configure the
 * {@link Location} service to represent its state in the [hash fragment](https://en.wikipedia.org/wiki/Uniform_Resource_Locator#Syntax)
 * of the browser's URL.
 * For instance, if you call `location.go('/foo')`, the browser's URL will become
 * `example.com#/foo`.
 *
 * ### Example
 *
 * ```
 * @example common/location/ts/hash_location_component.ts
 * region='LocationComponent'
 *
 * @stable
 * @nvar HashLocationStrategy = /** @class */ (function (_super)
 * __extends(HashLocationStrategy, _super);
 * function HashLocationStrategy(_platformLocation, _baseHref)
 * {
 * var _this = _super.call(this) || this;
 * _this._platformLocation = _platformLocation;
 * _this._baseHref = "";
 * if (_baseHref !== null) {
 * _this._baseHref = _baseHref;
 * }
 * return _this;
 * }
 * /**
 * * @param {string} fn
 * * @return {string}
 * */
 * HashLocationStrategy.prototype.onPopState = /**
 * * @param {string} fn
 * * @return {string}
 * */
 * function (fn) {
 * this._platformLocation.onPopState(fn);
 * this._platformLocation.onHashChange(fn);
 * };
 * /**
 * *
 * * @return {string}
 * */
 * HashLocationStrategy.prototype.getBaseHref = /**
 * * @return {string}
 * */
 * function ()
 * {
 * return this._baseHref;
 * };
 * /**
 * * @param {boolean} includeHash
 * * @return {string}
 * */
 * HashLocationStrategy.prototype.path = /**
 * * @param {boolean} includeHash
 * * @return {string}
 * */
 * function (includeHash) {
 * if (includeHash === void 0) {
 * includeHash = false;
 * }
 * // the hash value is always
 * prefixed with a '#'
 * // and if it is empty then it will stay empty
 * var path = this._platformLocation.hash;
 * if (path === null)
 * path = '#';
 * return path.length > 0 ?
 * path.substring(1) : path;
 * };
 * /**
 * * @param {string} internal
 * * @return {string}
 * */
 * HashLocationStrategy.prototype.prepareExternalUrl = /**
 * * @param {string} internal
 * * @return {string}
 * */

```

```

function (internal) {\n var /** @type {?} */ url = Location.joinWithSlash(this._baseHref, internal);\n return\n url.length > 0 ? ('#' + url) : url;\n };\n /**\n * @param {?} state\n * @param {?} title\n * @param {?} path\n * @param {?} queryParams\n * @return {?}\n */\n HashLocationStrategy.prototype.pushState =\n /**\n * @param {?} state\n * @param {?} title\n * @param {?} path\n * @param {?} queryParams\n * @return {?}\n */\n function (state, title, path, queryParams) {\n var /** @type {?} */ url =\n this.prepareExternalUrl(path + Location.normalizeQueryParams(queryParams));\n if (url.length === 0) {\n url = this._platformLocation.pathname;\n }\n this._platformLocation.pushState(state, title, url);\n };\n /**\n * @param {?} state\n * @param {?} title\n * @param {?} path\n * @param {?} queryParams\n * @return {?}\n */\n HashLocationStrategy.prototype.replaceState = /**\n * @param {?} state\n * @param\n * {?} title\n * @param {?} path\n * @param {?} queryParams\n * @return {?}\n */\n function (state, title,\n path, queryParams) {\n var /** @type {?} */ url = this.prepareExternalUrl(path +\n Location.normalizeQueryParams(queryParams));\n if (url.length === 0) {\n url =\n this._platformLocation.pathname;\n }\n this._platformLocation.replaceState(state, title, url);\n };\n /**\n * @return {?}\n */\n HashLocationStrategy.prototype.forward = /**\n * @return {?}\n */\n function ()\n { this._platformLocation.forward(); };\n /**\n * @return {?}\n */\n HashLocationStrategy.prototype.back =\n /**\n * @return {?}\n */\n function () { this._platformLocation.back(); };\n\n HashLocationStrategy.decorators = [\n { type: Injectable },\n];\n /** @nocollapse */\n\n HashLocationStrategy.ctorParameters = function () { return [\n { type: PlatformLocation, },\n { type:\n undefined, decorators: [{ type: Optional }, { type: Inject, args: [APP_BASE_HREF,] },] },\n]; };\n return\n HashLocationStrategy;\n})(LocationStrategy);\n\n/**\n * @fileoverview added by tsickle\n * @suppress\n {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of\n this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n https://angular.io/license\n */\n\n * @description\n * `PathLocationStrategy` is a {@link LocationStrategy} used to configure the\n * {@link\n Location} service to represent its state in the\n * [path](https://en.wikipedia.org/wiki/Uniform_Resource_Locator#Syntax) of the\n * browser's URL.\n * If you're\n using `PathLocationStrategy`, you must provide a {@link APP_BASE_HREF}\n * or add a base element to the\n document. This URL prefix that will be preserved\n * when generating and recognizing URLs.\n * For instance,\n if you provide an `APP_BASE_HREF` of `/my/app` and call\n * `location.go('/foo')`, the browser's URL will\n become\n * `example.com/my/app/foo`.\n * Similarly, if you add `</base>` to the document and\n call\n * `location.go('/foo')`, the browser's URL will become\n * `example.com/my/app/foo`.\n * ### Example\n *\n * @example common/location/ts/path_location_component.ts region='LocationComponent'\n */\n\n * @stable\n */\nvar PathLocationStrategy = /** @class */ (function (_super) {\n __extends(PathLocationStrategy,\n _super);\n function PathLocationStrategy(_platformLocation, href) {\n var _this = _super.call(this) || this;\n _this._platformLocation = _platformLocation;\n if (href === null) {\n href =\n _this._platformLocation.getBaseHrefFromDOM();\n }\n if (href === null) {\n throw new Error("No\n base href set. Please provide a value for the APP_BASE_HREF token or add a base element to the document.");\n }\n _this._baseHref = href;\n return _this;\n };\n /**\n * @param {?} fn\n * @return {?}\n */\n PathLocationStrategy.prototype.onPopState = /**\n * @param {?} fn\n * @return {?}\n */\n function (fn)\n {\n this._platformLocation.onPopState(fn);\n this._platformLocation.onHashChange(fn);\n };\n /**\n * @return {?}\n */\n PathLocationStrategy.prototype.getBaseHref = /**\n * @return {?}\n */\n function\n () { return this._baseHref; };\n /**\n * @param {?} internal\n * @return {?}\n */\n PathLocationStrategy.prototype.prepareExternalUrl = /**\n * @param {?} internal\n * @return {?}\n */\n function (internal) {\n return Location.joinWithSlash(this._baseHref, internal);\n };\n /**\n * @param\n * {?} includeHash\n * @return {?}\n */\n PathLocationStrategy.prototype.path = /**\n * @param {?}\n * includeHash\n * @return {?}\n */\n function (includeHash) {\n if (includeHash === void 0) {\n includeHash = false;\n }\n var /** @type {?} */ pathname = this._platformLocation.pathname +\n Location.normalizeQueryParams(this._platformLocation.search);\n var /** @type {?} */ hash =

```



```

'Wednesday', 'Thursday', 'Friday', 'Saturday'],\n ['Su', 'Mo', 'Tu', 'We', 'Th', 'Fr', 'Sa']\n],\n ,\n [\n ['J', 'F', 'M', 'A', 'M', 'J', 'J', 'A', 'S', 'O', 'N', 'D'],\n ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', 'Dec'],\n [\n 'January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September',\n 'October', 'November', 'December'\n]\n],\n ,\n [['B', 'A'], ['BC', 'AD'], ['Before Christ', 'Anno Domini']], 0,
[6, 0],\n ['M/d/yy', 'MMM d, y', 'MMMM d, y', 'EEEE, MMMM d, y'],\n ['h:mm a', 'h:mm:ss a', 'h:mm:ss a z', 'h:mm:ss a zzzz'],\n [\n '{1}', '{0}',\n ,\n '{1}' \\at\\ '{0}',\n],\n [',', ' ', '!', '%', '+', '-', 'E', 'x', '%o', '', 'NaN', ':'],\n ['#',##0.###', '#,##0%', '¤#,##0.00', '#E0', '$', 'US Dollar', converter\n];\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n/**\n * @experimental i18n support is experimental.\n */\n\nvar LOCALE_DATA = {};\n\n/**\n * Register global data to be used internally by Angular. See the\n * {@linkDocs guide/i18n#i18n-pipes "I18n guide"} to know how to import additional locale data.\n *\n * @experimental i18n support is experimental.\n *\n * @param {?} data\n * @param {?} localeId\n * @param {?} extraData\n * @return {?} \n\nfunction registerLocaleData(data, localeId, extraData) {\n if (typeof localeId !== 'string') {\n extraData = localeId;\n localeId = data[0 /* LocaleId */];\n }\n localeId = localeId.toLowerCase().replace(/_/g, '-');\n LOCALE_DATA[localeId] = data;\n if (extraData) {\n LOCALE_DATA[localeId][18 /* ExtraData */] = extraData;\n }\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n/**\n * @enum {number} */\n\nvar NumberFormatStyle = {\n Decimal: 0,\n Percent: 1,\n Currency: 2,\n Scientific: 3,\n};\n\nNumberFormatStyle[NumberFormatStyle.Decimal] = "Decimal";\nNumberFormatStyle[NumberFormatStyle.Percent] = "Percent";\nNumberFormatStyle[NumberFormatStyle.Currency] = "Currency";\nNumberFormatStyle[NumberFormatStyle.Scientific] = "Scientific";\n\n/**\n * @enum {number} */\n\nvar Plural = {\n Zero: 0,\n One: 1,\n Two: 2,\n Few: 3,\n Many: 4,\n Other: 5,\n};\n\nPlural[Plural.Zero] = "Zero";\nPlural[Plural.One] = "One";\nPlural[Plural.Two] = "Two";\nPlural[Plural.Few] = "Few";\nPlural[Plural.Many] = "Many";\nPlural[Plural.Other] = "Other";\n\n/**\n * @enum {number} */\n\nvar FormStyle = {\n Format: 0,\n Standalone: 1,\n};\n\nFormStyle[FormStyle.Format] = "Format";\nFormStyle[FormStyle.Standalone] = "Standalone";\n\n/**\n * @enum {number} */\n\nvar TranslationWidth = {\n Narrow: 0,\n Abbreviated: 1,\n Wide: 2,\n Short: 3,\n};\n\nTranslationWidth[TranslationWidth.Narrow] = "Narrow";\nTranslationWidth[TranslationWidth.Abbreviated] = "Abbreviated";\nTranslationWidth[TranslationWidth.Wide] = "Wide";\nTranslationWidth[TranslationWidth.Short] = "Short";\n\n/**\n * @enum {number} */\n\nvar FormatWidth = {\n Short: 0,\n Medium: 1,\n Long: 2,\n Full: 3,\n};\n\nFormatWidth[FormatWidth.Short] = "Short";\nFormatWidth[FormatWidth.Medium] = "Medium";\nFormatWidth[FormatWidth.Long] = "Long";\nFormatWidth[FormatWidth.Full] = "Full";\n\n/**\n * @enum {number} */\n\nvar NumberSymbol = {\n Decimal: 0,\n Group: 1,\n List: 2,\n PercentSign: 3,\n PlusSign: 4,\n MinusSign: 5,\n Exponential: 6,\n SuperscriptingExponent: 7,\n PerMille: 8,\n Infinity: 9,\n NaN: 10,\n TimeSeparator: 11,\n CurrencyDecimal: 12,\n CurrencyGroup: 13,\n};\n\nNumberSymbol[NumberSymbol.Decimal] = "Decimal";\nNumberSymbol[NumberSymbol.Group] = "Group";\nNumberSymbol[NumberSymbol.List] = "List";\nNumberSymbol[NumberSymbol.PercentSign] = "PercentSign";\nNumberSymbol[NumberSymbol.PlusSign] = "PlusSign";\nNumberSymbol[NumberSymbol.MinusSign] = "MinusSign";\nNumberSymbol[NumberSymbol.Exponential] = "Exponential";\nNumberSymbol[NumberSymbol.SuperscriptingExponent] = "SuperscriptingExponent";\nNumberSymbol[NumberSymbol.PerMille] = "PerMille";\nNumberSymbol[NumberSymbol.Infinity] = "Infinity";\nNumberSymbol[NumberSymbol.NaN] = "NaN";\nNumberSymbol[NumberSymbol.TimeSeparator] =

```

```

\"TimeSeparator\";\nNumberSymbol[NumberSymbol.CurrencyDecimal] =
\"CurrencyDecimal\";\nNumberSymbol[NumberSymbol.CurrencyGroup] = \"CurrencyGroup\";\n/** @enum
{number} */\nvar WeekDay = {\n Sunday: 0,\n Monday: 1,\n Tuesday: 2,\n Wednesday: 3,\n Thursday:
4,\n Friday: 5,\n Saturday: 6,\n};\nWeekDay[WeekDay.Sunday] = \"Sunday\";\nWeekDay[WeekDay.Monday]
= \"Monday\";\nWeekDay[WeekDay.Tuesday] = \"Tuesday\";\nWeekDay[WeekDay.Wednesday] =
\"Wednesday\";\nWeekDay[WeekDay.Thursday] = \"Thursday\";\nWeekDay[WeekDay.Friday] =
\"Friday\";\nWeekDay[WeekDay.Saturday] = \"Saturday\";\n/**\n * The locale id for the chosen locale (e.g `en-
GB`).\n * \n * \\@experimental i18n support is experimental.\n * @param {?} locale\n * @return {?} */\nfunction
getLocaleId(locale) {\n return findLocaleData(locale)[0 /* LocaleId */];\n}\n/**\n * Periods of the day (e.g. `[AM,
PM]` for en-US).\n * \n * \\@experimental i18n support is experimental.\n * @param {?} locale\n * @param {?}
formStyle\n * @param {?} width\n * @return {?} */\nfunction getLocaleDayPeriods(locale, formStyle, width) {\n
 var /** @type {?} */ data = findLocaleData(locale);\n var /** @type {?} */ amPmData = /** @type {?} */
([data[1 /* DayPeriodsFormat */], data[2 /* DayPeriodsStandalone */]]);\n var /** @type {?} */ amPm =
getLastDefinedValue(amPmData, formStyle);\n return getLastDefinedValue(amPm, width);\n}\n/**\n * Days of
the week for the Gregorian calendar (e.g. `[Sunday, Monday, ... Saturday]` for en-US).\n * \n * \\@experimental i18n
support is experimental.\n * @param {?} locale\n * @param {?} formStyle\n * @param {?} width\n * @return
{?} */\nfunction getLocaleDayNames(locale, formStyle, width) {\n var /** @type {?} */ data =
findLocaleData(locale);\n var /** @type {?} */ daysData = /** @type {?} */ ([data[3 /* DaysFormat */], data[4 /*
DaysStandalone */]]);\n var /** @type {?} */ days = getLastDefinedValue(daysData, formStyle);\n return
getLastDefinedValue(days, width);\n}\n/**\n * Months of the year for the Gregorian calendar (e.g. `[January,
February, ...]` for en-US).\n * \n * \\@experimental i18n support is experimental.\n * @param {?} locale\n *
@param {?} formStyle\n * @param {?} width\n * @return {?} */\nfunction getLocaleMonthNames(locale,
formStyle, width) {\n var /** @type {?} */ data = findLocaleData(locale);\n var /** @type {?} */ monthsData =
/** @type {?} */ ([data[5 /* MonthsFormat */], data[6 /* MonthsStandalone */]]);\n var /** @type {?} */ months
= getLastDefinedValue(monthsData, formStyle);\n return getLastDefinedValue(months, width);\n}\n/**\n * Eras
for the Gregorian calendar (e.g. AD/BC).\n * \n * \\@experimental i18n support is experimental.\n * @param {?}
locale\n * @param {?} width\n * @return {?} */\nfunction getLocaleEraNames(locale, width) {\n var /**
@type {?} */ data = findLocaleData(locale);\n var /** @type {?} */ erasData = /** @type {?} */ (data[7 /* Eras
*/]);\n return getLastDefinedValue(erasData, width);\n}\n/**\n * First day of the week for this locale, based on
english days (Sunday = 0, Monday = 1, ...).\n * For example in french the value would be 1 because the first day of
the week is Monday.\n * \n * \\@experimental i18n support is experimental.\n * @param {?} locale\n * @return
{?} */\nfunction getLocaleFirstDayOfWeek(locale) {\n var /** @type {?} */ data = findLocaleData(locale);\n
return data[8 /* FirstDayOfWeek */];\n}\n/**\n * Range of days in the week that represent the week-end for this
locale, based on english days\n * (Sunday = 0, Monday = 1, ...).\n * For example in english the value would be [6,0]
for Saturday to Sunday.\n * \n * \\@experimental i18n support is experimental.\n * @param {?} locale\n * @return
{?} */\nfunction getLocaleWeekEndRange(locale) {\n var /** @type {?} */ data = findLocaleData(locale);\n
return data[9 /* WeekendRange */];\n}\n/**\n * Date format that depends on the locale.\n * \n * There are four basic
date formats:\n * - `full` should contain long-weekday (EEEE), year (y), long-month (MMMM), day (d).\n * \n * For
example, English uses `EEEE, MMMM d, y`, corresponding to a date like\n * `\"Tuesday, September 14,
1999\"`.\n * \n * - `long` should contain year, long-month, day.\n * \n * For example, `MMMM d, y`, corresponding
to a date like\n * `\"September 14, 1999\"`.\n * \n * - `medium` should contain year, abbreviated-month (MMM), day.\n
* \n * For example, `MMM d, y`, corresponding to a date like\n * `\"Sep 14, 1999\"`.\n * \n * For languages that do not use
abbreviated months, use the numeric month (MM/M). For example,\n * `y/MM/dd`, corresponding to a date like\n *
`\"1999/09/14\"`.\n * \n * - `short` should contain year, numeric-month (MM/M), and day.\n * \n * For example,
`M/d/yy`, corresponding to a date like\n * `\"9/14/99\"`.\n * \n * \\@experimental i18n support is experimental.\n
* @param {?} locale\n * @param {?} width\n * @return {?} */\nfunction getLocaleDateFormat(locale, width) {\n
var /** @type {?} */ data = findLocaleData(locale);\n return data[10 /* DateFormat */][width];\n}\n/**\n * Time
format that depends on the locale.\n * \n * The standard formats include four basic time formats:\n * - `full` should

```







```

LOCALE_DATA[normalizedLocale];\n if (match) {\n return match;\n }\n // let's try to find a parent
locale\n var /** @type {?} */ parentLocale = normalizedLocale.split('-')[0];\n match =
LOCALE_DATA[parentLocale];\n if (match) {\n return match;\n }\n if (parentLocale === 'en') {\n
return localeEn;\n }\n throw new Error("\Missing locale data for the locale \\\\" + locale + \\\\".");\n}\n/**\n *
Return the currency symbol for a given currency code, or the code if no symbol available\n * (e.g.: format narrow =
$, format wide = US$, code = USD)\n * \\\n * @experimental i18n support is experimental.\n * @param {?} code\n
* @param {?} format\n * @return {?}\n *\nfunction getCurrencySymbol(code, format) {\n var /** @type {?} */
currency = CURRENCIES[code] || [];\n var /** @type {?} */ symbolNarrow = currency[1];\n if (format ===
'narrow' && typeof symbolNarrow === 'string') {\n return symbolNarrow;\n }\n return currency[0] ||
code;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n *\n *
@license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n *\n * @deprecated from
v5\n *\nvar DEPRECATED_PLURAL_FN = new InjectionToken('UseV4Plurals');\n/**\n * \\\n * @experimental\n *
@abstract\n *\nvar NgLocalization = /** @class */ (function () {\n function NgLocalization() {\n }\n return
NgLocalization;\n})();\n/**\n * Returns the plural category for a given value.\n * - "="=value" when the case
exists,\n * - the plural category otherwise\n * @param {?} value\n * @param {?} cases\n * @param {?}
ngLocalization\n * @param {?=} locale\n * @return {?}\n *\nfunction getPluralCategory(value, cases,
ngLocalization, locale) {\n var /** @type {?} */ key = "=" + value;\n if (cases.indexOf(key) > -1) {\n
return key;\n }\n key = ngLocalization.getPluralCategory(value, locale);\n if (cases.indexOf(key) > -1) {\n
return key;\n }\n if (cases.indexOf('other') > -1) {\n return 'other';\n }\n throw new Error("\No plural
message found for value \\\\" + value + \\\\".");\n}\n/**\n * Returns the plural case based on the locale\n *\n *
\\\n * @experimental\n *\nvar NgLocaleLocalization = /** @class */ (function (_super) {\n
__extends(NgLocaleLocalization, _super);\n function NgLocaleLocalization(locale, /** @deprecated from v5 *\n
deprecatedPluralFn) {\n var _this = _super.call(this) || this;\n _this.locale = locale;\n
_this.deprecatedPluralFn = deprecatedPluralFn;\n return _this;\n }\n /**\n * @param {?} value\n *
@param {?=} locale\n * @return {?}\n *\n NgLocaleLocalization.prototype.getPluralCategory = /**\n *\n
@param {?} value\n * @param {?=} locale\n * @return {?}\n *\n function (value, locale) {\n var /**
@type {?} */ plural = this.deprecatedPluralFn ? this.deprecatedPluralFn(locale || this.locale, value) :\n
getLocalePluralCase(locale || this.locale)(value);\n switch (plural) {\n case Plural.Zero:\n return
'zero';\n case Plural.One:\n return 'one';\n case Plural.Two:\n return 'two';\n
case Plural.Few:\n return 'few';\n case Plural.Many:\n return 'many';\n default:\n
return 'other';\n }\n }\n NgLocaleLocalization.decorators = [\n { type: Injectable },\n];\n /**
@nocollapse *\n NgLocaleLocalization.ctorParameters = function () { return [\n { type: undefined,
decorators: [{ type: Inject, args: [LOCALE_ID,] },\n { type: undefined, decorators: [{ type: Optional }, {
type: Inject, args: [DEPRECATED_PLURAL_FN,] },\n] },\n];\n return
NgLocaleLocalization;\n})(NgLocalization));\n/**\n * Returns the plural case based on the locale\n *\n *
@deprecated from v5 the plural case function is in locale data files common/locales/*.ts\n * \\\n * @experimental\n *
@param {?} locale\n * @param {?} nLike\n * @return {?}\n *\nfunction getPluralCase(locale, nLike) {\n //
TODO(vicb): lazy compute\n if (typeof nLike === 'string') {\n nLike = parseInt(** @type {?} */ (nLike),
10);\n }\n var /** @type {?} */ n = /** @type {?} */ (nLike);\n var /** @type {?} */ nDecimal =
n.toString().replace(/^[^]*\./, "");\n var /** @type {?} */ i = Math.floor(Math.abs(n));\n var /** @type {?} */ v
= nDecimal.length;\n var /** @type {?} */ f = parseInt(nDecimal, 10);\n var /** @type {?} */ t =
parseInt(n.toString().replace(/^[^]*\./, "0+$g/"), 10) || 0;\n var /** @type {?} */ lang = locale.split('-
')[0].toLowerCase();\n switch (lang) {\n case 'af':\n case 'asa':\n case 'az':\n case 'bem':\n case
'bez':\n case 'bg':\n case 'brx':\n case 'ce':\n case 'cgg':\n case 'chr':\n case 'ckb':\n case
'ee':\n case 'el':\n case 'eo':\n case 'es':\n case 'eu':\n case 'fo':\n case 'fur':\n case
'gsw':\n case 'ha':\n case 'haw':\n case 'hu':\n case 'jgo':\n case 'jmc':\n case 'ka':\n case
'kk':\n case 'kkj':\n case 'kl':\n case 'ks':\n case 'ksb':\n case 'ky':\n case 'lb':\n case

```

```

'lg':\n case 'mas':\n case 'mgo':\n case 'ml':\n case 'mn':\n case 'nb':\n case 'nd':\n case
'ne':\n case 'nn':\n case 'nnh':\n case 'nyn':\n case 'om':\n case 'or':\n case 'os':\n case
'ps':\n case 'rm':\n case 'rof':\n case 'rwk':\n case 'saq':\n case 'seh':\n case 'sn':\n case
'so':\n case 'sq':\n case 'ta':\n case 'te':\n case 'teo':\n case 'tk':\n case 'tr':\n case 'ug':\n
 case 'uz':\n case 'vo':\n case 'vun':\n case 'wae':\n case 'xog':\n if (n === 1)\n
return Plural.One;\n return Plural.Other;\n case 'ak':\n case 'ln':\n case 'mg':\n case 'pa':\n
case 'ti':\n if (n === Math.floor(n) && n >= 0 && n <= 1)\n return Plural.One;\n return
Plural.Other;\n case 'am':\n case 'as':\n case 'bn':\n case 'fa':\n case 'gu':\n case 'hi':\n
case 'kn':\n case 'mr':\n case 'zu':\n if (i === 0 || n === 1)\n return Plural.One;\n
return Plural.Other;\n case 'ar':\n if (n === 0)\n return Plural.Zero;\n if (n === 1)\n
 return Plural.One;\n if (n === 2)\n return Plural.Two;\n if (n % 100 === Math.floor(n %
100) && n % 100 >= 3 && n % 100 <= 10)\n return Plural.Few;\n if (n % 100 === Math.floor(n %
100) && n % 100 >= 11 && n % 100 <= 99)\n return Plural.Many;\n return Plural.Other;\n
case 'ast':\n case 'ca':\n case 'de':\n case 'en':\n case 'et':\n case 'fi':\n case 'fy':\n case
'gl':\n case 'it':\n case 'nl':\n case 'sv':\n case 'sw':\n case 'ur':\n case 'yi':\n if (i === 1
&& v === 0)\n return Plural.One;\n return Plural.Other;\n case 'be':\n if (n % 10 === 1
&& !(n % 100 === 11))\n return Plural.One;\n if (n % 10 === Math.floor(n % 10) && n % 10 >= 2
&& n % 10 <= 4 && !(n % 100 >= 12 && n % 100 <= 14))\n return Plural.Few;\n if (n
% 10 === 0 || n % 10 === Math.floor(n % 10) && n % 10 >= 5 && n % 10 <= 9 || n
% 100 ===
Math.floor(n % 100) && n % 100 >= 11 && n % 100 <= 14)\n return Plural.Many;\n return
Plural.Other;\n case 'br':\n if (n % 10 === 1 && !(n % 100 === 11 || n % 100 === 71 || n % 100 ===
91))\n return Plural.One;\n if (n % 10 === 2 && !(n % 100 === 12 || n % 100 === 72 || n % 100
=== 92))\n return Plural.Two;\n if (n % 10 === Math.floor(n % 10) && (n % 10 >= 3 && n % 10
<= 4 || n % 10 === 9) && !(n % 100 >= 10 && n % 100 <= 19 || n % 100 >= 70 && n % 100 <= 79 || n
% 100 >= 90 && n % 100 <= 99))\n return Plural.Few;\n if (!(n === 0) && n % 1e6
=== 0)\n return Plural.Many;\n return Plural.Other;\n case 'bs':\n case 'hr':\n case 'sr':\n
if (v === 0 && i % 10 === 1 && !(i % 100 === 11) || f % 10 === 1 && !(f % 100 === 11))\n return
Plural.One;\n if (v === 0 && i % 10 === Math.floor(i % 10) && i % 10 >= 2 && i % 10 <= 4 && n
!(i % 100 >= 12 && i % 100 <= 14) || f % 10 === Math.floor(f % 10) && f % 10 >= 2 && f % 10 <= 4
&& n
!(f % 100 >= 12 && f % 100 <= 14))\n return Plural.Few;\n return Plural.Other;\n
 case 'cs':\n case 'sk':\n if (i === 1 && v === 0)\n return Plural.One;\n if (i ===
Math.floor(i) && i >= 2 && i <= 4 && v === 0)\n return Plural.Few;\n if (!(v === 0))\n
return Plural.Many;\n return Plural.Other;\n case 'cy':\n if (n === 0)\n return
Plural.Zero;\n if (n === 1)\n return Plural.One;\n if (n === 2)\n return Plural.Two;\n
 if (n === 3)\n return Plural.Few;\n if (n === 6)\n return Plural.Many;\n return
Plural.Other;\n case 'da':\n if (n === 1 || !(t === 0) && (i === 0 || i === 1))\n return
Plural.One;\n return Plural.Other;\n case 'dsb':\n case 'hsb':\n if (v === 0 && i % 100 === 1 ||
f % 100 === 1)\n return Plural.One;\n if (v === 0 && i % 100 === 2 || f % 100 === 2)\n
return Plural.Two;\n if (v === 0 && i % 100 === Math.floor(i % 100) && i % 100 >= 3 && i % 100 <= 4
|| n
f % 100 === Math.floor(f % 100) && f % 100 >= 3 && f % 100 <= 4)\n return Plural.Few;\n
 return Plural.Other;\n case 'ff':\n case 'fr':\n case 'hy':\n case 'kab':\n if (i === 0 || i ===
1)\n return Plural.One;\n return Plural.Other;\n case 'fil':\n if (v === 0 && (i === 1 || i
=== 2 || i === 3) || n
v === 0 && !(i % 10 === 4 || i % 10 === 6 || i % 10 === 9) || n
!(v === 0)
&& !(f % 10 === 4 || f % 10 === 6 || f % 10 === 9))\n return Plural.One;\n return Plural.Other;\n
 case 'ga':\n if (n === 1)\n return Plural.One;\n if (n === 2)\n return Plural.Two;\n
 if (n === Math.floor(n) && n >= 3 && n <= 6)\n return Plural.Few;\n if (n === Math.floor(n)
&& n >= 7 && n <= 10)\n return Plural.Many;\n return Plural.Other;\n case 'gd':\n if (n
=== 1 || n === 11)\n return Plural.One;\n if (n === 2 || n === 12)\n return Plural.Two;\n

```



```

@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n **\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n *\n **\n * @param {?} cookieStr\n * @param {?} name\n *
@return {?}\n *\n function parseCookieValue(cookieStr, name) {\n name = encodeURIComponent(name);\n for (var _i = 0, _a = cookieStr.split(';'); _i < _a.length; _i++) {\n var cookie = _a[_i];\n var /** @type {?} */
eqIndex = cookie.indexOf('=');\n var _b = eqIndex === -1 ? [cookie, ''] : [cookie.slice(0, eqIndex),
cookie.slice(eqIndex + 1)], cookieName = _b[0], cookieValue = _b[1];\n if (cookieName.trim() === name) {\n
return decodeURIComponent(cookieValue);\n }\n }\n return null;\n }\n\n **\n * @fileoverview added
by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n **\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n *\n **\n * @@ngModule CommonModule\n *\n **\n * @@whatItDoes
Adds and removes CSS classes on an HTML element.\n *\n **\n * @@howToUse\n * ```\n * <some-element
[ngClass]="['first second']">...</some-element>\n *\n * <some-element [ngClass]="['first', 'second']">...</some-
element>\n *\n * <some-element [ngClass]="{'first': true, 'second': true, 'third': false}">...</some-element>\n *\n *
<some-element [ngClass]="stringExp|arrayExp|objExp">...</some-element>\n *\n * <some-element
[ngClass]="{'class1 class2 class3': true}">...</some-element>\n * ```\n *\n **\n * @@description\n *\n * The CSS
classes are updated as follows, depending on the type of the expression evaluation:\n * - `string` - the CSS classes
listed in the string (space delimited) are added,\n * - `Array` - the CSS classes declared as Array elements are
added,\n * - `Object` - keys are CSS classes that get added when the expression given in the value\n *
evaluates to a truthy value, otherwise they are removed.\n *\n **\n * @@stable\n *\n nvar NgClass = /** @class */
(function () {\n function NgClass(_iterableDiffers, _keyValueDiffers, _ngEl, _renderer) {\n
this._iterableDiffers = _iterableDiffers;\n this._keyValueDiffers = _keyValueDiffers;\n this._ngEl =
_ngEl;\n this._renderer = _renderer;\n this._initialClasses = [];\n }\n Object.defineProperty(NgClass.prototype, 'kclass', {\n
set: /**\n * @param {?} v\n * @return {?}\n *\n */\n function (v) {\n this._applyInitialClasses(true);\n this._initialClasses = typeof v ===
'string' ? v.split(/\s+/) : [];\n this._applyInitialClasses(false);\n this._applyClasses(this._rawClass,
false);\n },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(NgClass.prototype, 'ngClass', {\n
set: /**\n * @param {?} v\n * @return
{?}\n *\n */\n function (v) {\n this._cleanupClasses(this._rawClass);\n this._iterableDiffer =
null;\n this._keyValueDiffer = null;\n this._rawClass = typeof v === 'string' ? v.split(/\s+/) : v;\n
if (this._rawClass) {\n if (isListLikeIterable(this._rawClass)) {\n this._iterableDiffer =
this._iterableDiffers.find(this._rawClass).create();\n }\n else {\n this._keyValueDiffer
= this._keyValueDiffers.find(this._rawClass).create();\n }\n }\n },\n enumerable: true,\n
configurable: true\n });\n /**\n * @return {?}\n *\n */\n NgClass.prototype.ngDoCheck = /**\n * @return
{?}\n *\n */\n function () {\n if (this._iterableDiffer) {\n var /** @type {?} */ iterableChanges =
this._iterableDiffer.diff(** @type {?} */ (this._rawClass));\n if (iterableChanges) {\n
this._applyIterableChanges(iterableChanges);\n }\n }\n else if (this._keyValueDiffer) {\n var
/** @type {?} */ keyValueChanges = this._keyValueDiffer.diff(** @type {?} */ (this._rawClass));\n if
(keyValueChanges) {\n this._applyKeyValueChanges(keyValueChanges);\n }\n }\n };\n /**\n * @param {?} rawClassVal\n * @return {?}\n *\n */\n NgClass.prototype._cleanupClasses = /**\n *\n * @param {?} rawClassVal\n * @return {?}\n *\n */\n function (rawClassVal) {\n
this._applyClasses(rawClassVal, true);\n this._applyInitialClasses(false);\n }; \n /**\n * @param {?}
changes\n * @return {?}\n *\n */\n NgClass.prototype._applyKeyValueChanges = /**\n * @param {?}
changes\n * @return {?}\n *\n */\n function (changes) {\n var _this = this;\n
changes.forEachAddedItem(function (record) { return _this._toggleClass(record.key, record.currentValue); });\n
changes.forEachChangedItem(function (record) { return _this._toggleClass(record.key, record.currentValue); });\n
changes.forEachRemovedItem(function (record) {\n if (record.previousValue) {\n
_this._toggleClass(record.key, false);\n }\n });\n }; \n /**\n * @param {?} changes\n * @return

```

```

{?}\n *^/n NgClass.prototype._applyIterableChanges = /**\n * @param {?} changes\n * @return {?}\n *^/n function (changes) {\n var _this = this;\n changes.forEachAddedItem(function (record) {\n if\n (typeof record.item === 'string') {\n _this._toggleClass(record.item, true);\n }\n else {\n throw new Error("NgClass can only toggle CSS classes expressed as strings, got " + stringify(record.item));\n }\n });\n changes.forEachRemovedItem(function (record) { return _this._toggleClass(record.item,\nfalse); });\n }; \n /**\n * @param {?} isCleanup\n * @return {?}\n *^/n\nNgClass.prototype._applyInitialClasses = /**\n * @param {?} isCleanup\n * @return {?}\n *^/n function\n(isCleanup) {\n var _this = this;\n this._initialClasses.forEach(function (klass) { return\n_this._toggleClass(klass, !isCleanup); });\n }; \n /**\n * @param {?} rawClassVal\n * @param {?}\nisCleanup\n * @return {?}\n *^/n NgClass.prototype._applyClasses = /**\n * @param {?} rawClassVal\n * @param {?}\nisCleanup\n * @return {?}\n *^/n function (rawClassVal, isCleanup) {\n var _this =\nthis;\n if (rawClassVal) {\n if (Array.isArray(rawClassVal) || rawClassVal instanceof Set) {\n (** @type {?} */ (rawClassVal)).forEach(function (klass) { return _this._toggleClass(klass, !isCleanup); });\n }\n else {\n Object.keys(rawClassVal).forEach(function (klass) {\n if\n (rawClassVal[klass] != null)\n _this._toggleClass(klass, !isCleanup);\n });\n }\n }\n }; \n /**\n * @param {?} klass\n * @param {?}\nenabled\n * @return {?}\n *^/n\nNgClass.prototype._toggleClass = /**\n * @param {?} klass\n * @param {?}\nenabled\n * @return {?}\n *^/n function (klass, enabled) {\n var _this = this;\n klass = klass.trim();\n if (klass) {\n klass.split(/\\s+/g).forEach(function (klass) {\n if (enabled) {\n _this._renderer.addClass(_this._ngEl.nativeElement, klass);\n }\n else {\n _this._renderer.removeClass(_this._ngEl.nativeElement, klass);\n }\n });\n }\n }; \n NgClass.decorators = [\n { type: Directive, args: [{ selector: '[ngClass]' },] },\n]; \n /** @nocollapse */\n NgClass.ctorParameters = function () { return [\n { type: IterableDiffers, },\n { type: KeyValueDiffers, },\n { type: ElementRef, },\n { type: Renderer2, },\n]; }; \n NgClass.propDecorators = {\n "class": [{\n type: Input, args: ['class'], },],\n "ngClass": [{ type: Input, },],\n }; \n return NgClass;\n})();\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright\n * Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n/**\n * Instantiates a single {@link Component} type\n * and inserts its Host View into current View.\n * `NgComponentOutlet` provides a declarative approach for dynamic\n * component creation.\n * `NgComponentOutlet` requires a component type, if a falsy value is set the view will\n * clear and\n * any existing component will get destroyed.\n * ### Fine tune control\n * You can control the\n * component creation process by using the following optional attributes:\n * `ngComponentOutletInjector`:\n * Optional custom {@link Injector} that will be used as parent for\n * the Component. Defaults to the injector of the\n * current view container.\n * `ngComponentOutletContent`: Optional list of projectable nodes to insert into the\n * content\n * section of the component, if exists.\n * `ngComponentOutletNgModuleFactory`: Optional module\n * factory to allow dynamically loading other\n * module, then load a component from that module.\n * ###\n * Syntax\n * Simple\n * <ng-container *ngComponentOutlet="componentTypeExpression"></ng-\n * container>\n * Customized injector/content\n * <ng-container\n * *ngComponentOutlet="componentTypeExpression;\n * injector: injectorExpression;\n * content: contentNodesExpression;"></ng-container>\n * Customized\n * ngModuleFactory\n * <ng-container *ngComponentOutlet="componentTypeExpression;\n * ngModuleFactory: moduleFactory;"></ng-container>\n * ## Example\n * @example\n * common/ngComponentOutlet/ts/module.ts region='SimpleExample'\n * A more complete example with\n * additional options:\n * @example common/ngComponentOutlet/ts/module.ts region='CompleteExample'\n * A more complete example with ngModuleFactory:\n * @example common/ngComponentOutlet/ts/module.ts\n * region='NgModuleFactoryExample'\n * @experimental\n * nvar NgComponentOutlet = /** @class */\n * (function () {\n * function NgComponentOutlet(_viewContainerRef) {\n * this._viewContainerRef =\n * _viewContainerRef;\n * this._componentRef = null;\n * this._moduleRef = null;\n * }\n * /**\n * @param

```





templates are reordered in the DOM. Otherwise, the DOM element for that item will remain the same. Angular uses object identity to track insertions and deletions within the iterator and reproduce those changes in the DOM. This has important implications for animations and any stateful controls (such as `<input>` elements which accept user input) that are present. Inserted rows can be animated in, deleted rows can be animated out, and unchanged rows retain any unsaved state such as user input. It is possible for the identities of elements in the iterator to change while the data does not. This can happen, for example, if the iterator produced from an RPC to the server, and that RPC is re-run. Even if the data hasn't changed, the second response will produce objects with different identities, and Angular will tear down the entire DOM and rebuild it (as if all old elements were deleted and all new elements inserted). This is an expensive operation and should be avoided if possible. To customize the default tracking algorithm, `NgForOf` supports `trackBy` option. `trackBy` takes a function which has two arguments: `index` and `item`. If `trackBy` is given, Angular tracks changes by the return value of the function.

### Syntax

```
<li *ngFor="let item of items; index as i; trackBy: trackByFn">...
```

With `<ng-template>` element:

```
<ng-template ngFor let-item [ngForOf]="items" let-i="index" [ngForTrackBy]="trackByFn">
 <li...
</ng-template>
```

### Example

See a [live demo](http://plnkr.co/edit/KVuXxDp0qinGDyo307QW?p=preview) for a more detailed example.

```
@stable
nvar NgForOf = /** @class */ (function () {
 function NgForOf(_viewContainer, _template, _differs) {
 this._viewContainer = _viewContainer;
 this._template = _template;
 this._differs = _differs;
 this._differ = null;
 }
 Object.defineProperty(NgForOf.prototype, 'ngForTrackBy', {
 get: /**
 * @return {?}
 */
 function () { return this._trackByFn; },
 set: /**
 * @param {?} fn
 * @return {?}
 */
 function (fn) {
 if (isDevMode() && fn != null && typeof fn !== 'function') {
 // TODO(vicb): use a log service once there is a public one available
 if (/** @type {?} */ (console) && /** @type {?} */ (console.warn)) {
 console.warn("trackBy must be a function, but received '" + JSON.stringify(fn) + "'." +
 "See https://angular.io/docs/ts/latest/api/common/index/NgFor-directive.html#!#change-propagation for more information.");
 }
 this._trackByFn = fn;
 }
 },
 enumerable: true,
 configurable: true
 });
 Object.defineProperty(NgForOf.prototype, 'ngForTemplate', {
 set: /**
 * @param {?} value
 * @return {?}
 */
 function (value) {
 // TODO(TS2.1): make TemplateRef<Partial<NgForRowOf<T>>> once we move to TS v2.1
 // The current type is too restrictive; a template that just uses index, for example,
 // should be acceptable.
 if (value) {
 this._template = value;
 }
 },
 enumerable: true,
 configurable: true
 });
 /**
 * @param {?} changes
 * @return {?}
 */
 NgForOf.prototype.ngOnChanges = /**
 * @param {?} changes
 * @return {?}
 */
 function (changes) {
 if ('ngForOf' in changes) {
 // React on ngForOf changes only once all inputs have been initialized
 var /** @type {?} */ value = changes['ngForOf'].currentValue;
 if (!this._differ && value) {
 try {
 this._differ = this._differs.find(value).create(this.ngForTrackBy);
 } catch (/** @type {?} */ e) {
 throw new Error("Cannot find a differ supporting object '" + value + "' of type '" +
 getTypeNameForDebugging(value) + "'. NgFor only supports binding to Iterables such as Arrays.");
 }
 }
 }
 };
 /**
 * @return {?}
 */
 NgForOf.prototype.ngDoCheck = /**
 * @return {?}
 */
 function () {
 if (this._differ) {
 var /** @type {?} */ changes = this._differ.diff(this.ngForOf);
 if (changes) {
 this._applyChanges(changes);
 }
 }
 };
 /**
 * @param {?} changes
 * @return {?}
 */
 NgForOf.prototype._applyChanges = /**
 * @param {?} changes
 * @return {?}
 */
 function (changes) {
 var _this = this;
 var /** @type {?} */ insertTuples = [];
 changes.forEachOperation(function (item, adjustedPreviousIndex, currentIndex) {
 if (item.previousIndex == null) {
 var /** @type {?} */ view = _this._viewContainer.createEmbeddedView(_this._template, new NgForOfContext(/** @type {?} */ ((null)), _this.ngForOf, -1, -1), currentIndex);
 var /** @type {?} */ tuple = new RecordViewTuple(item, view);
 insertTuples.push(tuple);
 } else if (currentIndex == null) {
 _this._viewContainer.remove(adjustedPreviousIndex);
 } else {
 var /** @type {?} */

```



can display an alternative template while waiting for the data.

```

Syntax
Simple form:
<div *ngIf="condition">...</div>
<ng-template [ngIf]="condition"><div>...</div></ng-template>
Form with an else block:
<div *ngIf="condition; else elseBlock">...</div>
<ng-template #elseBlock>...</ng-template>
Form with a `then` and `else` block:
<div *ngIf="condition; then thenBlock else elseBlock"></div>
<ng-template #thenBlock>...</ng-template>
<ng-template #elseBlock>...</ng-template>
Form with storing the value locally:
<div *ngIf="condition as value; else elseBlock">{{ value }}</div>
<ng-template #elseBlock>...</ng-template>

```

```

@@stable nvar NgIf = /** @class */ (function () {
 function NgIf(_viewContainer, templateRef) {
 this._viewContainer = _viewContainer;
 this._context = new NgIfContext();
 this._thenTemplateRef = null;
 this._elseTemplateRef = null;
 this._thenViewRef = null;
 this._elseViewRef = null;
 this._thenTemplateRef = templateRef;
 }
 Object.defineProperty(NgIf.prototype, "ngIf", {
 set: /** @param {?} condition
 * @return {?}
 */ function (condition) {
 this._context.$implicit = this._context.ngIf = condition;
 this._updateView();
 },
 enumerable: true,
 configurable: true
 });
 Object.defineProperty(NgIf.prototype, "ngIfThen", {
 set: /** @param {?} templateRef
 * @return {?}
 */ function (templateRef) {
 this._thenTemplateRef = templateRef;
 this._thenViewRef = null;
 // clear previous view if any.
 this._updateView();
 },
 enumerable: true,
 configurable: true
 });
 Object.defineProperty(NgIf.prototype, "ngIfElse", {
 set: /** @param {?} templateRef
 * @return {?}
 */ function (templateRef) {
 this._elseTemplateRef = templateRef;
 this._elseViewRef = null;
 // clear previous view if any.
 this._updateView();
 },
 enumerable: true,
 configurable: true
 });
 /** @return {?}
 */ NgIf.prototype._updateView = /** @return {?}
 */ function () {
 if (this._context.$implicit) {
 if (!this._thenViewRef) {
 this._viewContainer.clear();
 this._elseViewRef = null;
 if (this._thenTemplateRef) {
 this._thenViewRef =
 this._viewContainer.createEmbeddedView(this._thenTemplateRef,
 this._context);
 }
 }
 } else {
 if (!this._elseViewRef) {
 this._viewContainer.clear();
 this._thenViewRef = null;
 if (this._elseTemplateRef) {
 this._elseViewRef =
 this._viewContainer.createEmbeddedView(this._elseTemplateRef,
 this._context);
 }
 }
 }
 };
 NgIf.decorators = [
 { type: Directive, args: [
 selector: '[ngIf]',
]
 };
 /** @nocollapse
 */ NgIf.ctorParameters = function () {
 return [
 { type: ViewContainerRef },
 { type: TemplateRef },
];
 };
 NgIf.propDecorators = {
 "ngIf": [
 { type: Input },
],
 "ngIfThen": [
 { type: Input },
],
 "ngIfElse": [
 { type: Input },
],
 };
 return NgIf;
})();
nvar NgIfContext = /** @class */ (function () {
 function NgIfContext() {
 this.$implicit = null;
 this.ngIf = null;
 }
 return NgIfContext;
})();
nvar @fileoverview added by tsickle
nvar @suppress {checkTypes} checked by tsc
nvar @license
nvar Copyright Google Inc. All Rights Reserved.
nvar Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
nvar SwitchView = /** @class */ (function () {
 function SwitchView(_viewContainerRef, _templateRef) {
 this._viewContainerRef = _viewContainerRef;
 this._templateRef = _templateRef;
 this._created = false;
 }
 /** @return {?}
 */
 SwitchView.prototype.create = /** @return {?}
 */ function () {
 this._created = true;
 this._viewContainerRef.createEmbeddedView(this._templateRef);
 };
 /** @return {?}
 */
 SwitchView.prototype.destroy = /** @return {?}
 */ function () {
 this._created = false;
 this._viewContainerRef.clear();
 };
 /** @param {?} created
 * @return {?}
 */
 SwitchView.prototype.enforceState = /** @param {?} created
 * @return {?}
 */ function (created) {
 if (created && !this._created) {
 this.create();
 }
 else if (!created && this._created) {
 this.destroy();
 }
 };
 return SwitchView;
})();
nvar @ngModule CommonModule
nvar @whatItDoes Adds / removes DOM sub-trees when the nest match expressions matches the switch
nvar expression
nvar @howToUse
<container-element [ngSwitch]="switch_expression">
 <some-element *ngSwitchCase="match_expression_1">...</some-

```



```

NgSwitchCase.ctorParameters = function () { return [\n { type: ViewContainerRef, },\n { type: TemplateRef, },\n { type: NgSwitch, decorators: [{ type: Host },], },\n]; };
NgSwitchCase.propDecorators = {\n \"ngSwitchCase\": [{ type: Input },],\n};
return NgSwitchCase;\n})();
\n/**\n * \@ngModule CommonModule\n * \@whatItDoes Creates a view that is added to the parent {\@link NgSwitch} when no case expressions\n * match the\n * switch expression.\n * \n * \@howToUse\n * ``\n * <container-element [ngSwitch]=\"switch_expression\">\n * <some-element *ngSwitchCase=\"match_expression_1\">...</some-element>\n * <some-other-element *ngSwitchDefault>...</some-other-element>\n * </container-element>\n * ``\n * \n * \@description\n * \n * Insert the sub-tree when no case expressions evaluate to the same value as the enclosing switch\n * expression.\n * \n * See {\@link NgSwitch} for more details and example.\n * \n * \@stable\n * \n * \n * NgSwitchDefault = /** @class */ (function () {\n function NgSwitchDefault(viewContainer, templateRef, ngSwitch) {\n ngSwitch._addDefault(new SwitchView(viewContainer, templateRef));\n }\n NgSwitchDefault.decorators = [\n { type: Directive, args: [{ selector: '[ngSwitchDefault]' },], },\n];\n /** @nocollapse */\n NgSwitchDefault.ctorParameters = function () { return [\n { type: ViewContainerRef, },\n { type: TemplateRef, },\n { type: NgSwitch, decorators: [{ type: Host },], },\n]; };
return NgSwitchDefault;\n})();
\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * \n * \n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n * \n * \n * \@ngModule CommonModule\n * \n * \@whatItDoes Adds / removes DOM sub-trees based on a numeric value. Tailored for pluralization.\n * \n * \@howToUse\n * ``\n * <some-element [ngPlural]=\"value\">\n * <ng-template ngPluralCase=\"=0\">there is nothing</ng-template>\n * <ng-template ngPluralCase=\"=1\">there is one</ng-template>\n * <ng-template ngPluralCase=\"few\">there are a few</ng-template>\n * </some-element>\n * ``\n * \n * \@description\n * \n * Displays DOM sub-trees that match the switch expression value, or failing that, DOM sub-trees\n * that match the switch expression's pluralization category.\n * \n * To use this directive you must provide a container element that sets the `ngPlural` attribute\n * to a switch expression. Inner elements with a `ngPluralCase` will display based on their\n * expression:\n * - if `ngPluralCase` is set to a value starting with `=`, it will only display if the value\n * matches the switch expression exactly,\n * - otherwise, the view will be treated as a \"category match\", and will only display if exact\n * value matches aren't found and the value maps to its category for the defined locale.\n * \n * See http://cldr.unicode.org/index/cldr-spec/plural-rules\n * \n * \n * \@experimental\n * \n * \n * NgPlural = /** @class */ (function () {\n function NgPlural(_localization) {\n this._localization = _localization;\n this._caseViews = {};\n }\n Object.defineProperty(NgPlural.prototype, \"ngPlural\", {\n set: /**\n * @param {?} value\n * @return {?} \n * \n * \n * function (value) {\n this._switchValue = value;\n this._updateView();\n },\n enumerable: true,\n configurable: true\n });\n /**\n * @param {?} value\n * @param {?} switchView\n * @return {?} \n * \n * \n * NgPlural.prototype.addCase = /**\n * @param {?} value\n * @param {?} switchView\n * @return {?} \n * \n * \n * function (value, switchView) {\n this._caseViews[value] = switchView; \n }; \n /**\n * @return {?} \n * \n * \n * NgPlural.prototype._updateView = /**\n * @return {?} \n * \n * \n * function () {\n this._clearViews();\n var /** @type {?} */ cases = Object.keys(this._caseViews);\n var /** @type {?} */ key = getPluralCategory(this._switchValue, cases, this._localization);\n this._activateView(this._caseViews[key]);\n }; \n /**\n * @return {?} \n * \n * \n * NgPlural.prototype._clearViews = /**\n * @return {?} \n * \n * \n * function () {\n if (this._activeView)\n this._activeView.destroy();\n }; \n /**\n * @param {?} view\n * @return {?} \n * \n * \n * NgPlural.prototype._activateView = /**\n * @param {?} view\n * @return {?} \n * \n * \n * function (view) {\n if (view) {\n this._activeView = view;\n }\n this._activeView.create();\n } \n}; \nNgPlural.decorators = [\n { type: Directive, args: [{ selector: '[ngPlural]' },], },\n]; \n/** @nocollapse */\nNgPlural.ctorParameters = function () { return [\n { type: NgLocalization, },\n]; }; \nNgPlural.propDecorators = {\n \"ngPlural\": [{ type: Input },],\n}; \nreturn NgPlural;\n})();
\n/**\n * \@ngModule CommonModule\n * \n * \@whatItDoes Creates a view that will be added/removed from the parent {\@link NgPlural} when the\n * given expression matches the plural expression according to CLDR rules.\n * \n * \n * \@howToUse\n * ``\n * <some-element [ngPlural]=\"value\">\n *

```



```

= /** @class */ (function () {\n function NgTemplateOutlet(_viewContainerRef) {\n this._viewContainerRef
= _viewContainerRef;\n }\n /**\n * @param {?} changes\n * @return {?}\n */\n NgTemplateOutlet.prototype.ngOnChanges = /**\n * @param {?} changes\n * @return {?}\n */\n function (changes) {\n var /** @type {?} */ recreateView = this._shouldRecreateView(changes);\n if
(recreateView) {\n if (this._viewRef) {\n
this._viewContainerRef.remove(this._viewContainerRef.indexOf(this._viewRef));\n }\n if
(this.ngTemplateOutlet) {\n this._viewRef =
this._viewContainerRef.createEmbeddedView(this.ngTemplateOutlet, this.ngTemplateOutletContext);\n }\n
 } else {\n if (this._viewRef && this.ngTemplateOutletContext) {\n
this._updateExistingContext(this.ngTemplateOutletContext);\n }\n }\n };\n /**\n * We need to re-
create existing embedded view if:\n * - templateRef has changed\n * - context has changes\n * We
mark context object as changed when the corresponding object\n * shape changes (new properties are added or
existing properties are removed).\n * In other words we consider context with the same properties as \"the same\"
even\n * if object reference changes (see https://github.com/angular/angular/issues/13407).\n * @param {?}
changes\n * @return {?}\n */\n NgTemplateOutlet.prototype._shouldRecreateView = /**\n * We need to
re-create existing embedded view if:\n * - templateRef has changed\n * - context has changes\n * We
mark context object as changed when the corresponding object\n * shape changes (new properties are added or
existing properties are removed).\n * In other words we consider context with the same properties as \"the same\"
even\n * if object reference changes (see https://github.com/angular/angular/issues/13407).\n * @param {?}
changes\n * @return {?}\n */\n function (changes) {\n var /** @type {?} */ ctxChange =
changes['ngTemplateOutletContext'];\n return !!changes['ngTemplateOutlet'] || (ctxChange &&
this._hasContextShapeChanged(ctxChange));\n };\n /**\n * @param {?} ctxChange\n * @return {?}\n
*/\n NgTemplateOutlet.prototype._hasContextShapeChanged = /**\n * @param {?} ctxChange\n * @return
{?}\n */\n function (ctxChange) {\n var /** @type {?} */ prevCtxKeys =
Object.keys(ctxChange.previousValue || {});\n var /** @type {?} */ currCtxKeys =
Object.keys(ctxChange.currentValue || {});\n if (prevCtxKeys.length === currCtxKeys.length) {\n for
(var _i = 0, currCtxKeys_1 = currCtxKeys, _i < currCtxKeys_1.length; _i++) {\n var propName =
currCtxKeys_1[_i];\n if (prevCtxKeys.indexOf(propName) === -1) {\n return true;\n
}\n }\n return false;\n } else {\n return true;\n }\n };\n /**\n * @param {?}
ctx\n * @return {?}\n */\n NgTemplateOutlet.prototype._updateExistingContext = /**\n * @param {?}
ctx\n * @return {?}\n */\n function (ctx) {\n for (var _i = 0, _a = Object.keys(ctx), _i < _a.length; _i++)
{\n var propName = _a[_i];\n (** @type {?} */ (this._viewRef.context))[propName] = (** @type
{?} */ (this.ngTemplateOutletContext))[propName];\n }\n };\n NgTemplateOutlet.decorators = [\n {\n
type: Directive, args: [{ selector: '[ngTemplateOutlet]' }],\n },\n];\n /** @nocollapse */\n
NgTemplateOutlet.ctorParameters = function () { return [\n {\n type: ViewContainerRef,\n },\n];\n
};\n NgTemplateOutlet.propDecorators = {\n \"ngTemplateOutletContext\": [{ type: Input }],\n
 },\n {\n \"ngTemplateOutlet\": [{ type: Input }],\n },\n];\n return NgTemplateOutlet;\n}());\n\n/**\n * @fileoverview added
by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\n/**\n * A collection of Angular directives that are likely to be used
in each and every Angular\n * application.\n */\nvar COMMON_DIRECTIVES = [\n NgClass,\n NgComponentOutlet,\n NgForOf,\n NgIf,\n NgTemplateOutlet,\n NgStyle,\n NgSwitch,\n NgSwitchCase,\n NgSwitchDefault,\n NgPlural,\n NgPluralCase,\n];\n\n/**\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\nvar NAMED_FORMATS = {};\nvar DATE_FORMATS_SPLIT =
/((?:[^\GyMLwWdEabBhHmsSzZO']+)|(?:'(?:[^"]|")')|(?:"(?:G{1,5}|y{1,4}|M{1,5}|L{1,5}|w{1,2}|W{1})|d{1,2}|E{1,6}|
a{1,5}|b{1,5}|B{1,5}|h{1,2}|H{1,2}|m{1,2}|s{1,2}|S{1,3}|z{1,4}|Z{1,5}|O{1,4})))([\\s\\S]*)/;\n\n/** @enum

```

```

{number} *\nvar ZoneWidth = {\n Short: 0,\n ShortGMT: 1,\n Long: 2,\n Extended:
3,\n};\nZoneWidth[ZoneWidth.Short] = \"Short\";\nZoneWidth[ZoneWidth.ShortGMT] =
\"ShortGMT\";\nZoneWidth[ZoneWidth.Long] = \"Long\";\nZoneWidth[ZoneWidth.Extended] =
\"Extended\";\n/** @enum {number} *\nvar DateType = {\n FullYear: 0,\n Month: 1,\n Date: 2,\n Hours:
3,\n Minutes: 4,\n Seconds: 5,\n Milliseconds: 6,\n Day: 7,\n};\nDateType[DateType.FullYear] =
\"FullYear\";\nDateType[DateType.Month] = \"Month\";\nDateType[DateType.Date] =
\"Date\";\nDateType[DateType.Hours] = \"Hours\";\nDateType[DateType.Minutes] =
\"Minutes\";\nDateType[DateType.Seconds] = \"Seconds\";\nDateType[DateType.Milliseconds] =
\"Milliseconds\";\nDateType[DateType.Day] = \"Day\";\n/** @enum {number} *\nvar TranslationType = {\n
DayPeriods: 0,\n Days: 1,\n Months: 2,\n Eras: 3,\n};\nTranslationType[TranslationType.DayPeriods] =
\"DayPeriods\";\nTranslationType[TranslationType.Days] = \"Days\";\nTranslationType[TranslationType.Months]
= \"Months\";\nTranslationType[TranslationType.Eras] = \"Eras\";\n/**\n * Transforms a date to a locale string
based on a pattern and a timezone\n * @internal\n * @param {?} date\n * @param {?} format\n * @param {?}
locale\n * @param {?=} timezone\n * @return {?} *\nfunction formatDate(date, format, locale, timezone) {\n
var /** @type {?} */ namedFormat = getNamedFormat(locale, format);\n format = namedFormat || format;\n var
/** @type {?} */ parts = [];\n var /** @type {?} */ match;\n while (format) {\n match =
DATE_FORMATS_SPLIT.exec(format);\n if (match) {\n parts = parts.concat(match.slice(1));\n
var /** @type {?} */ part = parts.pop();\n if (!part) {\n break;\n }\n format = part;\n
}\n else {\n parts.push(format);\n break;\n }\n }\n var /** @type {?} */
dateTimezoneOffset = date.getTimezoneOffset();\n if (timezone) {\n dateTimezoneOffset =
timezoneToOffset(timezone, dateTimezoneOffset);\n date = convertTimezoneToLocal(date, timezone, true);\n
}\n var /** @type {?} */ text = \"\";\n parts.forEach(function (value) {\n var /** @type {?} */ dateFormatter =
getDateFormatter(value);\n text += dateFormatter ?\n dateFormatter(date, locale, dateTimezoneOffset)
:\n value === \"\\\\\" ? \"\\\\\" : value.replace(/(^|\\$)/g, \"\\\\\").replace(\"/\"g, \"\\\\\");\n });\n return text;\n}\n/**\n *
@param {?} locale\n * @param {?} format\n * @return {?} *\nfunction getNamedFormat(locale, format) {\n
var /** @type {?} */ localeId = getLocaleId(locale);\n NAMED_FORMATS[localeId] =
NAMED_FORMATS[localeId] || {};\n if (NAMED_FORMATS[localeId][format]) {\n return
NAMED_FORMATS[localeId][format];\n }\n var /** @type {?} */ formatValue = \"\";\n switch (format) {\n
case 'shortDate':\n formatValue = getLocaleDateFormat(locale, FormatWidth.Short);\n break;\n
case 'mediumDate':\n formatValue = getLocaleDateFormat(locale, FormatWidth.Medium);\n break;\n
case 'longDate':\n formatValue = getLocaleDateFormat(locale, FormatWidth.Long);\n break;\n
case 'fullDate':\n formatValue = getLocaleDateFormat(locale, FormatWidth.Full);\n break;\n
case 'shortTime':\n formatValue = getLocaleTimeFormat(locale, FormatWidth.Short);\n break;\n
case 'mediumTime':\n formatValue = getLocaleTimeFormat(locale, FormatWidth.Medium);\n break;\n
case 'longTime':\n formatValue = getLocaleTimeFormat(locale, FormatWidth.Long);\n break;\n
case 'fullTime':\n formatValue = getLocaleTimeFormat(locale, FormatWidth.Full);\n break;\n
case 'short':\n var /** @type {?} */ shortTime = getNamedFormat(locale, 'shortTime');\n var /**
@type {?} */ shortDate = getNamedFormat(locale, 'shortDate');\n formatValue =
formatDateTime(getLocaleDateTimeFormat(locale, FormatWidth.Short), [shortTime, shortDate]);\n break;\n
case 'medium':\n var /** @type {?} */ mediumTime = getNamedFormat(locale, 'mediumTime');\n
var /** @type {?} */ mediumDate = getNamedFormat(locale, 'mediumDate');\n formatValue =
formatDateTime(getLocaleDateTimeFormat(locale, FormatWidth.Medium), [mediumTime, mediumDate]);\n
break;\n
case 'long':\n var /** @type {?} */ longTime = getNamedFormat(locale, 'longTime');\n
var /** @type {?} */ longDate = getNamedFormat(locale, 'longDate');\n formatValue =\n
formatDateTime(getLocaleDateTimeFormat(locale, FormatWidth.Long), [longTime, longDate]);\n break;\n
case 'full':\n var /** @type {?} */ fullTime = getNamedFormat(locale, 'fullTime');\n var /** @type
{?} */ fullDate = getNamedFormat(locale, 'fullDate');\n formatValue =\n
formatDateTime(getLocaleDateTimeFormat(locale, FormatWidth.Full), [fullTime, fullDate]);\n break;\n

```



```

}\n if (formatValue) {\n NAMED_FORMATS[localeId][format] = formatValue;\n }\n return
formatValue;\n}\n/**\n * @param {?} str\n * @param {?} opt_values\n * @return {?}\n */\nfunction
formatDateTime(str, opt_values) {\n if (opt_values) {\n str = str.replace(/\\{([^\}]+)}/g, function (match, key)
{\n return (opt_values != null && key in opt_values) ? opt_values[key] : match;\n });\n }\n return
str;\n}\n/**\n * @param {?} num\n * @param {?} digits\n * @param {?=} minusSign\n * @param {?=} trim\n *
@param {?=} negWrap\n * @return {?}\n */\nfunction padNumber(num, digits, minusSign, trim, negWrap) {\n if
(minusSign === void 0) { minusSign = '-'; }\n var /** @type {?} */ neg = ";\n if (num < 0 || (negWrap && num
<= 0)) {\n if (negWrap) {\n num = -num + 1;\n }\n else {\n num = -num;\n neg =
minusSign;\n }\n }\n var /** @type {?} */ strNum = " + num;\n while (strNum.length < digits)\n
strNum = '0' + strNum;\n if (trim) {\n strNum = strNum.substr(strNum.length - digits);\n }\n return neg +
strNum;\n}\n/**\n * Returns a date formatter that transforms a date into its locale digit representation\n *
@param
{?} name\n * @param {?} size\n * @param {?=} offset\n * @param {?=} trim\n * @param {?=} negWrap\n *
@return {?}\n */\nfunction dateGetter(name, size, offset, trim, negWrap) {\n if (offset === void 0) { offset = 0;
}\n if (trim === void 0) { trim = false; }\n if (negWrap === void 0) { negWrap = false; }\n return function
(date, locale) {\n var /** @type {?} */ part = getDatePart(name, date, size);\n if (offset > 0 || part > -offset)
{\n part += offset;\n }\n if (name === DateType.Hours && part === 0 && offset === -12) {\n
part = 12;\n }\n return padNumber(part, size, getLocaleNumberSymbol(locale,
NumberSymbol.MinusSign), trim, negWrap);\n };}\n/**\n * @param {?} name\n * @param {?} date\n *
@param {?} size\n * @return {?}\n */\nfunction getDatePart(name, date, size) {\n switch (name) {\n case
DateType.FullYear:\n return date.getFullYear();\n case DateType.Month:\n return
date.getMonth();\n case DateType.Date:\n return date.getDate();\n case DateType.Hours:\n
return date.getHours();\n case DateType.Minutes:\n return date.getMinutes();\n case
DateType.Seconds:\n return date.getSeconds();\n case DateType.Milliseconds:\n var /** @type
{?} */ div = size === 1 ? 100 : (size === 2 ? 10 : 1);\n return Math.round(date.getMilliseconds() / div);\n
case DateType.Day:\n return date.getDay();\n default:\n throw new Error("Unknown DateType
value '\\\\' + name + '\\\\'");\n }\n}\n/**\n * Returns a date formatter that transforms a date into its locale string
representation\n * @param {?} name\n * @param {?} width\n * @param {?=} form\n * @param {?=} extended\n *
@return {?}\n */\nfunction dateStrGetter(name, width, form, extended) {\n if (form === void 0) { form =
FormStyle.Format; }\n if (extended === void 0) { extended = false; }\n return function (date, locale) {\n
return getDateTranslation(date, locale, name, width, form, extended);\n };}\n/**\n * Returns the locale
translation of a date for a given form, type and width\n * @param {?} date\n * @param {?} locale\n * @param {?}
name\n * @param {?} width\n * @param {?} form\n * @param {?} extended\n * @return {?}\n */\nfunction
getDateTranslation(date, locale, name, width, form, extended) {\n switch (name) {\n case
TranslationType.Months:\n return getLocaleMonthNames(locale, form, width)[date.getMonth()];\n case
TranslationType.Days:\n return getLocaleDayNames(locale, form, width)[date.getDay()];\n case
TranslationType.DayPeriods:\n var /** @type {?} */ currentHours_1 = date.getHours();\n var /**
@type {?} */ currentMinutes_1 = date.getMinutes();\n if (extended) {\n var /** @type {?} */ rules
= getLocaleExtraDayPeriodRules(locale);\n var /** @type {?} */ dayPeriods_1 =
getLocaleExtraDayPeriods(locale, form, width);\n var /** @type {?} */ result_1;\n rules.forEach(function (rule, index) {\n if (Array.isArray(rule)) {\n // morning, afternoon,
evening, night\n var _a = rule[0], hoursFrom = _a.hours, minutesFrom = _a.minutes;\n var _b = rule[1], hoursTo = _b.hours, minutesTo = _b.minutes;\n if (currentHours_1 >= hoursFrom
&& currentMinutes_1 >= minutesFrom && (currentHours_1 < hoursTo ||\n
(currentHours_1 === hoursTo && currentMinutes_1 < minutesTo))) {\n result_1 =
dayPeriods_1[index];\n }\n }\n else {\n // noon or midnight\n var hours = rule.hours, minutes = rule.minutes;\n if (hours === currentHours_1 &&
minutes === currentMinutes_1) {\n result_1 = dayPeriods_1[index];\n }\n }\n });\n if (result_1) {\n return result_1;\n }\n // if no rules

```

```

for the day periods, we use am/pm by default\n return getLocaleDayPeriods(locale, form, /** @type {?} */
(width))[currentHours_1 < 12 ? 0 : 1];\n case TranslationType.Eras:\n return getLocaleEraNames(locale,
/** @type {?} */ (width))[date.getFullYear() <= 0 ? 0 : 1];\n default:\n // This default case is not needed
by TypeScript compiler, as the switch is exhaustive.\n // However Closure Compiler does not understand that
and reports an error in typed mode.\n // The `throw new Error` below works around the problem, and the
unexpected: never variable\n // makes sure tsc still checks this code is unreachable.\n var /** @type
{?} */ unexpected = name;\n throw new Error(`unexpected translation type ` + unexpected);\n }\n}\n/**\n * Returns a date formatter that transforms a date and an offset into a timezone with ISO8601 or\n * GMT format
depending on the width (eg: short = +0430, short:GMT = GMT+4, long = GMT+04:30,\n * extended = +04:30)\n *
@param {?} width\n * @return {?} */\n */\nfunction timeZoneGetter(width) {\n return function (date, locale, offset)
{\n var /** @type {?} */ zone = -1 * offset;\n var /** @type {?} */ minusSign =
getLocaleNumberSymbol(locale, NumberSymbol.MinusSign);\n var /** @type {?} */ hours = zone > 0 ?
Math.floor(zone / 60) : Math.ceil(zone / 60);\n switch (width) {\n case ZoneWidth.Short:\n
return ((zone >= 0) ? '+' : '') + padNumber(hours, 2, minusSign) +\n padNumber(Math.abs(zone % 60),
2, minusSign);\n case ZoneWidth.ShortGMT:\n return 'GMT' + ((zone >= 0) ? '+' : '') +
padNumber(hours, 1, minusSign);\n case ZoneWidth.Long:\n return 'GMT' + ((zone >= 0) ? '+' : '')
+ padNumber(hours, 2, minusSign) + ':' +\n padNumber(Math.abs(zone % 60), 2, minusSign);\n case ZoneWidth.Extended:\n if (offset === 0) {\n return 'Z';\n } else {\n
return ((zone >= 0) ? '+' : '') + padNumber(hours, 2, minusSign) + ':' +\n padNumber(Math.abs(zone % 60), 2, minusSign);\n }\n default:\n throw new
Error(`Unknown zone width ` + width + ` `);\n }\n };\n}\n\nvar JANUARY = 0;\nvar THURSDAY =
4;\n/**\n * @param {?} year\n * @return {?} */\n */\nfunction getFirstThursdayOfYear(year) {\n var /** @type {?} */
firstDayOfYear = (new Date(year, JANUARY, 1)).getDay();\n return new Date(year, 0, 1 + ((firstDayOfYear
<= THURSDAY) ? THURSDAY : THURSDAY + 7) - firstDayOfYear);\n}\n\n/**\n * @param {?} datetime\n *
@return {?} */\n */\nfunction getThursdayThisWeek(datetime) {\n return new Date(datetime.getFullYear(),
datetime.getMonth(), datetime.getDate() + (THURSDAY - datetime.getDay()));\n}\n\n/**\n * @param {?} size\n *
@param {=} monthBased\n * @return {?} */\n */\nfunction weekGetter(size, monthBased) {\n if (monthBased ===
void 0) { monthBased = false; }\n return function (date, locale) {\n var /** @type {?} */ result;\n if
(monthBased) {\n var /** @type {?} */ nbDaysBefore1stDayOfMonth = new Date(date.getFullYear(),
date.getMonth(), 1).getDay() - 1;\n var /** @type {?} */ today = date.getDate();\n result = 1 +
Math.floor((today + nbDaysBefore1stDayOfMonth) / 7);\n } else {\n var /** @type {?} */
firstThurs = getFirstThursdayOfYear(date.getFullYear());\n var /** @type {?} */ thisThurs =
getThursdayThisWeek(date);\n var /** @type {?} */ diff = thisThurs.getTime() - firstThurs.getTime();\n
 result = 1 + Math.round(diff / 6.048e8); // 6.048e8 ms per week\n }\n return padNumber(result, size,
getLocaleNumberSymbol(locale, NumberSymbol.MinusSign));\n };\n}\n\nvar DATE_FORMATS = {};\n\n/**\n *
@param {?} format\n * @return {?} */\n */\nfunction getDateFormatter(format) {\n if (DATE_FORMATS[format])
{\n return DATE_FORMATS[format];\n }\n var /** @type {?} */ formatter;\n switch (format) {\n //
Era name (AD/BC)\n case 'G':\n case 'GG':\n case 'GGG':\n formatter =
dateStrGetter(TranslationType.Eras, TranslationWidth.Abbreviated);\n break;\n case 'GGGG':\n
formatter = dateStrGetter(TranslationType.Eras, TranslationWidth.Wide);\n break;\n case 'GGGGG':\n
formatter = dateStrGetter(TranslationType.Eras, TranslationWidth.Narrow);\n break;\n // 1 digit
representation of the year, e.g. (AD 1 => 1, AD 199 => 199)\n case 'y':\n formatter =
dateGetter(DateType.FullYear, 1, 0, false, true);\n break;\n // 2 digit representation of the year, padded
(00-99). (e.g. AD 2001 => 01, AD 2010 => 10)\n case 'yy':\n formatter = dateGetter(DateType.FullYear,
2, 0, true, true);\n break;\n // 3 digit representation of the year, padded (000-999). (e.g. AD 2001 => 01,
AD 2010 => 10)\n case 'yyy':\n formatter = dateGetter(DateType.FullYear, 3, 0, false, true);\n
 break;\n // 4 digit representation of the year (e.g. AD 1 => 0001, AD 2010 => 2010)\n case 'yyyy':\n
formatter = dateGetter(DateType.FullYear, 4, 0, false, true);\n break;\n // Month of the year (1-12),

```

```

numeric\n case 'M':\n case 'L':\n formatter = dateGetter(DateType.Month, 1, 1);\n break;\n case 'MM':\n case 'LL':\n formatter = dateGetter(DateType.Month, 2, 1);\n break;\n // Month of the year (January, ...), string, format\n case 'MMM':\n formatter = dateStrGetter(TranslationType.Months, TranslationWidth.Abbreviated);\n break;\n case 'MMMM':\n formatter = dateStrGetter(TranslationType.Months, TranslationWidth.Wide);\n break;\n case 'MMMMM':\n formatter = dateStrGetter(TranslationType.Months, TranslationWidth.Narrow);\n break;\n // Month of the year (January, ...), string, standalone\n case 'LLL':\n formatter =\n dateStrGetter(TranslationType.Months, TranslationWidth.Abbreviated, FormStyle.Standalone);\n break;\n case 'LLLL':\n formatter =\n dateStrGetter(TranslationType.Months, TranslationWidth.Wide, FormStyle.Standalone);\n break;\n case 'LLLLL':\n formatter =\n dateStrGetter(TranslationType.Months, TranslationWidth.Narrow, FormStyle.Standalone);\n break;\n // Week of the year (1, ... 52)\n case 'w':\n formatter = weekGetter(1);\n break;\n case 'ww':\n formatter = weekGetter(2);\n break;\n // Week of the month (1, ...)\n case 'W':\n formatter = weekGetter(1, true);\n break;\n // Day of the month (1-31)\n case 'd':\n formatter = dateGetter(DateType.Date, 1);\n break;\n case 'dd':\n formatter = dateGetter(DateType.Date, 2);\n break;\n // Day of the Week\n case 'E':\n case 'EE':\n case 'EEE':\n formatter = dateStrGetter(TranslationType.Days, TranslationWidth.Abbreviated);\n break;\n case 'EEEE':\n formatter = dateStrGetter(TranslationType.Days, TranslationWidth.Wide);\n break;\n case 'EEEEE':\n formatter = dateStrGetter(TranslationType.Days, TranslationWidth.Narrow);\n break;\n case 'EEEEEE':\n formatter = dateStrGetter(TranslationType.Days, TranslationWidth.Short);\n break;\n // Generic period of the day (am-pm)\n case 'a':\n case 'aa':\n case 'aaa':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Abbreviated);\n break;\n case 'aaaa':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Wide);\n break;\n case 'aaaaa':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Narrow);\n break;\n // Extended period of the day (midnight, at night, ...), standalone\n case 'b':\n case 'bb':\n case 'bbb':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Abbreviated, FormStyle.Standalone, true);\n break;\n case 'bbbb':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Wide, FormStyle.Standalone, true);\n break;\n case 'bbbbb':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Narrow, FormStyle.Standalone, true);\n break;\n // Extended period of the day (midnight, night, ...), standalone\n case 'B':\n case 'BB':\n case 'BBB':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Abbreviated, FormStyle.Format, true);\n break;\n case 'BBBB':\n formatter =\n dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Wide, FormStyle.Format, true);\n break;\n case 'BBBBB':\n formatter = dateStrGetter(TranslationType.DayPeriods, TranslationWidth.Narrow, FormStyle.Format, true);\n break;\n // Hour in AM/PM, (1-12)\n case 'h':\n formatter = dateGetter(DateType.Hours, 1, -12);\n break;\n case 'hh':\n formatter = dateGetter(DateType.Hours, 2, -12);\n break;\n // Hour of the day (0-23)\n case 'H':\n formatter = dateGetter(DateType.Hours, 1);\n break;\n // Hour in day, padded (00-23)\n case 'HH':\n formatter = dateGetter(DateType.Hours, 2);\n break;\n // Minute of the hour (0-59)\n case 'm':\n formatter = dateGetter(DateType.Minutes, 1);\n break;\n case 'mm':\n formatter = dateGetter(DateType.Minutes, 2);\n break;\n // Second of the minute (0-59)\n case 's':\n formatter = dateGetter(DateType.Seconds, 1);\n break;\n case 'ss':\n formatter = dateGetter(DateType.Seconds, 2);\n break;\n // Fractional second padded (0-9)\n case 'S':\n formatter = dateGetter(DateType.Milliseconds, 1);\n break;\n case 'SS':\n formatter = dateGetter(DateType.Milliseconds, 2);\n break;\n // = millisecond\n case 'SSS':\n formatter = dateGetter(DateType.Milliseconds, 3);\n break;\n // Timezone ISO8601 short format (-0430)\n case 'Z':\n case 'ZZ':\n case 'ZZZ':\n formatter = timeZoneGetter(ZoneWidth.Short);\n break;\n // Timezone ISO8601 extended format (-04:30)\n case 'ZZZZZ':\n formatter =

```



	Anno Domini	\n *	GGGGG	Narrow
	A	\n *   Year	y	Numeric:
minimum digits	2, 20, 201, 2017, 20173	\n *	yy	
Numeric: 2 digits + zero padded	02, 20, 01, 17, 73	\n *		
yyy	Numeric: 3 digits + zero padded	002, 020, 201, 2017, 20173	\n *	
	yyyy	Numeric: 4 digits or more + zero padded	0002, 0020, 0201, 2017, 20173	
	\n *   Month	M	Numeric: 1 digit	9, 12
	\n *	MM	Numeric: 2 digits + zero padded	09, 12
	\n *	MMM	Abbreviated	Sep
	\n *	MMMM	Wide	September
	\n *	MMMMM	Narrow	S
	\n *   Month standalone	L	Numeric: 1 digit	9, 12
	\n *	LL	Numeric: 2 digits + zero padded	09, 12
	\n *	LLL	Abbreviated	Sep
	\n *	LLLL	Wide	September
	\n *	LLLLL	Narrow	S
	\n *   Week of year	w	Numeric: minimum digits	1... 53
	\n *	ww	Numeric: 2 digits + zero padded	
01... 53	\n *   Week of month	W	Numeric: 1 digit	
1... 5	\n *   Day of month	d	Numeric: minimum digits	
1	\n *	dd	Numeric: 2 digits + zero padded	
01	\n *   Week day	E, EE & EEE	Abbreviated	
Tue	\n *	EEEE	Wide	
Tuesday	\n *	EEEEE	Narrow	
T	\n *	EEEEEEE	Short	
Tu	\n *   Period	a, aa & aaa	Abbreviated	
am/pm or AM/PM	\n *	aaaa	Wide (fallback to `a` when	
missing)	ante meridiem/post meridiem	\n *	aaaaa	Narrow
	a/p	\n *   Period*	B, BB & BBB	
Abbreviated	mid.	\n *	BBBB	
Wide	am, pm, midnight, noon, morning, afternoon, evening, night	\n *		
BBBBB	Narrow	md	\n *   Period	
standalone*   b, bb & bbb	Abbreviated	mid.	\n *	
	bbbb	Wide	am, pm, midnight, noon, morning, afternoon,	
evening, night	\n *	bbbbb	Narrow	md
	\n *   Hour 1-12	h	Numeric: minimum digits	1, 12
	\n *	hh	Numeric: 2 digits + zero padded	01, 12
	\n *   Hour 0-23	H	Numeric: minimum digits	0, 23
	\n *	HH	Numeric: 2 digits + zero padded	00,
23	\n *   Minute	m	Numeric: minimum digits	
8, 59	\n *	mm	Numeric: 2 digits + zero padded	
08, 59	\n *   Second	s	Numeric: minimum digits	
0... 59	\n *	ss	Numeric: 2 digits + zero padded	
00... 59	\n *   Fractional seconds	S	Numeric: 1 digit	
0... 9	\n *	SS	Numeric: 2 digits + zero	
padded	00... 99	\n *	SSS	Numeric: 3 digits
+ zero padded (= milliseconds)	000... 999	\n *   Zone	z, zz & zzz	
Short specific non location format (fallback to O)	GMT-8	\n *		

zzzz	Long specific non location format (fallback to OOOO)	GMT-08:00
n *	Z, ZZ & ZZZ   ISO8601 basic format	-0800
n *	ZZZZ   Long localized GMT format	GMT-8:00
n *	ZZZZZ   ISO8601 extended format + Z indicator for offset 0 (= XXXXX)	-
08:00	n *	O, OO & OOO   Short localized GMT format
GMT-8	n *	OOOO   Long localized GMT format
GMT-08:00	n *	OOOO   Long localized GMT format

without time (e.g. 2016-09-19) the time zone offset is not applied and the formatted text will have the same day, month and year of the expression.

**WARNINGS:** - this pipe has only access to en-US locale data by default. If you want to localize the dates in another language, you will have to import data for other locales. See the [@linkDocs guide/i18n#i18n-pipes "I18n guide"](#) to know how to import additional locale data.

- Fields suffixed with \* are only available in the extra dataset. See the [@linkDocs guide/i18n#i18n-pipes "I18n guide"](#) to know how to import extra locale data.

- this pipe is marked as pure hence it will not be re-evaluated when the input is mutated. Instead users should treat the date as an immutable object and change the reference when the pipe needs to re-run (this is to avoid reformatting the date on every change detection run which would be an expensive operation).

### Examples

Assuming `dateObj` is (year: 2015, month: 6, day: 15, hour: 21, minute: 43, second: 11) in the `_local_` time and locale is 'en-US':

```

{
 @example common/pipes/ts/date_pipe.ts region='DatePipe'
 @stable
 nvar DatePipe = /** @class */
 (function () {
 function DatePipe(locale) {
 this.locale = locale;
 }
 /**
 * @param {?} value
 * @param {?=} format
 * @param {?=} timezone
 * @param {?=} locale
 * @return {?}
 */
 DatePipe.prototype.transform = /**
 * @param {?} value
 * @param {?=} format
 * @param {?=} timezone
 * @param {?=} locale
 * @return {?}
 */
 function (value, format, timezone, locale) {
 if (format === void 0) { format = 'mediumDate'; }
 if (value === null || value === "" || value !== value)
 return null;
 if (typeof value === 'string') {
 value = value.trim();
 var /** @type {?} */
 date;
 var /** @type {?} */
 match;
 if (isDate$(value)) {
 date = value;
 } else if (!isNaN(value - parseFloat(value))) {
 date = new Date(parseFloat(value));
 } else if (typeof value === 'string' && /^(d{4}-d{1,2}-d{1,2})$/.test(value)) {
 /**
 * For ISO Strings without time the day, month and year must be extracted from the ISO String
 * before Date creation to avoid time offset and errors in the new Date.
 * If we only replace '-' with ',' in the ISO String ("2015,01,01"), and try to create a new Date("2015-01-01") the timeoffset is applied
 * Note: ISO months are 0 for January, 1 for February, ...
 */
 var _a = value.split(',').map(function (val) { return +val; });
 y = _a[0], m = _a[1], d = _a[2];
 date = new Date(y, m - 1, d);
 } else if ((typeof value === 'string') && (match = value.match(ISO8601_DATE_REGEX))) {
 date = isoStringToDate(match);
 } else {
 date = new Date(value);
 }
 if (!isDate$(date)) {
 throw invalidPipeArgumentError(DatePipe, value);
 }
 return formatDate(date, format, locale || this.locale, timezone);
 };
 DatePipe.decorators = [
 { type: Pipe, args: [{ name: 'date', pure: true },] },
];
 /** @nocollapse */
 DatePipe.ctorParameters = function () { return [
 { type: undefined, decorators: [{ type: Inject, args: [LOCALE_ID,] },] },
]; };
 return DatePipe;
 }();
 /**
 * @internal
 * @param {?} match
 * @return {?}
 */
 function isoStringToDate(match) {
 var /** @type {?} */
 date = new Date(0);
 var /** @type {?} */
 tzHour = 0;
 var /** @type {?} */
 tzMin = 0;
 // match[8] means that the string contains "Z" (UTC) or a timezone like "+01:00" or "+0100"
 var /** @type {?} */
 dateSetter = match[8] ?
 date.setUTCFullYear : date.setFullYear;
 var /** @type {?} */
 timeSetter = match[8] ? date.setUTCHours :
 date.setHours;
 // if there is a timezone defined like "+01:00" or "+0100"
 if (match[9]) {
 tzHour = +(match[9] + match[10]);
 tzMin = +(match[9] + match[11]);
 }
 dateSetter.call(date, +(match[1]), +(match[2]) - 1, +(match[3]));
 var /** @type {?} */
 h = +(match[4] || '0') - tzHour;
 var /** @type {?} */
 m = +(match[5] || '0') - tzMin;
 var /** @type {?} */
 s = +(match[6] || '0');
 var /** @type {?} */
 ms = Math.round(parseFloat('0.' + (match[7] || 0)) * 1000);
 timeSetter.call(date, h, m, s, ms);
 return date;
 };
 }());
}

```

```

* @param {?} value\n * @return {?}\n */\nfunction isDate$1(value) {\n return value instanceof Date &&\n !isNaN(value.valueOf());\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by\ntsc\n */\nvar NumberFormatter = /** @class */ (function () {\n function NumberFormatter() {\n }\n /**\n * @param {?} num\n * @param {?} locale\n * @param {?} style\n * @param {?=} opts\n * @return {?}\n */\n NumberFormatter.format = /**\n * @param {?} num\n * @param {?} locale\n * @param {?} style\n * @param {?=} opts\n * @return {?}\n */\n function (num, locale, style, opts) {\n if (opts === void 0) {\n opts = {};\n }\n var minimumIntegerDigits = opts.minimumIntegerDigits, minimumFractionDigits =\n opts.minimumFractionDigits, maximumFractionDigits = opts.maximumFractionDigits, currency = opts.currency, _a\n = opts.currencyAsSymbol, currencyAsSymbol = _a === void 0 ? false : _a;\n var /** @type {?} */ options =\n {\n minimumIntegerDigits: minimumIntegerDigits,\n minimumFractionDigits:\n minimumFractionDigits,\n maximumFractionDigits: maximumFractionDigits,\n style:\n NumberFormatStyle[style].toLowerCase()\n };\n if (style == NumberFormatStyle.Currency) {\n options.currency = typeof currency == 'string' ? currency : undefined;\n options.currencyDisplay =\n currencyAsSymbol ? 'symbol' : 'code';\n }\n return new Intl.NumberFormat(locale, options).format(num);\n };\n return NumberFormatter;\n})();\n\nvar DATE_FORMATS_SPLIT$1 =\n/((?:[^\u000d\u000a\u000c\u000d\u000e\u000f\u0010\u0011\u0012\u0013\u0014\u0015\u0016\u0017\u0018\u0019\u001a\u001b\u001c\u001d\u001e\u001f\u0020\u0021\u0022\u0023\u0024\u0025\u0026\u0027\u0028\u0029\u002a\u002b\u002c\u002d\u002e\u002f\u0030\u0031\u0032\u0033\u0034\u0035\u0036\u0037\u0038\u0039\u003a\u003b\u003c\u003d\u003e\u003f\u0040\u0041\u0042\u0043\u0044\u0045\u0046\u0047\u0048\u0049\u004a\u004b\u004c\u004d\u004e\u004f\u0050\u0051\u0052\u0053\u0054\u0055\u0056\u0057\u0058\u0059\u005a\u005b\u005c\u005d\u005e\u005f\u0060\u0061\u0062\u0063\u0064\u0065\u0066\u0067\u0068\u0069\u006a\u006b\u006c\u006d\u006e\u006f\u0070\u0071\u0072\u0073\u0074\u0075\u0076\u0077\u0078\u0079\u007a\u007b\u007c\u007d\u007e\u007f\u0080\u0081\u0082\u0083\u0084\u0085\u0086\u0087\u0088\u0089\u008a\u008b\u008c\u008d\u008e\u008f\u0090\u0091\u0092\u0093\u0094\u0095\u0096\u0097\u0098\u0099\u009a\u009b\u009c\u009d\u009e\u009f\u00a0\u00a1\u00a2\u00a3\u00a4\u00a5\u00a6\u00a7\u00a8\u00a9\u00aa\u00ab\u00ac\u00ad\u00ae\u00af\u00b0\u00b1\u00b2\u00b3\u00b4\u00b5\u00b6\u00b7\u00b8\u00b9\u00ba\u00bb\u00bc\u00bd\u00be\u00bf\u00c0\u00c1\u00c2\u00c3\u00c4\u00c5\u00c6\u00c7\u00c8\u00c9\u00ca\u00cb\u00cc\u00cd\u00ce\u00cf\u00d0\u00d1\u00d2\u00d3\u00d4\u00d5\u00d6\u00d7\u00d8\u00d9\u00da\u00db\u00dc\u00dd\u00de\u00df\u00e0\u00e1\u00e2\u00e3\u00e4\u00e5\u00e6\u00e7\u00e8\u00e9\u00ea\u00eb\u00ec\u00ed\u00ee\u00ef\u00f0\u00f1\u00f2\u00f3\u00f4\u00f5\u00f6\u00f7\u00f8\u00f9\u00fa\u00fb\u00fc\u00fd\u00fe\u00ff\u0100\u0101\u0102\u0103\u0104\u0105\u0106\u0107\u0108\u0109\u010a\u010b\u010c\u010d\u010e\u010f\u0110\u0111\u0112\u0113\u0114\u0115\u0116\u0117\u0118\u0119\u011a\u011b\u011c\u011d\u011e\u011f\u0120\u0121\u0122\u0123\u0124\u0125\u0126\u0127\u0128\u0129\u012a\u012b\u012c\u012d\u012e\u012f\u0130\u0131\u0132\u0133\u0134\u0135\u0136\u0137\u0138\u0139\u013a\u013b\u013c\u013d\u013e\u013f\u0140\u0141\u0142\u0143\u0144\u0145\u0146\u0147\u0148\u0149\u014a\u014b\u014c\u014d\u014e\u014f\u0150\u0151\u0152\u0153\u0154\u0155\u0156\u0157\u0158\u0159\u015a\u015b\u015c\u015d\u015e\u015f\u0160\u0161\u0162\u0163\u0164\u0165\u0166\u0167\u0168\u0169\u016a\u016b\u016c\u016d\u016e\u016f\u0170\u0171\u0172\u0173\u0174\u0175\u0176\u0177\u0178\u0179\u017a\u017b\u017c\u017d\u017e\u017f\u0180\u0181\u0182\u0183\u0184\u0185\u0186\u0187\u0188\u0189\u018a\u018b\u018c\u018d\u018e\u018f\u0190\u0191\u0192\u0193\u0194\u0195\u0196\u0197\u0198\u0199\u019a\u019b\u019c\u019d\u019e\u019f\u01a0\u01a1\u01a2\u01a3\u01a4\u01a5\u01a6\u01a7\u01a8\u01a9\u01aa\u01ab\u01ac\u01ad\u01ae\u01af\u01b0\u01b1\u01b2\u01b3\u01b4\u01b5\u01b6\u01b7\u01b8\u01b9\u01ba\u01bb\u01bc\u01bd\u01be\u01bf\u01c0\u01c1\u01c2\u01c3\u01c4\u01c5\u01c6\u01c7\u01c8\u01c9\u01ca\u01cb\u01cc\u01cd\u01ce\u01cf\u01d0\u01d1\u01d2\u01d3\u01d4\u01d5\u01d6\u01d7\u01d8\u01d9\u01da\u01db\u01dc\u01dd\u01de\u01df\u01e0\u01e1\u01e2\u01e3\u01e4\u01e5\u01e6\u01e7\u01e8\u01e9\u01ea\u01eb\u01ec\u01ed\u01ee\u01ef\u01f0\u01f1\u01f2\u01f3\u01f4\u01f5\u01f6\u01f7\u01f8\u01f9\u01fa\u01fb\u01fc\u01fd\u01fe\u01ff\u0200\u0201\u0202\u0203\u0204\u0205\u0206\u0207\u0208\u0209\u020a\u020b\u020c\u020d\u020e\u020f\u0210\u0211\u0212\u0213\u0214\u0215\u0216\u0217\u0218\u0219\u021a\u021b\u021c\u021d\u021e\u021f\u0220\u0221\u0222\u0223\u0224\u0225\u0226\u0227\u0228\u0229\u022a\u022b\u022c\u022d\u022e\u022f\u0230\u0231\u0232\u0233\u0234\u0235\u0236\u0237\u0238\u0239\u023a\u023b\u023c\u023d\u023e\u023f\u0240\u0241\u0242\u0243\u0244\u0245\u0246\u0247\u0248\u0249\u024a\u024b\u024c\u024d\u024e\u024f\u0250\u0251\u0252\u0253\u0254\u0255\u0256\u0257\u0258\u0259\u025a\u025b\u025c\u025d\u025e\u025f\u0260\u0261\u0262\u0263\u0264\u0265\u0266\u0267\u0268\u0269\u026a\u026b\u026c\u026d\u026e\u026f\u0270\u0271\u0272\u0273\u0274\u0275\u0276\u0277\u0278\u0279\u027a\u027b\u027c\u027d\u027e\u027f\u0280\u0281\u0282\u0283\u0284\u0285\u0286\u0287\u0288\u0289\u028a\u028b\u028c\u028d\u028e\u028f\u0290\u0291\u0292\u0293\u0294\u0295\u0296\u0297\u0298\u0299\u029a\u029b\u029c\u029d\u029e\u029f\u02a0\u02a1\u02a2\u02a3\u02a4\u02a5\u02a6\u02a7\u02a8\u02a9\u02aa\u02ab\u02ac\u02ad\u02ae\u02af\u02b0\u02b1\u02b2\u02b3\u02b4\u02b5\u02b6\u02b7\u02b8\u02b9\u02ba\u02bb\u02bc\u02bd\u02be\u02bf\u02c0\u02c1\u02c2\u02c3\u02c4\u02c5\u02c6\u02c7\u02c8\u02c9\u02ca\u02cb\u02cc\u02cd\u02ce\u02cf\u02d0\u02d1\u02d2\u02d3\u02d4\u02d5\u02d6\u02d7\u02d8\u02d9\u02da\u02db\u02dc\u02dd\u02de\u02df\u02e0\u02e1\u02e2\u02e3\u02e4\u02e5\u02e6\u02e7\u02e8\u02e9\u02ea\u02eb\u02ec\u02ed\u02ee\u02ef\u02f0\u02f1\u02f2\u02f3\u02f4\u02f5\u02f6\u02f7\u02f8\u02f9\u02fa\u02fb\u02fc\u02fd\u02fe\u02ff\u0300\u0301\u0302\u0303\u0304\u0305\u0306\u0307\u0308\u0309\u030a\u030b\u030c\u030d\u030e\u030f\u0310\u0311\u0312\u0313\u0314\u0315\u0316\u0317\u0318\u0319\u031a\u031b\u031c\u031d\u031e\u031f\u0320\u0321\u0322\u0323\u0324\u0325\u0326\u0327\u0328\u0329\u032a\u032b\u032c\u032d\u032e\u032f\u0330\u0331\u0332\u0333\u0334\u0335\u0336\u0337\u0338\u0339\u033a\u033b\u033c\u033d\u033e\u033f\u0340\u0341\u0342\u0343\u0344\u0345\u0346\u0347\u0348\u0349\u034a\u034b\u034c\u034d\u034e\u034f\u0350\u0351\u0352\u0353\u0354\u0355\u0356\u0357\u0358\u0359\u035a\u035b\u035c\u035d\u035e\u035f\u0360\u0361\u0362\u0363\u0364\u0365\u0366\u0367\u0368\u0369\u036a\u036b\u036c\u036d\u036e\u036f\u0370\u0371\u0372\u0373\u0374\u0375\u0376\u0377\u0378\u0379\u037a\u037b\u037c\u037d\u037e\u037f\u0380\u0381\u0382\u0383\u0384\u0385\u0386\u0387\u0388\u0389\u038a\u038b\u038c\u038d\u038e\u038f\u0390\u0391\u0392\u0393\u0394\u0395\u0396\u0397\u0398\u0399\u039a\u039b\u039c\u039d\u039e\u039f\u03a0\u03a1\u03a2\u03a3\u03a4\u03a5\u03a6\u03a7\u03a8\u03a9\u03aa\u03ab\u03ac\u03ad\u03ae\u03af\u03b0\u03b1\u03b2\u03b3\u03b4\u03b5\u03b6\u03b7\u03b8\u03b9\u03ba\u03bb\u03bc\u03bd\u03be\u03bf\u03c0\u03c1\u03c2\u03c3\u03c4\u03c5\u03c6\u03c7\u03c8\u03c9\u03ca\u03cb\u03cc\u03cd\u03ce\u03cf\u03d0\u03d1\u03d2\u03d3\u03d4\u03d5\u03d6\u03d7\u03d8\u03d9\u03da\u03db\u03dc\u03dd\u03de\u03df\u03e0\u03e1\u03e2\u03e3\u03e4\u03e5\u03e6\u03e7\u03e8\u03e9\u03ea\u03eb\u03ec\u03ed\u03ee\u03ef\u03f0\u03f1\u03f2\u03f3\u03f4\u03f5\u03f6\u03f7\u03f8\u03f9\u03fa\u03fb\u03fc\u03fd\u03fe\u03ff\u0400\u0401\u0402\u0403\u0404\u0405\u0406\u0407\u0408\u0409\u040a\u040b\u040c\u040d\u040e\u040f\u0410\u0411\u0412\u0413\u0414\u0415\u0416\u0417\u0418\u0419\u041a\u041b\u041c\u041d\u041e\u041f\u0420\u0421\u0422\u0423\u0424\u0425\u0426\u0427\u0428\u0429\u042a\u042b\u042c\u042d\u042e\u042f\u0430\u0431\u0432\u0433\u0434\u0435\u0436\u0437\u0438\u0439\u043a\u043b\u043c\u043d\u043e\u043f\u0440\u0441\u0442\u0443\u0444\u0445\u0446\u0447\u0448\u0449\u044a\u044b\u044c\u044d\u044e\u044f\u0450\u0451\u0452\u0453\u0454\u0455\u0456\u0457\u0458\u0459\u045a\u045b\u045c\u045d\u045e\u045f\u0460\u0461\u0462\u0463\u0464\u0465\u0466\u0467\u0468\u0469\u046a\u046b\u046c\u046d\u046e\u046f\u0470\u0471\u0472\u0473\u0474\u0475\u0476\u0477\u0478\u0479\u047a\u047b\u047c\u047d\u047e\u047f\u0480\u0481\u0482\u0483\u0484\u0485\u0486\u0487\u0488\u0489\u048a\u048b\u048c\u048d\u048e\u048f\u0490\u0491\u0492\u0493\u0494\u0495\u0496\u0497\u0498\u0499\u049a\u049b\u049c\u049d\u049e\u049f\u04a0\u04a1\u04a2\u04a3\u04a4\u04a5\u04a6\u04a7\u04a8\u04a9\u04aa\u04ab\u04ac\u04ad\u04ae\u04af\u04b0\u04b1\u04b2\u04b3\u04b4\u04b5\u04b6\u04b7\u04b8\u04b9\u04ba\u04bb\u04bc\u04bd\u04be\u04bf\u04c0\u04c1\u04c2\u04c3\u04c4\u04c5\u04c6\u04c7\u04c8\u04c9\u04ca\u04cb\u04cc\u04cd\u04ce\u04cf\u04d0\u04d1\u04d2\u04d3\u04d4\u04d5\u04d6\u04d7\u04d8\u04d9\u04da\u04db\u04dc\u04dd\u04de\u04df\u04e0\u04e1\u04e2\u04e3\u04e4\u04e5\u04e6\u04e7\u04e8\u04e9\u04ea\u04eb\u04ec\u04ed\u04ee\u04ef\u04f0\u04f1\u04f2\u04f3\u04f4\u04f5\u04f6\u04f7\u04f8\u04f9\u04fa\u04fb\u04fc\u04fd\u04fe\u04ff\u0500\u0501\u0502\u0503\u0504\u0505\u0506\u0507\u0508\u0509\u050a\u050b\u050c\u050d\u050e\u050f\u0510\u0511\u0512\u0513\u0514\u0515\u0516\u0517\u0518\u0519\u051a\u051b\u051c\u051d\u051e\u051f\u0520\u0521\u0522\u0523\u0524\u0525\u0526\u0527\u0528\u0529\u052a\u052b\u052c\u052d\u052e\u052f\u0530\u0531\u0532\u0533\u0534\u0535\u0536\u0537\u0538\u0539\u053a\u053b\u053c\u053d\u053e\u053f\u0540\u0541\u0542\u0543\u0544\u0545\u0546\u0547\u0548\u0549\u054a\u054b\u054c\u054d\u054e\u054f\u0550\u0551\u0552\u0553\u0554\u0555\u0556\u0557\u0558\u0559\u055a\u055b\u055c\u055d\u055e\u055f\u0560\u0561\u0562\u0563\u0564\u0565\u0566\u0567\u0568\u0569\u056a\u056b\u056c\u056d\u056e\u056f\u0570\u0571\u0572\u0573\u0574\u0575\u0576\u0577\u0578\u0579\u057a\u057b\u057c\u057d\u057e\u057f\u0580\u0581\u0582\u0583\u0584\u0585\u0586\u0587\u0588\u0589\u058a\u058b\u058c\u058d\u058e\u058f\u0590\u0591\u0592\u0593\u0594\u0595\u0596\u0597\u0598\u0599\u059a\u059b\u059c\u059d\u059e\u059f\u05a0\u05a1\u05a2\u05a3\u05a4\u05a5\u05a6\u05a7\u05a8\u05a9\u05aa\u05ab\u05ac\u05ad\u05ae\u05af\u05b0\u05b1\u05b2\u05b3\u05b4\u05b5\u05b6\u05b7\u05b8\u05b9\u05ba\u05bb\u05bc\u05bd\u05be\u05bf\u05c0\u05c1\u05c2\u05c3\u05c4\u05c5\u05c6\u05c7\u05c8\u05c9\u05ca\u05cb\u05cc\u05cd\u05ce\u05cf\u05d0\u05d1\u05d2\u05d3\u05d4\u05d5\u05d6\u05d7\u05d8\u05d9\u05da\u05db\u05dc\u05dd\u05de\u05df\u05e0\u05e1\u05e2\u05e3\u05e4\u05e5\u05e6\u05e7\u05e8\u05e9\u05ea\u05eb\u05ec\u05ed\u05ee\u05ef\u05f0\u05f1\u05f2\u05f3\u05f4\u05f5\u05f6\u05f7\u05f8\u05f9\u05fa\u05fb\u05fc\u05fd\u05fe\u05ff\u0600\u0601\u0602\u0603\u0604\u0605\u0606\u0607\u0608\u0609\u060a\u060b\u060c\u060d\u060e\u060f\u0610\u0611\u0612\u0613\u0614\u0615\u0616\u0617\u0618\u0619\u061a\u061b\u061c\u061d\u061e\u061f\u0620\u0621\u0622\u0623\u0624\u0625\u0626\u0627\u0628\u0629\u062a\u062b\u062c\u062d\u062e\u062f\u0630\u0631\u0632\u0633\u0634\u0635\u0636\u0637\u0638\u0639\u063a\u063b\u063c\u063d\u063e\u063f\u0640\u0641\u0642\u0643\u0644\u0645\u0646\u0647\u0648\u0649\u064a\u064b\u064c\u064d\u064e\u064f\u0650\u0651\u0652\u0653\u0654\u0655\u0656\u0657\u0658\u0659\u065a\u065b\u065c\u065d\u065e\u065f\u0660\u0661\u0662\u0663\u0664\u0665\u0666\u0667\u0668\u0669\u066a\u066b\u066c\u066d\u066e\u066f\u0670\u0671\u0672\u0673\u0674\u0675\u0676\u0677\u0678\u0679\u067a\u067b\u067c\u067d\u067e\u067f\u0680\u0681\u0682\u0683\u0684\u0685\u0686\u0687\u0688\u0689\u068a\u068b\u068c\u068d\u068e\u068f\u0690\u0691\u0692\u0693\u0694\u0695\u0696\u0697\u0698\u0699\u069a\u069b\u069c\u069d\u069e\u069f\u06a0\u06a1\u06a2\u06a3\u06a4\u06a5\u06a6\u06a7\u06a8\u06a9\u06aa\u06ab\u06ac\u06ad\u06ae\u06af\u06b0\u06b1\u06b2\u06b3\u06b4\u06b5\u06b6\u06b7\u06b8\u06b9\u06ba\u06bb\u06bc\u06bd\u06be\u06bf\u06c0\u06c1\u06c2\u06c3\u06c4\u06c5\u06c6\u06c7\u06c8\u06c9\u06ca\u06cb\u06cc\u06cd\u06ce\u06cf\u06d0\u06d1\u06d2\u06d3\u06d4\u06d5\u06d6\u06d7\u06d8\u06d9\u06da\u06db\u06dc\u06dd\u06de\u06df\u06e0\u06e1\u06e2\u06e3\u06e4\u06e5\u06e6\u06e7\u06e8\u06e9\u06ea\u06eb\u06ec\u06ed\u06ee\u06ef\u06f0\u06f1\u06f2\u06f3\u06f4\u06f5\u06f6\u06f7\u06f8\u06f9\u06fa\u06fb\u06fc\u06fd\u06fe\u06ff\u0700\u0701\u0702\u0703\u0704\u0705\u0706\u0707\u0708\u0709\u070a\u070b\u070c\u070d\u070e\u070f\u0710\u0711\u0712\u0713\u0714\u0715\u0716\u0717\u0718\u0719\u071a\u071b\u071c\u071d\u071e\u071f\u0720\u0721\u0722\u0723\u0724\u0725\u0726\u0727\u0728\u0729\u072a\u072b\u072c\u072d\u072e\u072f\u0730\u0731\u0732\u0733\u0734\u0735\u0736\u0737\u0738\u0739\u073a\u073b\u073c\u073d\u073e\u073f\u0740\u0741\u0742\u0743\u0744\u0745\u0746\u0747\u0748\u0749\u074a\u074b\u074c\u074d\u074e\u074f\u0750\u0751\u0752\u0753\u0754\u0755\u0756\u0757\u0758\u0759\u075a\u075b\u075c\u075d\u075e\u075f\u0760\u0761\u0762\u0763\u0764\u0765\u0766\u0767\u0768\u0769\u076a\u076b\u076c\u076d\u076e\u076f\u0770\u0771\u0772\u0773\u0774\u0775\u0776\u0777\u0778\u0779\u077a\u077b\u077c\u077d\u077e\u077f\u0780\u0781\u0782\u0783\u0784\u0785\u0786\u0787\u0788\u0789\u078a\u078b\u078c\u078d\u078e\u078f\u0790\u0791\u0792\u0793\u0794\u0795\u0796\u0797\u0798\u0799\u079a\u079b\u079c\u079d\u079e\u079f\u07a0\u07a1\u07a2\u07a3\u07a4\u07a5\u07a6\u07a7\u07a8\u07a9\u07aa\u07ab\u07ac\u07ad\u07ae\u07af\u07b0\u07b1\u07b2\u07b3\u07b4\u07b5\u07b6\u07b7\u07b8\u07b9\u07ba\u07bb\u07bc\u07bd\u07be\u07bf\u07c0\u07c1\u07c2\u07c3\u07c4\u07c5\u07c6\u07c7\u07c8\u07c9\u07ca\u07cb\u07cc\u07cd\u07ce\u07cf\u07d0\u07d1\u07d2\u07d3\u07d4\u07d5\u07d6\u07d7\u07d8\u07d9\u07da\u07db\u07dc\u07dd\u07de\u07df\u07e0\u07e1\u07e2\u07e3\u07e4\u07e5\u07e6\u07e7\u07e8\u07e9\u07ea\u07eb\u07ec\u07ed\u07ee\u07ef\u07f0\u07f1\u07f2\u07f3\u07f4\u07f5\u07f6\u07f7\u07f8\u07f9\u07fa\u07fb\u07fc\u07fd\u07fe\u07ff\u0800\u0801\u0802\u0803\u0804\u0805\u0806\u0807\u0808\u0809\u080a\u080b\u080c\u080d\u080e\u080f\u0810\u0811\u0812\u0813\u0814\u0815\u0816\u0817\u0818\u0819\u081a\u081b\u081c\u081d\u081e\u081f\u0820\u0821\u0822\u0823\u0824\u0825\u0826\u0827\u0828\u0829\u082a\u082b\u082c\u082d\u082e\u082f\u0830\u0831\u0832\u0833\u0834\u0835\u0836\u0837\u0838\u0839\u083a\u083b\u083c\u083d\u083e\u083f\u0840\u0841\u0842\u0843\u0844\u0845\u0846\u0847\u0848\u0849\u084a\u084b\u084c\u084d\u084e\u084f\u0850\u0851\u0852\u0853\u0854\u0855\u0856\u0857\u0858\u0859\u085a\u085b\u085c\u085d\u085e\u085f\u0860\u0861\u0862\u0863\u0864\u0865\u0866\u0867\u0868\u0869\u086a\u086b\u086c\u086d\u086e\u086f\u0870\u0871\u0872\u0873\u0874\u0875\u0876\u0877\u0878\u0879\u087a\u087b\u087c\u087d\u087e\u087f\u0880\u0881\u0882\u0883\u0884\u0885\u0886\u0887\u0888\u0889\u088a\u088b\u088c\u088d\u088e\u088f\u0890\u0891\u0892\u0893\u0894\u0895\u0896\u0897\u0898\u0899\u089a\u089b\u089c\u089d\u089e\u089f\u08a0\u08a1\u08a2\u08a3\u08a4\u08a5\u08a6\u08a7\u08a8\u08a9\u08aa\u08ab\u08ac\u08ad\u08ae\u08af\u08b0\u08b1\u08b2\u08b3\u08b4\u08b5\u08b6\u08b7\u08b8\u08b9\u08ba\u08bb\u08bc\u08bd\u08be\u08bf\u08c0\u08c1\u08c2\u08c3\u08c4\u08c5\u08c6\u08c7\u08c8\u08c9\u08ca\u08cb\u08cc\u08cd\u08ce\u08cf\u08d0\u08d1\u08d2\u08d3\u08d4\u08d5\u08d6\u08d7\u08d8\u08d9\u08da\u08db\u08dc\u08dd\u08de\u08df\u08e0\u08e1\u08e2\u08e3\u08e4\u08e5\u08e6\u08e7\u08e8\u08e9\u08ea\u08eb\u08ec\u08ed\u08ee\u08ef\u08f0\u08f1\u08f2\u08f3\u08f4\u08f5\u08f6\u08f7\u08f8\u08f9\u08fa\u08fb\u08fc\u08fd\u08fe\u08ff\u0900\u0901\u0902\u0903\u0904\u0905\u0906\u0907\u0908\u0909\u090a\u090b\u090c\u090d\u090e\u090f\u0910\u0911\u0912\u0913\u0914\u0915\u0916\u0917\u0918\u0919\u091a\u091b\u091c\u091d\u091e\u091f\u0920\u0921\u0922\u0923\u0924\u0925\u0926\u0927\u0928\u0929\u092a\u092b\u092c\u092d\u092e\u092f\u0930\u0931\u0932\u0933\u0934\u0935\u0936\u0937\u0938\u0939\u093a\u093b\u093c\u093d\u093e\u093f\u0940\u0941\u0942\u0943\u0944\u0945\u0946\u0947\u0948\u0949\u094a\u094b\u094c\u094d\u094e\u094f\u0950\u0951\u0952\u0953\u0954\u0955\u0956\u0957\u0958\u0959\u095a\u095b\u095c\u095d\u095e\u095f\u0960\u0961\u0962\u0963\u0964\u0965\u0966\u0967\u0968\u0969\u096a\u096b\u096c\u096d\u096e\u096f\u0970\u0971\u0972\u0973\u0974\u0975\u0976\u0977\u0978\u0979\u097a\u097b\u097c\u097d\u097e\u097f\u0980\u0981\u0982\u0983\u0984\u0985\u0986\u0987\u0988\u0989\u098a\u098b\u098c\u098d\u098e\u098f\u0990\u0991\u0992\u0993\u0994\u0995\u0996\u09
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3)),\n 'EE': datePartGetterFactory(nameCondition('weekday', 2)),\n 'E':
datePartGetterFactory(nameCondition('weekday', 1)),\n 'a':
hourClockExtractor(datePartGetterFactory(hour12Modify(digitCondition('hour', 1), true))),\n 'Z':
timeZoneGetter$1('short'),\n 'z': timeZoneGetter$1('long'),\n 'ww': datePartGetterFactory({}),\n // Week of
year, padded (00-53). Week 01 is the week with the\n // first Thursday of the year. not support ?\n 'w':
datePartGetterFactory({}),\n // Week of year (0-53). Week 1 is the week with the first Thursday\n // of the year
not support ?\n 'G': datePartGetterFactory(nameCondition('era', 1)),\n 'GG':
datePartGetterFactory(nameCondition('era', 2)),\n 'GGG': datePartGetterFactory(nameCondition('era', 3)),\n
'GGGG': datePartGetterFactory(nameCondition('era', 4))\n};\n\n/**\n * @param {?} inner\n * @return {?}
*\n\nfunction digitModifier(inner) {\n return function (date, locale) {\n var /** @type {?} */ result =
inner(date, locale);\n return result.length == 1 ? '0' + result : result;\n };}\n\n/**\n * @param {?} inner\n *
@return {?}
*\n\nfunction hourClockExtractor(inner) {\n return function (date, locale) { return inner(date,
locale).split(' ')[1]; }\n};\n\n/**\n * @param {?} inner\n * @return {?}
*\n\nfunction hourExtractor(inner) {\n return function (date, locale) { return inner(date, locale).split('
')[0]; }\n};\n\n/**\n * @param {?} date\n * @param
{?} locale\n * @param {?} options\n * @return {?}
*\n\nfunction intlDateFormat(date, locale, options) {\n return
new Intl.DateTimeFormat(locale, options).format(date).replace(/[\u200e\u200f]/g, "");\n};\n\n/**\n * @param {?}
timezone\n * @return {?}
*\n\nfunction timeZoneGetter$1(timezone) {\n // To workaround `Intl` API restriction
for single timezone let format with 24 hours\n var /** @type {?} */ options = { hour: '2-digit', hour12: false,
timeZoneName: timezone };\n return function (date, locale) {\n var /** @type {?} */ result =
intlDateFormat(date, locale, options);\n // Then extract first 3 letters that related to hours\n return result ?
result.substring(3) : ""; }\n};\n\n/**\n * @param {?} options\n * @param {?} value\n * @return {?}
*\n\nfunction hour12Modify(options, value) {\n options.hour12 = value;\n return options;\n};\n\n/**\n * @param {?} prop\n *
@return {?}
*\n\nfunction digitCondition(prop, len) {\n var /** @type {?} */ result = {};\n result[prop] = len === 2 ? '2-digit' : 'numeric';\n return result;\n};\n\n/**\n * @param {?} prop\n * @param {?} len\n *
@return {?}
*\n\nfunction nameCondition(prop, len) {\n var /** @type {?} */ result = {};\n if (len < 4) {\n
result[prop] = len > 1 ? 'short' : 'narrow';\n } else {\n result[prop] = 'long';\n }\n return
result;\n};\n\n/**\n * @param {?} options\n * @return {?}
*\n\nfunction combine(options) {\n return
options.reduce(function (merged, opt) { return (__assign({}, merged, opt)); }, {});\n};\n\n/**\n * @param {?} ret\n *
@return {?}
*\n\nfunction datePartGetterFactory(ret) {\n return function (date, locale) { return
intlDateFormat(date, locale, ret); }\n};\n\nvar DATE_FORMATTER_CACHE = new Map();\n\n/**\n * @param {?}
format\n * @param {?} date\n * @param {?} locale\n * @return {?}
*\n\nfunction dateFormatter(format, date, locale) {\n var /** @type {?} */ fn = PATTERN_ALIASES[format];\n if (fn)\n return fn(date, locale);\n var /** @type {?} */ cacheKey = format;\n var /** @type {?} */ parts =
DATE_FORMATTER_CACHE.get(cacheKey);\n if (!parts) {\n parts = [];\n var /** @type {?} */ match
= void 0;\n DATE_FORMATS_SPLITS$1.exec(format);\n var /** @type {?} */ _format = format;\n while (_format) {\n
match = DATE_FORMATS_SPLITS$1.exec(_format);\n if (match) {\n
parts = parts.concat(match.slice(1));\n _format = /** @type {?} */ ((parts.pop()));\n } else {\n
parts.push(_format);\n _format = null;\n }\n }\n DATE_FORMATTER_CACHE.set(cacheKey, parts);\n }\n return parts.reduce(function (text, part) {\n var
/** @type {?} */ fn = DATE_FORMATS$1[part];\n return text + (fn ? fn(date, locale) : partToTime(part));\n },
"");\n};\n\n/**\n * @param {?} part\n * @return {?}
*\n\nfunction partToTime(part) {\n return part === "\\\\" ? "\\":
part.replace(/(^\$)/g, "").replace(/"/g, "\\");\n};\n\nvar DateFormatter = /** @class */ (function () {\n function
DateFormatter() {\n }\n /**\n * @param {?} date\n * @param {?} locale\n * @param {?} pattern\n *
@return {?}
*\n\nDateFormatter.format = /**\n * @param {?} date\n * @param {?} locale\n *
@return {?}
*\n\nfunction (date, locale, pattern) {\n return
dateFormatter(pattern, date, locale);\n }; return DateFormatter;\n})();\n\n/**\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n *\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE

```



file at <https://angular.io/license>

`@ngModule CommonModule`

`@whatItDoes` Formats a date according to locale rules.

`@howToUse`date_expression | date[:format]``

`@description`Where: - `expression` is a date object or a number (milliseconds since UTC epoch) or an ISO string``

(<https://www.w3.org/TR/NOTE-datetime>).

``format`` indicates which date/time components to include. The format can be predefined as shown below or custom as shown in the table.

``medium``: equivalent to ``yMMMMjms`` (e.g. ``Sep 3, 2010, 12:05:08 PM`` for ``en-US``)

``short``: equivalent to ``yMdjm`` (e.g. ``9/3/2010, 12:05 PM`` for ``en-US``)

``fullDate``: equivalent to ``yMMMMEEEEd`` (e.g. ``Friday, September 3, 2010`` for ``en-US``)

``longDate``: equivalent to ``yMMMMd`` (e.g. ``September 3, 2010`` for ``en-US``)

``mediumDate``: equivalent to ``yMMMM`` (e.g. ``Sep 3, 2010`` for ``en-US``)

``shortDate``: equivalent to ``yMd`` (e.g. ``9/3/2010`` for ``en-US``)

``mediumTime``: equivalent to ``jms`` (e.g. ``12:05:08 PM`` for ``en-US``)

``shortTime``: equivalent to ``jm`` (e.g. ``12:05 PM`` for ``en-US``)

Component	Symbol	Narrow	Short Form	Long Form	Numeric	2-digit
era	G	G (A)	GGG (AD)	GGGG (Anno Domini)		
year	y	y (15)	yy (15)	month	M	L (S)
month	M	MM (09)	MMM (Sep)	MMMM (September)		
day	d	d	dd (03)	weekday	E	E (S)
hour	j	j (13)	jj (13)	hour12	h	h (1 PM)
hour	H	HH (13)	hour24	H	H	H (13)
minute	m	m (5)	mm (05)	second	s	s (9)
second	s	ss (09)	timezone	Z	Z (GMT-8:00)	z (Pacific Standard Time)

In javascript, only the components specified will be respected (not the ordering, punctuations, ...) and details of the formatting will be dependent on the locale.

Timezone of the formatted text will be the local system timezone of the end-user's machine.

When the expression is a ISO string without time (e.g. 2016-09-19) the time zone offset is not applied and the formatted text will have the same day, month and year of the expression.

**WARNINGS:** - this pipe is marked as pure hence it will not be re-evaluated when the input is mutated. Instead users should treat the date as an immutable object and change the reference when the pipe needs to re-run (this is to avoid reformatting the date on every change detection run which would be an expensive operation).

- this pipe uses the Internationalization API. Therefore it is only reliable in Chrome and Opera browsers.

### Examples

Assuming `dateObj` is (year: 2010, month: 9, day: 3, hour: 12 PM, minute: 05, second: 08)` in the `_local_` time and locale is 'en-US`:`

```

@@example common/pipes/ts/date_pipe.ts
region='DeprecatedDatePipe'
@@stable
/nvar DeprecatedDatePipe = /** @class */ (function () {
function DeprecatedDatePipe(_locale) {
this._locale = _locale;
}
/** @param {?} value @param {?} pattern @return {?} */
/n DeprecatedDatePipe.prototype.transform = /** @param {?} value @param {?} pattern @return {?} */
/n function (value, pattern) {
if (pattern === void 0) { pattern = 'mediumDate'; }
if (value === null || value === "" || value !== value) return null;
var /** @type {?} */ date;
if (typeof value === 'string') {
value = value.trim();
if (isDate(value)) {
date = value;
}
else if (!isNaN(value - parseFloat(value))) {
date = new Date(parseFloat(value));
}
else if (typeof value === 'string' && /^(\d{4}-)\d{1,2}-\d{1,2}$/.test(value)) {
/**
* For ISO Strings without time the day, month and year must be extracted from the ISO String
* before Date creation to avoid time offset and errors in the new Date.
* If we only replace '-' with ',' in the ISO String ("2015,01,01"), and try to create a new date, some browsers (e.g. IE 9) will throw an invalid Date error
* If we leave the '-' ("2015-01-01") and try to create a new Date("2015-01-01") the timeoffset is applied
* Note: ISO months are 0 for January, 1 for February, ...
*/
var _a = value.split('-').map(function (val) { return parseInt(val, 10); });
y = _a[0], m = _a[1], d = _a[2];
date = new Date(y, m - 1, d);
}
else {
date = new Date(value);
}
if (!isDate(date)) {
var /** @type {?} */ match = void 0;
if ((typeof value === 'string') && (match = value.match(ISO8601_DATE_REGEX))) {
date =

```

```

isoStringToDate(match);\n }\n else {\n throw
invalidPipeArgumentError(DeprecatedDatePipe, value);\n }\n }\n return DateFormatter.format(date,
this._locale, DeprecatedDatePipe._ALIASES[pattern] || pattern);\n };\n /**\n * \@internal\n */\n DeprecatedDatePipe._ALIASES = {\n 'medium': 'yMMMdjms',\n 'short': 'yMdj',\n 'fullDate':
'yMMMMEEEEd',\n 'longDate': 'yMMMMd',\n 'mediumDate': 'yMMMd',\n 'shortDate': 'yMd',\n
'mediumTime': 'jms',\n 'shortTime': 'jm'\n };\n DeprecatedDatePipe.decorators = [\n { type: Pipe, args:
[{\n name: 'date',\n pure: true\n },\n],\n];\n /** @nocollapse */\n DeprecatedDatePipe.ctorParameters = function () {\n
return [\n { type: undefined, decorators: [{ type: Inject, args: [LOCALE_ID,] },\n],\n];\n }\n return
DeprecatedDatePipe;\n };\n /**\n * \@param {?} value\n * \@return {?}\n */\n function isDate(value) {\n return
value instanceof Date && !isNaN(value.valueOf());\n }\n /**\n * \@fileoverview added by tsickle\n * \@suppress
{checkTypes} checked by tsc\n * \@license\n * Copyright Google Inc. All Rights Reserved.\n * Use of
this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n */\n var NUMBER_FORMAT_REGEXP = /^(\\d+)?\\.((\\d+)(-?(\\d+))?)?$/;\n var
MAX_DIGITS = 22;\n var DECIMAL_SEP = '.';\n var ZERO_CHAR = '0';\n var PATTERN_SEP = ',';\n var
GROUP_SEP = ',';\n var DIGIT_CHAR = '#';\n var CURRENCY_CHAR = '¤';\n var PERCENT_CHAR = '%';\n /**\n * Transform a number to a locale string based on a style and a format\n */\n /**\n * \@internal\n * \@param {?} value\n *
*\n * \@param {?} locale\n * *\n * \@param {?} style\n * *\n * \@param {?=} digitsInfo\n * *\n * \@param {?=} currency\n * *\n * \@return
{?}\n */\n function formatNumber$1(value, locale, style, digitsInfo, currency) {\n if (currency === void 0) {\n
currency = null;\n }\n var /** @type {?} */ res = {\n str: null\n };\n var /** @type {?} */ format =
getLocaleNumberFormat(locale, style);\n var /** @type {?} */ num;\n // Convert strings to numbers\n if
(typeof value === 'string' && !isNaN(+value - parseFloat(value))) {\n num = +value;\n }\n else if (typeof
value !== 'number') {\n res.error = value + ' is not a number';\n return res;\n }\n else {\n num =
value;\n }\n var /** @type {?} */ pattern = parseNumberFormat(format, getLocaleNumberSymbol(locale,
NumberSymbol.MinusSign));\n var /** @type {?} */ formattedText = '';\n var /** @type {?} */ isZero = false;\n if
(!isFinite(num)) {\n formattedText = getLocaleNumberSymbol(locale, NumberSymbol.Infinity);\n }\n else {\n var /** @type {?} */ parsedNumber = parseNumber(num);\n if (style ===
NumberFormatStyle.Percent) {\n parsedNumber = toPercent(parsedNumber);\n }\n var /** @type
{?} */ minInt = pattern.minInt;\n var /** @type {?} */ minFraction = pattern.minFrac;\n var /** @type {?} */
maxFraction = pattern.maxFrac;\n if (digitsInfo) {\n var /** @type {?} */ parts =
digitsInfo.match(NUMBER_FORMAT_REGEXP);\n if (parts === null) {\n res.error = digitsInfo +
' is not a valid digit info';\n return res;\n }\n var /** @type {?} */ minIntPart = parts[1];\n var
/** @type {?} */ minFractionPart = parts[3];\n var /** @type {?} */ maxFractionPart = parts[5];\n if (minIntPart !== null) {\n minInt = parseIntAutoRadix(minIntPart);\n }\n if
(minFractionPart !== null) {\n minFraction = parseIntAutoRadix(minFractionPart);\n }\n if
(maxFractionPart !== null) {\n maxFraction = parseIntAutoRadix(maxFractionPart);\n }\n else
if (minFractionPart !== null && minFraction > maxFraction) {\n maxFraction = minFraction;\n }\n }\n roundNumber(parsedNumber, minFraction, maxFraction);\n var /** @type {?} */ digits =
parsedNumber.digits;\n var /** @type {?} */ integerLen = parsedNumber.integerLen;\n var /** @type {?} */
exponent = parsedNumber.exponent;\n var /** @type {?} */ decimals = [];\n isZero =
digits.every(function (d) { return !d; });\n // pad zeros for small numbers\n for (; integerLen < minInt;\n integerLen++) {\n digits.unshift(0);\n }\n // pad zeros for small numbers\n for (; integerLen < 0;\n integerLen++) {\n digits.unshift(0);\n }\n // extract decimals\n digits\n if (integerLen > 0) {\n decimals = digits.splice(integerLen, digits.length);\n }\n else {\n decimals = digits;\n digits =
[0];\n }\n // format the integer digits with grouping separators\n var /** @type {?} */ groups = [];\n if (digits.length >= pattern.lgSize) {\n groups.unshift(digits.splice(-pattern.lgSize, digits.length).join(''));\n }\n while (digits.length > pattern.gSize) {\n groups.unshift(digits.splice(-pattern.gSize,\n digits.length).join(''));\n }\n if (digits.length) {\n groups.unshift(digits.join(''));\n }\n var /**
@type {?} */ groupSymbol = currency ? NumberSymbol.CurrencyGroup : NumberSymbol.Group;\n }

```

```

formattedText = groups.join(getLocaleNumberSymbol(locale, groupSymbol));\n // append the decimal digits\n if (decimals.length) {\n var /** @type {?} */ decimalSymbol = currency ?\n NumberSymbol.CurrencyDecimal : NumberSymbol.Decimal;\n formattedText +=\n getLocaleNumberSymbol(locale, decimalSymbol) + decimals.join(");\n }\n if (exponent) {\n formattedText += getLocaleNumberSymbol(locale, NumberSymbol.Exponential) + '+' + exponent;\n }\n}\n\nif (num < 0 && !isZero) {\n formattedText = pattern.negPre + formattedText + pattern.negSuf;\n}\n else\n{\n formattedText = pattern.posPre + formattedText + pattern.posSuf;\n}\n\nif (style ===\nNumberFormatStyle.Currency && currency !== null) {\n res.str = formattedText\n .replace(CURRENCY_CHAR, currency)\n .replace(CURRENCY_CHAR, ");\n return res;\n}\n\nif\n(style === NumberFormatStyle.Percent) {\n res.str = formattedText.replace(new RegExp(PERCENT_CHAR,\n'g'), getLocaleNumberSymbol(locale, NumberSymbol.PercentSign));\n return res;\n}\n\nres.str =\nformattedText;\nreturn res;\n}\n\n/** @type {?} */ @param {?} format\n * @param {?} = minusSign\n * @return {?} *\n *\nfunction parseNumberFormat(format, minusSign) {\n if (minusSign === void 0) { minusSign = '-'; }\n var\n /** @type {?} */ p = {\n minInt: 1,\n minFrac: 0,\n maxFrac: 0,\n posPre: ",\n posSuf: ",\n negPre: ",\n negSuf: ",\n gSize: 0,\n lgSize: 0\n }; \n var /** @type {?} */ patternParts =\n format.split(PATTERN_SEP);\n var /** @type {?} */ positive = patternParts[0];\n var /** @type {?} */\n negative = patternParts[1];\n var /** @type {?} */ positiveParts = positive.indexOf(DECIMAL_SEP) !== -1 ?\n positive.split(DECIMAL_SEP) :\n [\n positive.substring(0, positive.lastIndexOf(ZERO_CHAR) + 1),\n positive.substring(positive.lastIndexOf(ZERO_CHAR) + 1)\n], /** @type {?} */ integer =\n positiveParts[0], /** @type {?} */ fraction = positiveParts[1] || ";\n p.posPre = integer.substr(0,\ninteger.indexOf(DIGIT_CHAR));\n for (var /** @type {?} */ i = 0; i < fraction.length; i++) {\n var /** @type\n {?} */ ch = fraction.charAt(i);\n if (ch === ZERO_CHAR) {\n p.minFrac = p.maxFrac = i + 1;\n }\n else if (ch === DIGIT_CHAR) {\n p.maxFrac = i + 1;\n }\n else {\n p.posSuf += ch;\n }\n }\n var /** @type {?} */ groups = integer.split(GROUP_SEP);\n p.gSize = groups[1] ? groups[1].length :\n 0;\n p.lgSize = (groups[2] || groups[1]) ? (groups[2] || groups[1]).length : 0;\n if (negative) {\n var /** @type\n {?} */ trunkLen = positive.length - p.posPre.length - p.posSuf.length, /** @type {?} */\n pos =\n negative.indexOf(DIGIT_CHAR);\n p.negPre = negative.substr(0, pos).replace(/g, ");\n p.negSuf =\n negative.substr(pos + trunkLen).replace(/g, ");\n }\n else {\n p.negPre = minusSign + p.posPre;\n p.negSuf = p.posSuf;\n }\n return p;\n}\n\n/** @type {?} */ @param {?} parsedNumber\n * @return {?} *\n *\nfunction\n toPercent(parsedNumber) {\n // if the number is 0, don't do anything\n if (parsedNumber.digits[0] === 0) {\n return parsedNumber;\n }\n // Getting the current number of decimals\n var /** @type {?} */ fractionLen =\n parsedNumber.digits.length - parsedNumber.integerLen;\n if (parsedNumber.exponent) {\n parsedNumber.exponent += 2;\n }\n else {\n if (fractionLen === 0) {\n parsedNumber.digits.push(0,\n0);\n }\n else if (fractionLen === 1) {\n parsedNumber.digits.push(0);\n }\n parsedNumber.integerLen += 2;\n }\n return parsedNumber;\n}\n\n/** @type {?} */ Parses a number.\n * Significant bits of\n this parse algorithm came from https://github.com/MikeMcl/big.js\n * @param {?} num\n * @return {?} *\n *\nfunction\n parseNumber(num) {\n var /** @type {?} */ numStr = Math.abs(num) + ";\n var /** @type {?} */\n exponent = 0, /** @type {?} */ digits, /** @type {?} */ integerLen;\n var /** @type {?} */ i, /** @type {?} */ j,\n /** @type {?} */ zeros;\n // Decimal point?\n if ((integerLen = numStr.indexOf(DECIMAL_SEP)) > -1) {\n numStr = numStr.replace(DECIMAL_SEP, ");\n }\n // Exponential form?\n if ((i = numStr.search(/e/i)) > 0)\n {\n // Work out the exponent.\n if (integerLen < 0)\n integerLen = i;\n integerLen +=\n +numStr.slice(i + 1);\n numStr = numStr.substring(0, i);\n }\n else if (integerLen < 0) {\n // There was\n no decimal point or exponent so it is an integer.\n integerLen = numStr.length;\n }\n // Count the number of\n leading zeros.\n for (i = 0; numStr.charAt(i) === ZERO_CHAR; i++) {\n /* empty *\n */\n }\n if (i ===\n (zeros = numStr.length)) {\n // The digits are all zero.\n digits = [0];\n integerLen = 1;\n }\n else {\n // Count the number of trailing zeros\n zeros--;\n while (numStr.charAt(zeros) === ZERO_CHAR)\n zeros--;\n // Trailing zeros are insignificant so ignore them\n integerLen -= i;\n digits = [];\n //\n Convert string to array of digits without leading/trailing zeros.\n for (j = 0; i <= zeros; i++, j++) {\n

```

```

digits[j] = +numStr.charAt(i);\n }\n }\n // If the number overflows the maximum allowed digits then use an
exponent.\n if (integerLen > MAX_DIGITS) {\n digits = digits.splice(0, MAX_DIGITS - 1);\n exponent
= integerLen - 1;\n integerLen = 1;\n }\n return { digits: digits, exponent: exponent, integerLen: integerLen
};\n}\n\n/**\n * Round the parsed number to the specified number of decimal places\n * This function changes the
parsedNumber in-place\n * @param {?} parsedNumber\n * @param {?} minFrac\n * @param {?} maxFrac\n *
@return {?} */\nfunction roundNumber(parsedNumber, minFrac, maxFrac) {\n if (minFrac > maxFrac) {\n
throw new Error("The minimum number of digits after fraction (" + minFrac + ") is higher than the maximum ("
+ maxFrac + ").");\n }\n var /** @type {?} */ digits = parsedNumber.digits;\n var /** @type {?} */
fractionLen = digits.length - parsedNumber.integerLen;\n var /** @type {?} */ fractionSize =
Math.min(Math.max(minFrac, fractionLen), maxFrac);\n // The index of the digit to where rounding is to occur\n
var /** @type {?} */ roundAt = fractionSize + parsedNumber.integerLen;\n var /** @type {?} */ digit =
digits[roundAt];\n if (roundAt > 0) {\n // Drop fractional digits beyond `roundAt`\n
digits.splice(Math.max(parsedNumber.integerLen, roundAt));\n // Set non-fractional digits beyond `roundAt` to
0\n for (var /** @type {?} */ j = roundAt; j < digits.length; j++) {\n digits[j] = 0;\n }\n }
else {\n // We rounded to zero so reset the parsedNumber\n fractionLen = Math.max(0, fractionLen);\n
parsedNumber.integerLen = 1;\n digits.length = Math.max(1, roundAt - fractionSize + 1);\n digits[0] = 0;\n
 for (var /** @type {?} */ i = 1; i < roundAt; i++)\n digits[i] = 0;\n }\n if (digit >= 5) {\n if
(roundAt - 1 < 0) {\n for (var /** @type {?} */ k = 0; k > roundAt; k--) {\n digits.unshift(0);\n
 parsedNumber.integerLen++;\n }\n digits.unshift(1);\n parsedNumber.integerLen++;\n
 }\n else {\n digits[roundAt - 1]++;\n }\n }\n // Pad out with zeros to get the required fraction
length\n for (; fractionLen < Math.max(0, fractionSize); fractionLen++)\n digits.push(0);\n var /** @type
 {?} */ dropTrailingZeros = fractionSize !== 0;\n // Minimal length = nb of decimals required + current nb of
integers\n // Any number besides that is optional and can be removed if it's a trailing 0\n var /** @type {?} */
minLen = minFrac + parsedNumber.integerLen;\n // Do any carrying, e.g. a digit was rounded up to 10\n var /**
@type {?} */ carry = digits.reduceRight(function (carry, d, i, digits) {\n d = d + carry;\n digits[i] = d < 10 ?
d : d - 10; // d % 10\n if (dropTrailingZeros) {\n // Do not keep meaningless fractional trailing zeros (e.g.
15.52000 --> 15.52)\n if (digits[i] === 0 && i >= minLen) {\n digits.pop();\n }\n }
else {\n dropTrailingZeros = false;\n }\n return d >= 10 ? 1 : 0; // Math.floor(d / 10);\n },
0);\n if (carry) {\n digits.unshift(carry);\n parsedNumber.integerLen++;\n }\n }\n}\n\n/**\n *
@param {?} text\n * @return {?} */\nfunction parseIntAutoRadix(text) {\n var /** @type {?} */ result =
parseInt(text);\n if (isNaN(result)) {\n throw new Error('Invalid integer literal when parsing ' + text);\n }\n
return result;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n *
 * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n/**\n * @param {?} pipe\n * @param {?} locale\n * @param {?} value\n * @param {?} style\n * @param {?=} digits\n * @param {?=}
currency\n * @param {?=} currencyAsSymbol\n * @return {?} */\nfunction formatNumber(pipe, locale, value,
style, digits, currency, currencyAsSymbol) {\n if (currency === void 0) { currency = null; }\n if
(currencyAsSymbol === void 0) { currencyAsSymbol = false; }\n if (value == null)\n return null;\n //
Convert strings to numbers\n value = typeof value === 'string' && !isNaN(+value - parseFloat(value)) ? +value :
value;\n if (typeof value !== 'number') {\n throw invalidPipeArgumentError(pipe, value);\n }\n var /**
@type {?} */ minInt;\n var /** @type {?} */ minFraction;\n var /** @type {?} */ maxFraction;\n if (style !==
NumberFormatStyle.Currency) {\n // rely on Intl default for currency\n minInt = 1;\n minFraction =
0;\n maxFraction = 3;\n }\n if (digits) {\n var /** @type {?} */ parts =
digits.match(NUMBER_FORMAT_REGEXP);\n if (parts === null) {\n throw new Error(digits + '\n is
not a valid digit info for number pipes');\n }\n if (parts[1] != null) {\n // min integer digits\n
minInt = parseIntAutoRadix(parts[1]);\n }\n if (parts[3] != null) {\n // min fraction digits\n
minFraction = parseIntAutoRadix(parts[3]);\n }\n if (parts[5] != null) {\n // max fraction digits\n
maxFraction = parseIntAutoRadix(parts[5]);\n }\n }\n return NumberFormatter.format(/** @type {?} */

```

(value), locale, style, {  
 minimumIntegerDigits: minInt,  
 minimumFractionDigits: minFraction,  
 maximumFractionDigits: maxFraction,  
 currency: currency,  
 currencyAsSymbol: currencyAsSymbol,  
 });  
 @ngModule CommonModule  
 @whatItDoes Formats a number according to locale rules.  
 @howToUse `number\_expression | number[:digitInfo]`  
 Formats a number as text. Group sizing and separator and other locale-specific configurations are based on the active locale where `expression` is a number. `digitInfo` is a `string` which has a following format:   
 <code>{minIntegerDigits}.{minFractionDigits}-{maxFractionDigits}</code>  
 `minIntegerDigits` is the minimum number of integer digits to use. Defaults to `1`.  
 `minFractionDigits` is the minimum number of digits after fraction. Defaults to `0`.  
 `maxFractionDigits` is the maximum number of digits after fraction. Defaults to `3`.  
 For more information on the acceptable range for each of these numbers and other details see your native internationalization library.  
 WARNING: this pipe uses the Internationalization API which is not yet available in all browsers and may require a polyfill. See [Browser Support](guide/browser-support) for details.  
 ### Example  
 @example common/pipes/ts/number\_pipe.ts  
 region='DeprecatedNumberPipe'  
 @stable nvar DeprecatedDecimalPipe = /\*\* @class \*/ (function ()  
 {  
 function DeprecatedDecimalPipe(\_locale) {  
 this.\_locale = \_locale;  
 }  
 /\*\* @param {?} value  
 @param {?=} digits  
 @return {?} \*/  
 ^n DeprecatedDecimalPipe.prototype.transform = /\*\*  
 @param {?} value  
 @param {?=} digits  
 @return {?} \*/  
 function (value, digits) {  
 return formatNumber(DeprecatedDecimalPipe, this.\_locale, value, NumberFormatStyle.Decimal, digits);  
 };  
 DeprecatedDecimalPipe.decorators = [  
 { type: Pipe, args: [{ name: 'number' }, ] },  
 ];  
 /\*\* @nocollapse \*/  
 DeprecatedDecimalPipe.ctorParameters = function () { return [  
 { type: undefined, decorators: [{ type: Inject, args: [LOCALE\_ID, ] }, ] },  
 ]; };  
 return DeprecatedDecimalPipe; }());  
 @ngModule CommonModule  
 @whatItDoes Formats a number as a percentage according to locale rules.  
 @howToUse `number\_expression | percent[:digitInfo]`  
 Formats a number as percentage.  
 `digitInfo` See {@link DecimalPipe} for detailed description.  
 WARNING: this pipe uses the Internationalization API which is not yet available in all browsers and may require a polyfill. See [Browser Support](guide/browser-support) for details.  
 ### Example  
 @example common/pipes/ts/percent\_pipe.ts  
 region='DeprecatedPercentPipe'  
 @stable nvar  
 DeprecatedPercentPipe = /\*\* @class \*/ (function () {  
 function DeprecatedPercentPipe(\_locale) {  
 this.\_locale = \_locale;  
 }  
 /\*\* @param {?} value  
 @param {?=} digits  
 @return {?} \*/  
 ^n  
 DeprecatedPercentPipe.prototype.transform = /\*\*  
 @param {?} value  
 @param {?=} digits  
 @return {?} \*/  
 function (value, digits) {  
 return formatNumber(DeprecatedPercentPipe, this.\_locale, value, NumberFormatStyle.Percent, digits);  
 };  
 DeprecatedPercentPipe.decorators = [  
 { type: Pipe, args: [{ name: 'percent' }, ] },  
 ];  
 /\*\* @nocollapse \*/  
 DeprecatedPercentPipe.ctorParameters = function () { return [  
 { type: undefined, decorators: [{ type: Inject, args: [LOCALE\_ID, ] }, ] },  
 ]; };  
 return  
 DeprecatedPercentPipe; }());  
 @ngModule CommonModule  
 @whatItDoes Formats a number as currency using locale rules.  
 @howToUse `number\_expression | currency[:currencyCode[:symbolDisplay[:digitInfo]]]`  
 Use `currency` to format a number as currency.  
 `currencyCode` is the [ISO 4217](https://en.wikipedia.org/wiki/ISO\_4217) currency code, such as `USD` for the US dollar and `EUR` for the euro.  
 `symbolDisplay` is a boolean indicating whether to use the currency symbol or code.  
 `true`: use symbol (e.g. `\$`), `false` (default): use code (e.g. `USD`),  
 `digitInfo` See {@link DecimalPipe} for detailed description.  
 WARNING: this pipe uses the Internationalization API which is not yet available in all browsers and may require a polyfill. See [Browser Support](guide/browser-support) for details.  
 ### Example  
 @example common/pipes/ts/currency\_pipe.ts  
 region='DeprecatedCurrencyPipe'  
 @stable nvar  
 DeprecatedCurrencyPipe = /\*\* @class \*/ (function () {  
 function DeprecatedCurrencyPipe(\_locale) {  
 this.\_locale = \_locale;  
 }  
 /\*\* @param {?} value  
 @param {?=} currencyCode  
 @param {?=} symbolDisplay  
 @param {?=} digits  
 @return {?} \*/  
 ^n  
 DeprecatedCurrencyPipe.prototype.transform = /\*\*  
 @param {?} value  
 @param {?=} currencyCode



```

 }
 this._latestReturnedValue = this._latestValue;
 return this._latestValue;
 }
 if (obj !== this._obj) {
 this._dispose();
 return this.transform(** @type {?} */ (obj));
 }
 if (this._latestValue === this._latestReturnedValue) {
 return this._latestReturnedValue;
 }
 this._latestReturnedValue = this._latestValue;
 return WrappedValue.wrap(this._latestValue);
};
/**
 * @param {?} obj
 * @return {?}
 */
AsyncPipe.prototype._subscribe = /**
 * @param {?} obj
 * @return {?}
 */
function (obj) {
 var _this = this;
 this._obj = obj;
 this._strategy = this._selectStrategy(obj);
 this._subscription = this._strategy.createSubscription(obj, function (value) {
 return _this._updateLatestValue(obj, value);
 });
};
/**
 * @param {?} obj
 * @return {?}
 */
AsyncPipe.prototype._selectStrategy = /**
 * @param {?} obj
 * @return {?}
 */
function (obj) {
 if (isPromise(obj)) {
 return _promiseStrategy;
 }
 if (isObservable(obj)) {
 return _observableStrategy;
 }
 throw invalidPipeArgumentError(AsyncPipe, obj);
};
/**
 * @return {?}
 */
AsyncPipe.prototype._dispose = /**
 * @return {?}
 */
function () {
 this._strategy.dispose(** @type {?} */ ((this._subscription)));
 this._latestValue = null;
 this._latestReturnedValue = null;
 this._subscription = null;
 this._obj = null;
};
/**
 * @param {?} async
 * @param {?} value
 * @return {?}
 */
AsyncPipe.prototype._updateLatestValue = /**
 * @param {?} async
 * @param {?} value
 * @return {?}
 */
function (async, value) {
 if (async === this._obj) {
 this._latestValue = value;
 this._ref.markForCheck();
 }
};
AsyncPipe.decorators = [
 { type: Pipe, args: [{ name: 'async', pure: false }] },
];
/** @nocollapse */
AsyncPipe.ctorParameters = function () {
 return [
 { type: ChangeDetectorRef },
];
};
return AsyncPipe;
})();
/n/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 */
/n/**
 * @license
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 * found in the LICENSE file at
 * https://angular.io/license
 */
/n/**
 * Transforms text to lowercase.
 */
/n * @@example
common/pipes/ts/lowerupper_pipe.ts region='LowerUpperPipe'
/n * @@stable
/n * @nvar LowerCasePipe = /**
 * @class */ (function () {
 function LowerCasePipe() {}
 /**
 * @param {?} value
 * @return {?}
 */
 LowerCasePipe.prototype.transform = /**
 * @param {?} value
 * @return {?}
 */
 function (value) {
 if (!value) {
 return value;
 }
 if (typeof value !== 'string') {
 throw invalidPipeArgumentError(LowerCasePipe, value);
 }
 return value.toLowerCase();
 };
 LowerCasePipe.decorators = [
 { type: Pipe, args: [{ name: 'lowercase' }] },
];
 /** @nocollapse */
 LowerCasePipe.ctorParameters = function () {
 return [];
 };
 return LowerCasePipe;
})();
/n/**
 * Helper method to transform a single word to titlecase.
 */
/n * @@stable
/n * @param {?} word
/n * @return {?}
/n * @function titleCaseWord(word)
/n * if (!word) {
 return word;
}
/n * return word[0].toUpperCase() + word.substr(1).toLowerCase();
/n/n/**
 * Transforms text to titlecase.
 */
/n * @@stable
/n * @nvar TitleCasePipe = /**
 * @class */ (function () {
 function TitleCasePipe() {}
 /**
 * @param {?} value
 * @return {?}
 */
 TitleCasePipe.prototype.transform = /**
 * @param {?} value
 * @return {?}
 */
 function (value) {
 if (!value) {
 return value;
 }
 if (typeof value !== 'string') {
 throw invalidPipeArgumentError(TitleCasePipe, value);
 }
 return value.split(/\b/g).map(function (word) {
 return titleCaseWord(word);
 }).join("");
 };
 TitleCasePipe.decorators = [
 { type: Pipe, args: [{ name: 'titlecase' }] },
];
 /** @nocollapse */
 TitleCasePipe.ctorParameters = function () {
 return [];
 };
 return TitleCasePipe;
})();
/n/**
 * Transforms text to uppercase.
 */
/n * @@stable
/n * @nvar UpperCasePipe = /**
 * @class */ (function () {
 function UpperCasePipe() {}
 /**
 * @param {?} value
 * @return {?}
 */
 UpperCasePipe.prototype.transform = /**
 * @param {?} value
 * @return {?}
 */
 function (value) {
 if (!value) {
 return value;
 }
 if (typeof value !== 'string') {
 throw invalidPipeArgumentError(UpperCasePipe, value);
 }
 return value.toUpperCase();
 };
 UpperCasePipe.decorators = [
 { type: Pipe, args: [{ name: 'uppercase' }] },
];
 /** @nocollapse */
 UpperCasePipe.ctorParameters = function () {
 return [];
 };
 return UpperCasePipe;
})();
/n/n/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 */
/n/**
 * @license
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```

```

found in the LICENSE file at https://angular.io/license\n *
\nvar _INTERPOLATION_REGEXP = /#;g;\n/**\n *
\n@ngModule CommonModule\n *
\n@whatItDoes Maps a value to a string that pluralizes the value according to
locale rules.\n *
\n@howToUse `expression | i18nPlural:mapping[:locale]`\n *
\n@description\n *
\n * Where:\n *
\n * - `expression` is a number.\n *
\n * - `mapping` is an object that mimics the ICU format, see\n *
\n * http://userguide.icu-project.org/formatparse/messages\n *
\n * - `locale` is a `string` defining the locale to use (uses the current {\n@link
LOCALE_ID} by\n *
\n * default)\n *
\n * ## Example\n *
\n * {\n@example common/pipes/ts/i18n_pipe.ts
region='I18nPluralPipeComponent'}\n *
\n * {\n@experimental\n *
\n * \nvar I18nPluralPipe = /** @class */ (function ()
{\n *
\n * function I18nPluralPipe(_localization) {\n *
\n * this._localization = _localization;\n *
\n * }\n *
\n * /**\n *
\n * @param {?} value\n *
\n * @param {?} pluralMap\n *
\n * @param {?=} locale\n *
\n * @return {?}\n *
\n * }\n *
\n * I18nPluralPipe.prototype.transform = /**\n *
\n * @param {?} value\n *
\n * @param {?} pluralMap\n *
\n * @param {?=} locale\n *
\n * @return {?}\n *
\n * }\n *
\n * function (value, pluralMap, locale) {\n *
\n * if (value == null)\n *
\n * return '';\n *
\n * if (typeof pluralMap !== 'object' || pluralMap === null) {\n *
\n * throw
\n *
\n * invalidPipeArgumentError(I18nPluralPipe, pluralMap);\n *
\n * }\n *
\n * var /** @type {?} */ key =
\n *
\n * getPluralCategory(value, Object.keys(pluralMap), this._localization, locale);\n *
\n * return
\n *
\n * pluralMap[key].replace(_INTERPOLATION_REGEXP, value.toString());\n *
\n * };\n *
\n * I18nPluralPipe.decorators =
\n *
\n * [\n *
\n * { type: Pipe, args: [{ name: 'i18nPlural', pure: true },],\n *
\n * },\n *
\n *];\n *
\n * /** @nocollapse */\n *
\n * I18nPluralPipe.ctorParameters = function () { return [\n *
\n * { type: NgLocalization, },\n *
\n *]; }; \n *
\n * return
\n *
\n * I18nPluralPipe; }\n *
\n * ());\n *
\n * \n\n/**\n *
\n * @fileoverview added by tsickle\n *
\n * @suppress {checkTypes} checked by tsc\n *
\n * \n\n/**\n *
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\n * found in the LICENSE file at https://angular.io/license\n *
\n * \n\n/**\n *
\n *
\n * \n@ngModule CommonModule\n *
\n *
\n * \n@whatItDoes Generic selector that displays the string that matches the current
value.\n *
\n *
\n * \n@howToUse `expression | i18nSelect:mapping`\n *
\n *
\n * \n@description\n *
\n *
\n * Where `mapping` is an
\n *
\n * object that indicates the text that should be displayed\n *
\n * for different values of the provided `expression`.\n *
\n * If
\n *
\n * none of the keys of the mapping match the value of the `expression`, then the content\n *
\n * of the `other` key is
\n *
\n * returned when present, otherwise an empty string is returned.\n *
\n * ## Example\n *
\n * {\n@example
\n *
\n * common/pipes/ts/i18n_pipe.ts region='I18nSelectPipeComponent'}\n *
\n *
\n * {\n@experimental\n *
\n * \nvar
\n *
\n * I18nSelectPipe = /** @class */ (function () {\n *
\n * function I18nSelectPipe() {\n *
\n * }\n *
\n * /**\n *
\n * @param {?}
\n *
\n * value\n *
\n * @param {?} mapping\n *
\n * @return {?}\n *
\n * }\n *
\n * I18nSelectPipe.prototype.transform = /**\n *
\n * @param {?}
\n *
\n * value\n *
\n * @param {?} mapping\n *
\n * @return {?}\n *
\n * }\n *
\n * function (value, mapping) {\n *
\n * if
\n *
\n * (value == null)\n *
\n * return '';\n *
\n * if (typeof mapping !== 'object' || typeof value !== 'string') {\n *
\n * throw
\n *
\n * invalidPipeArgumentError(I18nSelectPipe, mapping);\n *
\n * }\n *
\n * if (mapping.hasOwnProperty(value)) {\n *
\n * return
\n *
\n * mapping[value];\n *
\n * }\n *
\n * if (mapping.hasOwnProperty('other')) {\n *
\n * return
\n *
\n * mapping['other'];\n *
\n * }\n *
\n * return '';\n *
\n * };\n *
\n * I18nSelectPipe.decorators = [\n *
\n * { type: Pipe, args: [{ name: 'i18nSelect', pure: true
\n *
\n * },],\n *
\n * },\n *
\n *];\n *
\n * /** @nocollapse */\n *
\n * I18nSelectPipe.ctorParameters = function () { return []; }; \n *
\n * return
\n *
\n * I18nSelectPipe; }\n *
\n * ());\n *
\n * \n\n/**\n *
\n * @fileoverview added by tsickle\n *
\n * @suppress {checkTypes} checked by tsc\n *
\n * \n\n/**\n *
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\n * found in the LICENSE file at https://angular.io/license\n *
\n * \n\n/**\n *
\n *
\n * \n@ngModule CommonModule\n *
\n *
\n * \n@whatItDoes Converts value into JSON string.\n *
\n *
\n * \n@howToUse `expression
\n *
\n * | json`\n *
\n *
\n * \n@description\n *
\n *
\n * Converts value into string using `JSON.stringify`. Useful for debugging.\n *
\n * ##
\n *
\n * Example\n *
\n * {\n@example common/pipes/ts/json_pipe.ts region='JsonPipe'}\n *
\n *
\n * {\n@stable\n *
\n * \nvar
\n *
\n * JsonPipe = /** @class */ (function () {\n *
\n * function JsonPipe() {\n *
\n * }\n *
\n * /**\n *
\n * @param {?}
\n *
\n * value\n *
\n * @return {?}\n *
\n * }\n *
\n * JsonPipe.prototype.transform = /**\n *
\n * @param {?}
\n *
\n * value\n *
\n * @return {?}\n *
\n * }\n *
\n * function (value) { return JSON.stringify(value, null, 2); }; \n *
\n * JsonPipe.decorators = [\n *
\n * { type: Pipe, args: [{
\n *
\n * name: 'json', pure: false },],\n *
\n * },\n *
\n *];\n *
\n * /** @nocollapse */\n *
\n * JsonPipe.ctorParameters = function () { return []
\n *
\n * }; \n *
\n * return
\n *
\n * JsonPipe; }\n *
\n * ());\n *
\n * \n\n/**\n *
\n * @fileoverview added by tsickle\n *
\n * @suppress {checkTypes} checked by
\n *
\n * tsc\n *
\n * \n\n/**\n *
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\n * found in the LICENSE file at https://angular.io/license\n *
\n * \n\n/**\n *
\n *
\n * \n@ngModule CommonModule\n *
\n *
\n * \n@whatItDoes Formats a number according to locale rules.\n *
\n *
\n * \n@howToUse

```



`number_expression | number[:digitInfo[:locale]]`` Formats a number as text. Group sizing and separator and other locale-specific configurations are based on the active locale. where `expression` is a number. `digitInfo` is a string which has a following format: `<br>{minIntegerDigits}.{minFractionDigits}-{maxFractionDigits}</code> minIntegerDigits is the minimum number of integer digits to use. Defaults to 1. minFractionDigits is the minimum number of digits after fraction. Defaults to 0. maxFractionDigits is the maximum number of digits after fraction. Defaults to 3. locale is a string defining the locale to use (uses the current LOCALE_ID by default). For more information on the acceptable range for each of these numbers and other details see your native internationalization library.`

**Example**

```

@stable nvar DecimalPipe = /** @class */ (function () {
 function DecimalPipe(_locale) {
 this._locale = _locale;
 }
 /** @param {?} value @param {?=} digits @param {?=} locale @return {?} */
 DecimalPipe.prototype.transform = /** @param {?} value @param {?=} digits @param {?=} locale @return {?} */ function (value, digits, locale) {
 if (isEmpty(value)) return null;
 locale = locale || this._locale;
 var _a = formatNumber$1(value, locale, NumberFormatStyle.Decimal, digits), str = _a.str, error = _a.error;
 if (error) {
 throw invalidPipeArgumentError(DecimalPipe, error);
 }
 return str;
 };
 DecimalPipe.decorators = [
 { type: Pipe, args: [{ name: 'number' },]],
];
 /** @nocollapse */
 DecimalPipe.ctorParameters = function () {
 return [
 { type: undefined, decorators: [{ type: Inject, args: [LOCALE_ID,] },] },
];
 };
 return DecimalPipe;
})();
*/
@ngModule CommonModule
@whatItDoes Formats a number as a percentage according to locale rules.
@howToUse `number_expression | percent[:digitInfo[:locale]]`
@description Formats a number as percentage. - digitInfo See @link DecimalPipe for detailed description. - locale is a string defining the locale to use (uses the current LOCALE_ID by default).
Example
@stable nvar PercentPipe = /** @class */ (function () {
 function PercentPipe(_locale) {
 this._locale = _locale;
 }
 /** @param {?} value @param {?=} digits @param {?=} locale @return {?} */
 PercentPipe.prototype.transform = /** @param {?} value @param {?=} digits @param {?=} locale @return {?} */ function (value, digits, locale) {
 if (isEmpty(value)) return null;
 locale = locale || this._locale;
 var _a = formatNumber$1(value, locale, NumberFormatStyle.Percent, digits), str = _a.str, error = _a.error;
 if (error) {
 throw invalidPipeArgumentError(PercentPipe, error);
 }
 return str;
 };
 PercentPipe.decorators = [
 { type: Pipe, args: [{ name: 'percent' },]],
];
 /** @nocollapse */
 PercentPipe.ctorParameters = function () {
 return [
 { type: undefined, decorators: [{ type: Inject, args: [LOCALE_ID,] },] },
];
 };
 return PercentPipe;
})();
*/
@ngModule CommonModule
@whatItDoes Formats a number as currency using locale rules.
@howToUse `number_expression | currency[:currencyCode[:display[:digitInfo[:locale]]]]`
@description Use `currency` to format a number as currency. - currencyCode is the [ISO 4217](https://en.wikipedia.org/wiki/ISO_4217) currency code, such as `USD` for the US dollar and `EUR` for the euro. - display indicates whether to show the currency symbol or the code. - code: use code (e.g. `USD`). - symbol (default): use symbol (e.g. `$`). - symbol-narrow: some countries have two symbols for their currency, one regular and one narrow (e.g. the canadian dollar CAD has the symbol `CA$` and the symbol-narrow `$`). - boolean (deprecated from v5): `true` for symbol and false for `code` If there is no narrow symbol for the chosen currency, the regular symbol will be used. - digitInfo See @link DecimalPipe for detailed description. - locale is a string defining the locale to use (uses the current LOCALE_ID by default).
Example
@stable nvar CurrencyPipe = /** @class */ (function () {
 function CurrencyPipe(_locale) {
 this._locale = _locale;
 }
 /** @param {?} value @param {?=} currencyCode @param {?=} display @param {?=} digits @param {?=} locale @return {?} */
 CurrencyPipe.prototype.transform = /** @param {?} value @param {?=} currencyCode @param {?=} display @param {?=} digits @param {?=} locale */

```

```

* @return {?}
*/
function (value, currencyCode, display, digits, locale) {
 if (display === void 0) {
 display = 'symbol';
 }
 if (isEmpty(value)) return null;
 locale = locale || this._locale;
 if (typeof display === 'boolean') {
 if (/** @type {?} */ (console) && /** @type {?} */ (console.warn)) {
 console.warn("Warning: the currency pipe has been changed in Angular v5. The symbolDisplay option (third parameter) is now a string instead of a boolean. The accepted values are 'code', 'symbol' or 'symbol-narrow'.");
 }
 display = display ? 'symbol' : 'code';
 }
 var /** @type {?} */ currency = currencyCode || 'USD';
 if (display !== 'code') {
 currency = getCurrencySymbol(currency, display === 'symbol' ? 'wide' : 'narrow');
 }
 var _a = formatNumber$1(value, locale, NumberFormatStyle.Currency, digits, currency), str = _a.str, error = _a.error;
 if (error) {
 throw invalidPipeArgumentError(CurrencyPipe, error);
 }
 return str;
};
CurrencyPipe.decorators = [
 { type: Pipe, args: [{ name: 'currency' },]],
];
/** @nocollapse */
CurrencyPipe.ctorParameters = function () {
 return [
 { type: undefined, decorators: [{ type: Inject, args: [LOCALE_ID,] },] },
];
};
return CurrencyPipe;
})();
*/
* @param {?} value
* @return {?}
*/
function isEmpty(value) {
 return value == null || value === "" || value !== value;
}
*/
* @fileoverview added by tsickle
* @suppress {checkTypes} checked by tsc
*/
* @license
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*/
* Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
*/
* @ngModule CommonModule
*/
* @whatItDoes Creates a new List or String containing a subset (slice) of the elements.
*/
* @howToUse `array_or_string_expression | slice:start[:end]`
*/
* @description
*/
* Where the input expression is a `List` or `String`, and:
*/
* - `start`: The starting index of the subset to return.
*/
* - `**a positive integer**`: return the item at `start` index and all items after
*/
* in the list or string expression.
*/
* - `**a negative integer**`: return the item at `start` index from the end and all items after
*/
* in the list or string expression.
*/
* - `**if positive and greater than the size of the expression**`: return an empty list or string.
*/
* - `**if negative and greater than the size of the expression**`: return entire list or string.
*/
* - `end`: The ending index of the subset to return.
*/
* - `**omitted**`: return all items until the end.
*/
* - `**if positive**`: return all items before `end` index of the list or string.
*/
* - `**if negative**`: return all items before `end` index from the end of the list or string.
*/
* All behavior is based on the expected behavior of the JavaScript API `Array.prototype.slice()` and `String.prototype.slice()`.
*/
* When operating on a [List], the returned list is always a copy even when all the elements are being returned.
*/
* When operating on a blank value, the pipe returns the blank value.
*/
* ## List Example
*/
* This `ngFor` example:
*/
*
*/
* @example common/pipes/ts/slice_pipe.ts region='SlicePipe_list'
*/
* produces the following:
*/
*
*/
* b
*/
* c
*/
* ## String Examples
*/
*
*/
* @example common/pipes/ts/slice_pipe.ts region='SlicePipe_string'
*/
*
*/
* @stable
*/
* @ngvar SlicePipe =
*/
* @class
*/
*/
function () {
 function SlicePipe() {}
 /**
 * @param {?} value
 * @param {?} start
 * @param {?=} end
 * @return {?}
 */
 SlicePipe.prototype.transform =
 /**
 * @param {?} value
 * @param {?} start
 * @param {?=} end
 * @return {?}
 */
 function (value, start, end) {
 if (value === null) return value;
 if (!this.supports(value)) {
 throw invalidPipeArgumentError(SlicePipe, value);
 }
 return value.slice(start, end);
 };
 /**
 * @param {?} obj
 * @return {?}
 */
 SlicePipe.prototype.supports =
 /**
 * @param {?} obj
 * @return {?}
 */
 function (obj) {
 return typeof obj === 'string' || Array.isArray(obj);
 };
 SlicePipe.decorators = [
 { type: Pipe, args: [{ name: 'slice', pure: false },]],
];
 /** @nocollapse */
 SlicePipe.ctorParameters = function () {
 return [];
 };
 return SlicePipe;
}();
*/
* @fileoverview added by tsickle
* @suppress {checkTypes} checked by tsc
*/
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*/
* A collection of Angular pipes that are likely to be used in each and every application.
*/
* @ngvar COMMON_PIPES = [
 AsyncPipe,
 UpperCasePipe,
 LowerCasePipe,
 JsonPipe,
 SlicePipe,
 DecimalPipe,
 PercentPipe,
 TitleCasePipe,
 CurrencyPipe,
 DatePipe,
 I18nPluralPipe,
 I18nSelectPipe,
];
*/
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* @suppress {checkTypes} checked by tsc
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The
module that includes all the basic Angular directives like {@link NgIf}, {@link NgForOf}, ...
*/
class CommonModule = (function () {
 function CommonModule() {}
 CommonModule.decorators = [
 { type: NgModule, args: [
 declarations:
 [COMMON_DIRECTIVES, COMMON_PIPES],
 exports: [COMMON_DIRECTIVES,
 COMMON_PIPES],
 providers: [
 { provide: NgLocalization, useClass:
 NgLocaleLocalization },
],
],
],
];
 /** @nocollapse */
 CommonModule.ctorParameters = function () { return []; };
 return CommonModule;
})();
nvar 0 =
getPluralCase;
A module that contains the deprecated i18n pipes.
*/
class DeprecatedI18NPipesModule = (function () {
 function DeprecatedI18NPipesModule() {}
 DeprecatedI18NPipesModule.decorators = [
 { type: NgModule, args: [
 declarations:
 [COMMON_DEPRECATED_I18N_PIPES],
 exports: [COMMON_DEPRECATED_I18N_PIPES],
 providers: [
 { provide: DEPRECATED_PLURAL_FN, useValue: 0 },
],
],
],
];
 /**
 @nocollapse */
 DeprecatedI18NPipesModule.ctorParameters = function () { return []; };
 return
 DeprecatedI18NPipesModule;
})();
*/
fileoverview added by tsickle
*/
suppress {checkTypes}
checked by tsc
*/
license
*/
Copyright Google Inc. All Rights Reserved.
*/
Use of this source
code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
A DI Token representing the main rendering context. In a browser this is the DOM Document.
*/
Note: Document might not be available in the Application Context when Application and Rendering
*/
Contexts
are not the same (e.g. when running the application into a Web Worker).
*/
*/
stable
*/
nvar DOCUMENT =
new InjectionToken('DocumentToken');
*/
fileoverview added by tsickle
*/
suppress {checkTypes}
checked by tsc
*/
license
*/
Copyright Google Inc. All Rights Reserved.
*/
Use of this source
code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
nvar PLATFORM_BROWSER_ID = 'browser';
nvar PLATFORM_SERVER_ID = 'server';
nvar
PLATFORM_WORKER_APP_ID = 'browserWorkerApp';
nvar PLATFORM_WORKER_UI_ID =
'browserWorkerUi';
*/
Returns whether a platform id represents a browser platform.
*/
*/
experimental
*/
@param {?} platformId
*/
@return {?}
*/
function isPlatformBrowser(platformId) {
 return platformId ===
 PLATFORM_BROWSER_ID;
}
*/
Returns whether a platform id represents a server platform.
*/
*/
experimental
*/
@param {?} platformId
*/
@return {?}
*/
function isPlatformServer(platformId) {
 return platformId === PLATFORM_SERVER_ID;
}
*/
Returns whether a platform id represents a web
worker app platform.
*/
*/
experimental
*/
@param {?} platformId
*/
@return {?}
*/
function
isPlatformWorkerApp(platformId) {
 return platformId === PLATFORM_WORKER_APP_ID;
}
*/
Returns whether a platform id represents a web worker UI platform.
*/
*/
experimental
*/
@param {?}
platformId
*/
@return {?}
*/
function isPlatformWorkerUi(platformId) {
 return platformId ===
 PLATFORM_WORKER_UI_ID;
}
}
*/
fileoverview added by tsickle
*/
suppress {checkTypes}
checked by tsc
*/
license
*/
Copyright Google Inc. All Rights Reserved.
*/
Use of this source
code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
*/
stable
*/
nvar VERSION = new Version('5.2.1');
*/
fileoverview added by tsickle
*/
*/
suppress {checkTypes}
checked by tsc
*/
license
*/
Copyright Google Inc. All Rights Reserved.
*/
*/
Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at
https://angular.io/license
*/
*/
module
*/
description
*/
Entry point for all public APIs of the
common package.
*/
*/
fileoverview added by tsickle
*/
*/
suppress {checkTypes}
checked by tsc
*/
*/
license
*/
Copyright Google Inc. All Rights Reserved.
*/
*/
Use of this source code is governed by
an MIT-style license that can be found in the LICENSE file at https://angular.io/license
*/
*/
module
*/
description
*/
Entry point for all public APIs of this package.
*/
*/
n// This file only reexports
content of the `src` folder. Keep it that way.
*/
*/
fileoverview added by tsickle
*/
*/
suppress
{checkTypes}
checked by tsc
*/
*/
license
*/
Generated bundle index. Do not edit.
*/
nexport {
registerLocaleData as registerLocaleData, NgLocaleLocalization, NgLocalization, registerLocaleData, Plural,

```



```

@type {?} */ value = line.slice(index + 1).trim();\n _this.maybeSetNormalizedName(name_1, key);\n if (_this.headers.has(key)) {\n /** @type {?} */\n ((_this.headers.get(key))).push(value);\n }\n else {\n _this.headers.set(key, [value]);\n }\n });\n }\n else {\n this.lazyInit = function () {\n _this.headers = new Map();\n Object.keys(headers).forEach(function (name) {\n var /** @type {?} */ values = headers[name];\n var /** @type {?} */ key = name.toLowerCase();\n if (typeof values === 'string') {\n values = [values];\n }\n if (values.length > 0) {\n _this.headers.set(key, values);\n _this.maybeSetNormalizedName(name, key);\n }\n });\n }\n /**\n * Checks for existence of header by given name.\n */\n /**\n * Checks for existence of header by given name.\n * @param {?} name\n * @return {?}\n */\n /**\n * Checks for existence of header by given name.\n * @param {?} name\n * @return {?}\n */\n function (name) {\n this.init();\n return this.headers.has(name.toLowerCase());\n }\n /**\n * Returns first header that matches given name.\n */\n /**\n * Returns first header that matches given name.\n * @param {?} name\n * @return {?}\n */\n /**\n * Returns first header that matches given name.\n * @param {?} name\n * @return {?}\n */\n function (name) {\n this.init();\n var /** @type {?} */ values = this.headers.get(name.toLowerCase());\n return values && values.length > 0 ? values[0] : null;\n }\n /**\n * Returns the names of the headers\n */\n /**\n * Returns the names of the headers\n * @return {?}\n */\n /**\n * Returns the names of the headers\n * @return {?}\n */\n function () {\n this.init();\n return Array.from(this.normalizedNames.values());\n }\n /**\n * Returns list of header values for a given name.\n */\n /**\n * Returns list of header values for a given name.\n * @param {?} name\n * @return {?}\n */\n /**\n * Returns list of header values for a given name.\n * @param {?} name\n * @return {?}\n */\n function (name) {\n this.init();\n return this.headers.get(name.toLowerCase()) || null;\n }\n /**\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n /**\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n function (name, value) {\n return this.clone({ name: name, value: value, op: 'a' });\n }\n /**\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n /**\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n function (name, value) {\n return this.clone({ name: name, value: value, op: 's' });\n }\n /**\n * @param {?} name\n * @param {?=} value\n * @return {?}\n */\n /**\n * @param {?} name\n * @param {?=} value\n * @return {?}\n */\n function (name, value) {\n return this.clone({ name: name, value: value, op: 'd' });\n }\n /**\n * @param {?} name\n * @param {?} lcName\n * @return {?}\n */\n /**\n * @param {?} name\n * @param {?} lcName\n * @return {?}\n */\n function (name, lcName) {\n if (!this.normalizedNames.has(lcName)) {\n this.normalizedNames.set(lcName, name);\n }\n }\n /**\n * @return {?}\n */\n /**\n * @return {?}\n */\n function () {\n var _this = this;\n if (!this.lazyInit) {\n if (this.lazyInit instanceof HttpHeaders) {\n this.copyFrom(this.lazyInit);\n }\n else {\n this.lazyInit();\n }\n this.lazyInit = null;\n if (!this.lazyUpdate) {\n this.lazyUpdate.forEach(function (update) { return _this.applyUpdate(update); });\n }\n this.lazyUpdate = null;\n }\n }\n /**\n * @param {?} other\n * @return {?}\n */\n /**\n * @param {?} other\n * @return {?}\n */\n function (other) {\n var _this = this;\n other.init();\n Array.from(other.headers.keys()).forEach(function (key) {\n _this.headers.set(key, /** @type {?} */ ((other.headers.get(key))));\n _this.normalizedNames.set(key, /** @type {?} */ ((other.normalizedNames.get(key))));\n });\n }\n /**\n * @param {?} update\n * @return {?}\n */\n /**\n * @param {?} update\n * @return {?}\n */\n function (update) {\n var /** @type {?} */ clone = new HttpHeaders();\n clone.lazyInit =\n (!this.lazyInit && this.lazyInit instanceof HttpHeaders) ? this.lazyInit : this;\n clone.lazyUpdate =

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(this.lazyUpdate || []).concat([update]);\n return clone;\n });\n /**\n * @param {?} update\n * @return\n * {?}\n *\n * Headers.prototype.applyUpdate = /**\n * @param {?} update\n * @return {?}\n *\n * function (update) {\n * var /** @type {?} */ key = update.name.toLowerCase();\n * switch (update.op) {\n * case 'a':\n * case 's':\n * var /** @type {?} */ value = /** @type {?} */ ((update.value));\n * if\n * (typeof value === 'string') {\n * value = [value];\n * }\n * if (value.length === 0) {\n * return;\n * }\n * this.maybeSetNormalizedNames(update.name, key);\n * var /** @type\n * {?} */ base = (update.op === 'a' ? this.headers.get(key) : undefined) || [];\n * base.push.apply(base, value);\n * this.headers.set(key, base);\n * break;\n * case 'd':\n * var /** @type {?} */ toDelete_1 =\n * /** @type {?} */ (update.value);\n * if (!toDelete_1) {\n * this.headers.delete(key);\n * this.normalizedNames.delete(key);\n * }\n * else {\n * var /** @type {?} */ existing =\n * this.headers.get(key);\n * if (!existing) {\n * return;\n * }\n * existing =\n * existing.filter(function (value) { return toDelete_1.indexOf(value) === -1; });\n * if (existing.length ===\n * 0) {\n * this.headers.delete(key);\n * this.normalizedNames.delete(key);\n * }\n * else {\n * this.headers.set(key, existing);\n * }\n * }\n * break;\n * }\n * }\n *);\n * /**\n * @internal\n * *\n * Headers.prototype.forEach = /**\n * @internal\n * @param {?} fn\n * @return {?}\n *\n * function\n * (fn) {\n * var _this = this;\n * this.init();\n * Array.from(this.normalizedNames.keys()).\n * .forEach(function (key) { return fn(/** @type {?} */ (_this.normalizedNames.get(key))), /** @type {?} */\n * (_this.headers.get(key))); });\n * }\n *);\n * return Headers;\n *});\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * *\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n * *\n * A codec for encoding and decoding parameters in URLs.\n * *\n * Used by\n * `HttpParams`\n * *\n * @stable\n * *\n * @record\n * *\n * A `HttpParameterCodec` that uses\n * `encodeURIComponent` and `decodeURIComponent` to\n * serialize and parse URL parameter keys and values.\n * *\n * @stable\n * *\n * nvar HttpUrlEncodingCodec = /** @class */ (function () {\n * function\n * HttpUrlEncodingCodec() {\n * }\n * /**\n * * @param {?} k\n * * @return {?}\n * *\n * HttpUrlEncodingCodec.prototype.encodeKey = /**\n * * @param {?} k\n * * @return {?}\n * *\n * function (k)\n * {\n * return standardEncoding(k);\n * };\n * /**\n * * @param {?} v\n * * @return {?}\n * *\n * HttpUrlEncodingCodec.prototype.encodeValue = /**\n * * @param {?} v\n * * @return {?}\n * *\n * function\n * (v)\n * {\n * return standardEncoding(v);\n * };\n * /**\n * * @param {?} k\n * * @return {?}\n * *\n * HttpUrlEncodingCodec.prototype.decodeKey = /**\n * * @param {?} k\n * * @return {?}\n * *\n * function (k)\n * {\n * return decodeURIComponent(k);\n * };\n * /**\n * * @param {?} v\n * * @return {?}\n * *\n * HttpUrlEncodingCodec.prototype.decodeValue = /**\n * * @param {?} v\n * * @return {?}\n * *\n * function\n * (v)\n * {\n * return decodeURIComponent(v);\n * };\n * return HttpUrlEncodingCodec;\n * });\n * /**\n * * @param {?} rawParams\n * * @param {?} codec\n * * @return {?}\n * *\n * function paramParser(rawParams, codec) {\n * var /**\n * @type {?} */ map$$1 = new Map();\n * if (rawParams.length > 0) {\n * var /** @type {?} */ params =\n * rawParams.split('&');\n * params.forEach(function (param) {\n * var /** @type {?} */ eqIdx =\n * param.indexOf('=');\n * var _a = eqIdx === -1 ?\n * [codec.decodeKey(param), "]:\n * [codec.decodeKey(param.slice(0, eqIdx)), codec.decodeValue(param.slice(eqIdx + 1))], key = _a[0], val = _a[1];\n * var /** @type {?} */ list = map$$1.get(key) || [];\n * list.push(val);\n * map$$1.set(key, list);\n * });\n * }\n * return map$$1;\n * };\n * /**\n * * @param {?} v\n * * @return {?}\n * *\n * function standardEncoding(v) {\n * return encodeURIComponent(v).\n * .replace(/%40/gi, '@').\n * .replace(/%3A/gi, ':').\n * .replace(/%24/gi,\n * '$').\n * .replace(/%2C/gi, ',').\n * .replace(/%3B/gi, ';').\n * .replace(/%2B/gi, '+').\n * .replace(/%3D/gi, '=')\n * .replace(/%3F/gi, '?').\n * .replace(/%2F/gi, '/');\n * };\n * *\n * Options used to construct an `HttpParams`\n * instance.\n * *\n * @record\n * *\n * An HTTP request/response body that represents serialized parameters,\n * per\n * the MIME type `application/x-www-form-urlencoded`\n * *\n * This class is immutable - all mutation operations\n * return a new instance.\n * *\n * @stable\n * *\n * nvar HttpParams = /** @class */ (function () {\n * function\n * HttpParams(options) {\n * if (options === void 0) { options = /** @type {?} */ ({}); }\n * var _this = this;\n *

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 this.updates = null;\n this.cloneFrom = null;\n this.encoder = options.encoder || new
 HttpUrlEncodingCodec();\n if (!!options.fromString) {\n if (!!options.fromObject) {\n throw
 new Error("Cannot specify both fromString and fromObject.");\n }\n this.map =
 paramParser(options.fromString, this.encoder);\n }\n else if (!!options.fromObject) {\n this.map =
 new Map();\n Object.keys(options.fromObject).forEach(function (key) {\n var /** @type {?} */
 value = (/** @type {?} */ (options.fromObject))[key]; /** @type {?} */ ^\n ((_this.map)).set(key,
 Array.isArray(value) ? value : [value]);\n });\n }\n else {\n this.map = null;\n }\n}\n
/**\n * Check whether the body has one or more values for the given parameter name.\n */\n /**\n * Check
whether the body has one or more values for the given parameter name.\n * @param {?} param\n * @return
{?}\n */\n HttpParams.prototype.has = /**\n * Check whether the body has one or more values for the given
parameter name.\n * @param {?} param\n * @return {?}\n */\n function (param) {\n this.init();\n
return /** @type {?} */ ((this.map)).has(param);\n};\n /**\n * Get the first value for the given parameter
name, or `null` if it's not present.\n */\n /**\n * Get the first value for the given parameter name, or `null` if
it's not present.\n * @param {?} param\n * @return {?}\n */\n HttpParams.prototype.get = /**\n * Get
the first value for the given parameter name, or `null` if it's not present.\n * @param {?} param\n * @return
{?}\n */\n function (param) {\n this.init();\n var /** @type {?} */ res = /** @type {?} */
((this.map)).get(param);\n return !!res ? res[0] : null;\n};\n /**\n * Get all values for the given parameter
name, or `null` if it's not present.\n */\n /**\n * Get all values for the given parameter name, or `null` if it's
not present.\n * @param {?} param\n * @return {?}\n */\n HttpParams.prototype.getAll = /**\n * Get
all values for the given parameter name, or `null` if it's not present.\n * @param {?} param\n * @return
{?}\n */\n function (param) {\n this.init();\n return /** @type {?} */ ((this.map)).get(param) || null;\n};\n
/**\n * Get all the parameter names for this body.\n */\n /**\n * Get all the parameter names for this
body.\n * @return {?}\n */\n HttpParams.prototype.keys = /**\n * Get all the parameter names for this
body.\n * @return {?}\n */\n function () {\n this.init();\n return Array.from(/** @type {?} */
((this.map)).keys());\n};\n /**\n * Construct a new body with an appended value for the given parameter
name.\n */\n /**\n * Construct a new body with an appended value for the given parameter name.\n *
@param {?} param\n * @param {?} value\n * @return {?}\n */\n HttpParams.prototype.append = /**\n
* Construct a new body with an appended value for the given parameter name.\n * @param {?} param\n *
@param {?} value\n * @return {?}\n */\n function (param, value) {\n return this.clone({ param: param, value:
value, op: 'a' });\n};\n /**\n * Construct a new body with a new value for the given parameter name.\n */\n
/**\n * Construct a new body with a new value for the given parameter name.\n * @param {?} param\n *
@param {?} value\n * @return {?}\n */\n HttpParams.prototype.set = /**\n * Construct a new body with a
new value for the given parameter name.\n * @param {?} param\n * @param {?} value\n * @return {?}\n
*/\n function (param, value) {\n return this.clone({ param: param, value: value, op: 's' });\n};\n /**\n
* Construct a new body with either the given value for the given parameter\n * removed, if a value is given, or all values for
the given parameter removed\n * if not.\n */\n /**\n * Construct a new body with either the given value for
the given parameter\n * removed, if a value is given, or all values for the given parameter removed\n * if not.\n
* @param {?} param\n * @param {?=} value\n * @return {?}\n */\n HttpParams.prototype.delete = /**\n
* Construct a new body with either the given value for the given parameter\n * removed, if a value is given, or
all values for the given parameter removed\n * if not.\n * @param {?} param\n * @param {?=} value\n *
@return {?}\n */\n function (param, value) {\n return this.clone({ param: param, value: value, op: 'd' });\n};\n
/**\n * Serialize the body to an encoded string, where key-value pairs (separated by `=`) are\n * separated by
`&`s.\n */\n /**\n * Serialize the body to an encoded string, where key-value pairs (separated by `=`) are\n
* separated by `&`s.\n * @return {?}\n */\n HttpParams.prototype.toString = /**\n * Serialize the body to
an encoded string, where key-value pairs (separated by `=`) are\n * separated by `&`s.\n * @return {?}\n
*/\n function () {\n var _this = this;\n this.init();\n return this.keys().map(function (key) {\n
var /** @type {?} */ eKey = _this.encoder.encodeKey(key);\n return /** @type {?} */ ((/** @type {?} */
((_this.map)).get(key))).map(function (value) {\n return eKey + '=' + _this.encoder.encodeValue(value);\n }).join('&');\n}

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 })\n .join('&');\n });\n /**\n * @param {?} update\n * @return {?}\n */\n HttpParams.prototype.clone = /**\n * @param {?} update\n * @return {?}\n */\n function (update) {\n var /**\n * @type {?} */ clone = new HttpParams(/**\n * @type {?} */ ({ encoder: this.encoder }));\n clone.cloneFrom = this.cloneFrom || this;\n clone.updates = (this.updates || []).concat([update]);\n return clone;\n });\n /**\n * @return {?}\n */\n HttpParams.prototype.init = /**\n * @return {?}\n */\n function () {\n var _this = this;\n if (this.map === null) {\n this.map = new Map();\n }\n if (this.cloneFrom !== null) {\n this.cloneFrom.init();\n this.cloneFrom.keys().forEach(function (key) { return\n ((_this.map)).set(key, /**\n * @type {?} */ ((/**\n * @type {?} */ ((/**\n * @type {?} */\n ((_this.cloneFrom)).map)).get(key))))); });\n /**\n * @type {?} */\n ((this.updates)).forEach(function (update) {\n switch (update.op) {\n case 'a':\n case 's':\n var /**\n * @type {?} */ base =\n (update.op === 'a' ? /**\n * @type {?} */ ((_this.map)).get(update.param) : undefined) || [];\n base.push(/**\n * @type {?} */ ((update.value));\n /**\n * @type {?} */\n ((_this.map)).set(update.param,\n base);\n break;\n case 'd':\n if (update.value !== undefined) {\n var /**\n * @type {?} */ base_1 = /**\n * @type {?} */ ((_this.map)).get(update.param) || [];\n var /**\n * @type {?} */ idx = base_1.indexOf(update.value);\n if (idx !== -1) {\n base_1.splice(idx, 1);\n }\n if (base_1.length > 0) {\n /**\n * @type {?} */ ((_this.map)).set(update.param, base_1);\n }\n else {\n /**\n * @type {?} */ ((_this.map)).delete(update.param);\n }\n }\n else {\n /**\n * @type {?} */ ((_this.map)).delete(update.param);\n break;\n }\n }\n });\n this.cloneFrom = null;\n }\n });\n return HttpParams;\n });\n });\n }\n });\n });\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n /**\n * @license\n * Copyright\n * Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n /**\n * Determine whether the given HTTP method\n * may include a body.\n * @param {?} method\n * @return {?}\n */\n function mightHaveBody(method) {\n switch\n (method) {\n case 'DELETE':\n case 'GET':\n case 'HEAD':\n case 'OPTIONS':\n case\n 'JSONP':\n return false;\n default:\n return true;\n }\n }\n /**\n * Safely assert whether the given\n * value is an ArrayBuffer.\n * In some execution environments ArrayBuffer is not defined.\n * @param {?} value\n * @return {?}\n */\n function isArrayBuffer(value) {\n return typeof ArrayBuffer !== 'undefined' &&\n value instanceof ArrayBuffer;\n }\n /**\n * Safely assert whether the given value is a Blob.\n * In some execution\n * environments Blob is not defined.\n * @param {?} value\n * @return {?}\n */\n function isBlob(value) {\n return\n typeof Blob !== 'undefined' && value instanceof Blob;\n }\n /**\n * Safely assert whether the given value is a\n * FormData instance.\n * In some execution environments FormData is not defined.\n * @param {?} value\n * @return {?}\n */\n function isFormData(value) {\n return typeof FormData !== 'undefined' && value instanceof\n FormData;\n }\n /**\n * An outgoing HTTP request with an optional typed body.\n * `HttpRequest` represents an\n * outgoing request, including URL, method,\n * headers, body, and other request configuration options. Instances\n * should be\n * assumed to be immutable. To modify a `HttpRequest`, the `clone`\n * method should be used.\n */\n @stable\n nvar HttpRequest = /**\n * @class */\n (function () {\n function HttpRequest(method, url, third, fourth)\n {\n this.url = url;\n /**\n * The request body, or `null` if one isn't set.\n */\n * Bodies are not\n enforced to be immutable, as they can include a reference to any\n * user-defined data type. However,\n interceptors should take care to preserve\n * idempotence by treating them as such.\n */\n * this.body =\n null;\n /**\n * Whether this request should be made in a way that exposes progress events.\n */\n * Progress events are expensive (change detection runs on each event) and so\n * they should only be requested\n if the consumer intends to monitor them.\n */\n * this.reportProgress = false;\n /**\n * Whether this\n request should be sent with outgoing credentials (cookies).\n */\n * this.withCredentials = false;\n /**\n * The expected response type of the server.\n */\n * This is used to parse the response appropriately\n before returning it to\n * the requestee.\n */\n * this.responseType = 'json';\n this.method =\n method.toUpperCase();\n // Next, need to figure out which argument holds the HttpRequestInit\n // options,\n if any.\n var /**\n * @type {?} */ options;\n // Check whether a body argument is expected. The only valid way

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```

to omit\n // the body argument is to use a known no-body method like GET.\n if
(mightHaveBody(this.method) || !fourth) {\n // Body is the third argument, options are the fourth.\n
this.body = (third !== undefined) ? /** @type {?} */ (third) : null;\n options = fourth;\n }\n else {\n
 // No body required, options are the third argument. The body stays null.\n options = /** @type {?} */
(third);\n }\n // If options have been passed, interpret them.\n if (options) {\n // Normalize
reportProgress and withCredentials.\n this.reportProgress = !options.reportProgress;\n
this.withCredentials = !options.withCredentials;\n // Override default response type of 'json' if one is
provided.\n if (!options.responseType) {\n this.responseType = options.responseType;\n }\n
 // Override headers if they're provided.\n if (!options.headers) {\n this.headers =
options.headers;\n }\n if (!options.params) {\n this.params = options.params;\n }\n
 }\n // If no headers have been passed in, construct a new HttpHeaders instance.\n if (!this.headers) {\n
this.headers = new HttpHeaders();\n }\n // If no parameters have been passed in, construct a new
HttpUrlEncodedParams instance.\n if (!this.params) {\n this.params = new HttpParams();\n
this.urlWithParams = url;\n }\n else {\n // Encode the parameters to a string in preparation for
inclusion in the URL.\n var /** @type {?} */ params = this.params.toString();\n if (params.length ===
0) {\n // No parameters, the visible URL is just the URL given at creation time.\n
this.urlWithParams = url;\n }\n else {\n // Does the URL already have query parameters?
Look for '?'.\n var /** @type {?} */ qIdx = url.indexOf('?');\n // There are 3 cases to handle:\n
 // 1) No existing parameters -> append '?' followed by params.\n // 2) '?' exists and is followed by
existing query string ->\n // append '&' followed by params.\n // 3) '?' exists at the end of the url
-> append params directly.\n // This basically amounts to determining the character, if any, with\n
 // which to join the URL and parameters.\n var /** @type {?} */ sep = qIdx === -1 ? '?' : (qIdx < url.length
- 1 ? '&' : '');\n this.urlWithParams = url + sep + params;\n }\n }\n /**\n * Transform
the free-form body into a serialized format suitable for\n * transmission to the server.\n */\n /**\n *
Transform the free-form body into a serialized format suitable for\n * transmission to the server.\n */\n @return
{?}\n /**\n * HttpRequest.prototype.serializeBody = /**\n * Transform the free-form body into a serialized
format suitable for\n * transmission to the server.\n */\n */\n @return {?}\n /**\n * function () {\n
// If no body is present, no need to serialize it.\n * if (this.body === null) {\n * return null;\n * }\n
// Check whether the body is already in a serialized form. If so,\n * // it can just be returned directly.\n * if
(isArrayBuffer(this.body) || isBlob(this.body) || isFormData(this.body) ||\n * typeof this.body === 'string') {\n
 return this.body;\n * }\n * // Check whether the body is an instance of HttpUrlEncodedParams.\n * if
(this.body instanceof HttpParams) {\n * return this.body.toString();\n * }\n * // Check whether the body is
an object or array, and serialize with JSON if so.\n * if (typeof this.body === 'object' || typeof this.body ===
'boolean' ||\n * Array.isArray(this.body)) {\n * return JSON.stringify(this.body);\n * }\n * // Fall
back on toString() for everything else.\n * return (/** @type {?} */ (this.body)).toString();\n * }\n * /**\n
 * Examine the body and attempt to infer an appropriate MIME type\n * for it.\n * \n * If no such type can
be inferred, this method will return `null`.\n * \n * Examine the body and attempt to infer an appropriate
MIME type\n * for it.\n * \n * If no such type can be inferred, this method will return `null`.\n * \n
 * @return {?}\n * \n * HttpRequest.prototype.detectContentTypeHeader = /**\n * Examine the body and attempt to
infer an appropriate MIME type\n * for it.\n * \n * If no such type can be inferred, this method will return `null`.\n
 * \n * @return {?}\n * \n * function () {\n * // An empty body has no content type.\n * if (this.body === null)
{\n * return null;\n * }\n * // FormData bodies rely on the browser's content type assignment.\n * if
(isFormData(this.body)) {\n * return null;\n * }\n * // Blobs usually have their own content type. If it
doesn't, then\n * // no type can be inferred.\n * if (isBlob(this.body)) {\n * return this.body.type || null;\n
 * }\n * // Array buffers have unknown contents and thus no type can be inferred.\n * if
(isArrayBuffer(this.body)) {\n * return null;\n * }\n * // Technically, strings could be a form of JSON data,
but it's safe enough\n * // to assume they're plain strings.\n * if (typeof this.body === 'string') {\n * return
'text/plain';\n * }\n * // `HttpUrlEncodedParams` has its own content-type.\n * if (this.body instanceof

```



```

for all responses.\n *\n * The single parameter accepted is an initialization hash. Any properties\n * of the response passed there will override the default values.\n *\n * function HttpResponseBase(init, defaultStatus,\n * defaultStatusText) {\n * if (defaultStatus === void 0) { defaultStatus = 200; }\n * if (defaultStatusText ===\n * void 0) { defaultStatusText = 'OK'; }\n * // If the hash has values passed, use them to initialize the response.\n * // Otherwise use the default values.\n * this.headers = init.headers || new HttpHeaders();\n * this.status =\n * init.status !== undefined ? init.status : defaultStatus;\n * this.statusText = init.statusText || defaultStatusText;\n * this.url = init.url || null;\n * // Cache the ok value to avoid defining a getter.\n * this.ok = this.status >= 200 &&\n * this.status < 300;\n * }\n * return HttpResponseBase;\n *})();\n *\n * A partial HTTP response which only includes\n * the status and header data,\n * but no response body.\n *\n * `HttpHeaderResponse` is a `HttpEvent` available on the\n * response\n * event stream, only when progress events are requested.\n *\n * @@stable\n *\n * var\n * HttpHeaderResponse = /** @class */ (function (_super) {\n * __extends(HttpHeaderResponse, _super);\n * /**\n * * Create a new `HttpHeaderResponse` with the given parameters.\n * *\n * * function HttpHeaderResponse(init) {\n * if (init === void 0) { init = {}; }\n * var _this = _super.call(this, init) || this;\n * _this.type =\n * HttpEventType.ResponseHeader;\n * return _this;\n * }\n * /**\n * * Copy this `HttpHeaderResponse`,\n * * overriding its contents with the\n * * given parameter hash.\n * *\n * * function HttpHeaderResponse(hash) {\n * return _super.call(this, hash) || this;\n * }\n * /**\n * * Copy this `HttpHeaderResponse`,\n * * overriding its contents with the\n * * given parameter hash.\n * *\n * * @param {=} update\n * * @return {?}\n * *\n * * function HttpHeaderResponse.prototype.clone = /**\n * * Copy this `HttpHeaderResponse`, overriding its contents with\n * * the\n * * given parameter hash.\n * * @param {=} update\n * * @return {?}\n * *\n * * function (update) {\n * if (update === void 0) { update = {}; }\n * // Perform a straightforward initialization of the new\n * HttpHeaderResponse,\n * // overriding the current parameters with new ones if given.\n * return new\n * HttpHeaderResponse({\n * headers: update.headers || this.headers,\n * status: update.status !== undefined\n * ? update.status : this.status,\n * statusText: update.statusText || this.statusText,\n * url: update.url || this.url\n * || undefined,\n * });\n * }\n * }\n * return HttpHeaderResponse;\n * })(HttpResponseBase);\n * }\n *\n * A full HTTP\n * response, including a typed response body (which may be `null`\n * if one was not returned).\n *\n * `HttpResponse` is a `HttpEvent` available on the response event\n * stream.\n *\n * @@stable\n *\n * var HttpResponse = /** @class\n * */ (function (_super) {\n * __extends(HttpResponse, _super);\n * /**\n * * Construct a new `HttpResponse`.\n * *\n * * function HttpResponse(init) {\n * if (init === void 0) { init = {}; }\n * var _this = _super.call(this, init) ||\n * this;\n * _this.type = HttpEventType.Response;\n * _this.body = init.body !== undefined ? init.body : null;\n * return _this;\n * }\n * /**\n * * @param {=} update\n * * @return {?}\n * *\n * * function HttpResponse.prototype.clone = /**\n * * @param {=} update\n * * @return {?}\n * *\n * * function (update) {\n * if (update === void 0) {\n * update = {};\n * }\n * return new HttpResponse({\n * body: (update.body !== undefined) ? update.body :\n * this.body,\n * headers: update.headers || this.headers,\n * status: (update.status !== undefined) ?\n * update.status : this.status,\n * statusText: update.statusText || this.statusText,\n * url: update.url || this.url ||\n * undefined,\n * });\n * }\n * }\n * return HttpResponse;\n * })(HttpResponseBase);\n * }\n *\n * A response that represents an\n * error or failure, either from a\n * non-successful HTTP status, an error while executing the request,\n * or some\n * other failure which occurred during the parsing of the response.\n *\n * Any error returned on the `Observable`\n * response stream will be\n * wrapped in an `HttpErrorResponse` to provide additional context about\n * the state of\n * the HTTP layer when the error occurred. The error property\n * will contain either a wrapped Error object or the\n * error response returned\n * from the server.\n *\n * @@stable\n *\n * var HttpErrorResponse = /** @class */ (function\n * (_super) {\n * __extends(HttpErrorResponse, _super);\n * function HttpErrorResponse(init) {\n * var _this =\n * // Initialize with a default status of 0 / Unknown Error.\n * _super.call(this, init, 0, 'Unknown Error') || this;\n * _this.name = 'HttpErrorResponse';\n * /**\n * * Errors are never okay, even when the status code is in the 2xx\n * * success range.\n * *\n * * function HttpErrorResponse.prototype.ok = false;\n * * // If the response was successful, then this was a parse error.\n * * Otherwise, it was\n * * // a protocol-level failure of some sort. Either the request failed in transit\n * * // or the\n * * server returned an unsuccessful status code.\n * * if (_this.status >= 200 && _this.status < 300) {\n * _this.message = \"Http failure during parsing for \" + (init.url || '(unknown url));\n * }\n * else {\n * _this.message =\n * \"Http failure response for \" + (init.url || '(unknown url)') + \": \" + init.status +\n * \" \" +\n * init.statusText;\n * }\n * _this.error = init.error || null;\n * return _this;\n * }\n * return

```

```

HttpResponse;
}(HttpBase));
}

/**
 * @fileoverview added by tsickle
 * @suppress
 {checkTypes} checked by tsc
 */
/*
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of
 this source code is governed by an MIT-style license that can be
 * found in the LICENSE file at
 https://angular.io/license
 */
/**
 * Construct an instance of `HttpRequestOptions<T>` from a source
 `HttpMethodOptions` and
 * the given `body`. Basically, this clones the object and adds the body.
 */
@template
T
@param {?} options
@param {?} body
@return {?}
function addBody(options, body) {
return {
 body: body,
 headers: options.headers,
 observe: options.observe,
 params:
options.params,
 reportProgress: options.reportProgress,
 responseType: options.responseType,
 withCredentials: options.withCredentials,
};
}

/**
 * Perform HTTP requests.
 */
HttpClient is
available as an injectable class, with methods to perform HTTP requests.
Each request method has multiple
signatures, and the return type varies according to which
signature is called (mainly the values of `observe` and
`responseType`).

@stable
nvar HttpClient = /** @class */ (function () {
function
HttpClient(handler) {
 this.handler = handler;
}

/**
 * Constructs an `Observable` for a particular
 HTTP request that, when subscribed,
 * fires the request through the chain of registered interceptors and on to
 the
 * server.
 * This method can be called in one of two ways. Either an `HttpRequest`
 * instance
 can be passed directly as the only parameter, or a method can be
 * passed as the first parameter, a string URL as the second, and an
 * options hash as the third.
 * If a `HttpRequest` object is passed directly, an
 `Observable` of the
 * raw `HttpEvent` stream will be returned.
 * If a request is instead built by
 providing a URL, the options object
 * determines the return type of `request()`. In addition to configuring
 * request parameters such as the outgoing headers and/or the body, the options
 * hash specifies two key pieces of information about the request: the
 * `responseType` and what to `observe`.
 * The `responseType`
 value determines how a successful response body will be
 * parsed. If `responseType` is the default `json`, a type
 interface for the
 * resulting object may be passed as a type parameter to `request()`.
 * The `observe`
 value determines the return type of `request()`, based on what
 * the consumer is interested in observing. A value
 of `events` will return an
 * `Observable<HttpEvent>` representing the raw `HttpEvent` stream,
 * including
 progress events by default. A value of `response` will return an
 * `Observable<HttpResponse<T>>` where the
 `T` parameter of `HttpResponse`
 * depends on the `responseType` and any optionally provided type
 parameter.
 * A value of `body` will return an `Observable<T>` with the same `T` body type.
 */
 * Constructs an `Observable` for a particular HTTP request that, when subscribed,
 * fires the request through
 the chain of registered interceptors and on to the
 * server.
 * This method can be called in one of two
 ways. Either an `HttpRequest`
 * instance can be passed directly as the only parameter, or a method can be
 * passed as the first parameter, a string URL as the second, and an
 * options hash as the third.
 * If a
 `HttpRequest` object is passed directly, an `Observable` of the
 * raw `HttpEvent` stream will be returned.
 * If a request is instead built by providing a URL, the options object
 * determines the return type of
 `request()`. In addition to configuring
 * request parameters such as the outgoing headers and/or the body, the
 options
 * hash specifies two key pieces of information about the request: the
 * `responseType` and what to
 `observe`.
 * The `responseType`
 value determines how a successful response body will be
 * parsed.
 If `responseType` is the default `json`, a type interface for the
 * resulting object may be passed as a type
 parameter to `request()`.
 * The `observe`
 value determines the return type of `request()`, based on what
 * the consumer is interested in observing. A value
 of `events` will return an
 * `Observable<HttpEvent>`
 representing the raw `HttpEvent` stream,
 * including progress events by default. A value of `response` will
 return an
 * `Observable<HttpResponse<T>>` where the `T` parameter of `HttpResponse`
 * depends on the
 `responseType` and any optionally provided type parameter.
 * A value of `body` will return an
 `Observable<T>` with the same `T` body type.
 */
@param {?} first
@param {?=} url
@param {?=}
options
@return {?}
HttpClient.prototype.request = /**
 * Constructs an `Observable` for a
 particular HTTP request that, when subscribed,
 * fires the request through the chain of registered interceptors
 and on to the
 * server.
 * This method can be called in one of two ways. Either an `HttpRequest`
 * instance
 can be passed directly as the only parameter, or a method can be
 * passed as the first parameter, a
 */

```

```

string URL as the second, and an
 * options hash as the third.
 *
 * If a `HttpRequest` object is passed
directly, an `Observable` of the
 * raw `HttpEvent` stream will be returned.
 *
 * If a request is instead
built by providing a URL, the options object
 * determines the return type of `request()`. In addition to
configuring
 * request parameters such as the outgoing headers and/or the body, the options
 * hash specifies
two key pieces of information about the request: the
 * `responseType` and what to `observe`.
 *
 * The
`responseType` value determines how a successful response body will be
 * parsed. If `responseType` is the
default `json`, a type interface for the
 * resulting object may be passed as a type parameter to `request()`.
 *
 * The `observe` value determines the return type of `request()`, based on what
 * the consumer is
interested in observing. A value of `events` will return an
 * `Observable<HttpEvent>` representing the raw
`HttpEvent` stream,
 * including progress events by default. A value of `response` will return an
 *
`Observable<HttpResponse<T>>` where the `T` parameter of `HttpResponse`
 * depends on the `responseType`
and any optionally provided type parameter.
 * A value of `body` will return an `Observable<T>` with the same
`T` body type.
 * @param {?} first
 * @param {?=} url
 * @param {?=} options
 * @return {?}
 */
function (first, url, options) {
 var _this = this;
 if (options === void 0) { options = {}; }
 var req;
 // Firstly, check whether the primary argument is an instance of `HttpRequest`.
 if (first instanceof HttpRequest) {
 // It is. The other arguments must be undefined (per the signatures) and can
 // be ignored.
 req = /** @type {?} */ (first);
 } else {
 // It's a string, so it
 // represents a URL. Construct a request based on it,
 // and incorporate the remaining arguments (assuming
 // GET unless a method is
 // provided.
 // Figure out the headers.
 var /** @type {?} */
headers = undefined;
 if (options.headers instanceof HttpHeaders) {
 headers = options.headers;
 }
 else {
 headers = new HttpHeaders(options.headers);
 }
 // Sort out
 // parameters.
 var /** @type {?} */
params = undefined;
 if (!options.params) {
 if
 (options.params instanceof HttpParams) {
 params = options.params;
 }
 else {
 params = new HttpParams(/** @type {?} */ ({ fromObject: options.params }));
 }
 }
 // Construct the request.
 req = new HttpRequest(first, /** @type {?} */ ((url)), (options.body !==
undefined ? options.body : null), {
 headers: headers,
 params: params,
 reportProgress: options.reportProgress,
 // By default, JSON is assumed to be returned for all calls.
 responseType: options.responseType || 'json',
 withCredentials: options.withCredentials,
 });
 // Start with an Observable.of() the initial request, and run the handler (which
 // includes all
 // interceptors) inside a concatMap(). This way, the handler runs
 // inside an Observable chain, which causes
 // interceptors to be re-run on every
 // subscription (this also makes retries re-run the handler, including
 // interceptors).
 var /** @type {?} */
events$ = concatMap.call(of(req), function (req) { return
_this.handler.handle(req); });
 // If coming via the API signature which accepts a previously constructed
 // HttpRequest,
 // the only option is to get the event stream. Otherwise, return the event stream if
 // that is
 // what was requested.
 if (first instanceof HttpRequest || options.observe === 'events') {
 return
 events$;
 }
 // The requested stream contains either the full response or the body. In either
 // case,
 // the first step is to filter the event stream to extract a stream of
 // responses(s).
 var /** @type {?} */
res$ = filter.call(events$, function (event) { return event instanceof HttpResponse; });
 // Decide which stream to
 // return.
 switch (options.observe || 'body') {
 case 'body':
 // The requested stream is the body.
 // Map the response stream to the response
 // body. This could be done more simply, but a misbehaving
 // interceptor might
 // transform the response body into a different format and ignore the requested
 // response type. Guard against this by validating that the response is of the
 // requested type.
 switch (req.responseType) {
 case 'arraybuffer':
 return map.call(res$, function (res) {
 // Validate that the body is an ArrayBuffer.
 if (res.body !== null && !(res.body
instanceof ArrayBuffer)) {
 throw new Error('Response is not an ArrayBuffer.');

```

```

 }\n return res.body;\n });\n case 'text':\n return
map.call(res$, function (res) {\n // Validate that the body is a string.\n if (res.body
!== null && typeof res.body !== 'string') {\n throw new Error('Response is not a string.);\n
 }\n return res.body;\n });\n case 'json':\n default:\n
// No validation needed for JSON responses, as they can be of any type.\n return
map.call(res$, function (res) { return res.body; });\n }\n case 'response':\n // The response
stream was requested directly, so return it.\n return res$;\n default:\n // Guard against new
future observe types being added.\n throw new Error("Unreachable: unhandled observe type \"" +
options.observe + "\"");\n }\n });\n /**\n * Constructs an `Observable` which, when subscribed, will
cause the configured\n * DELETE request to be executed on the server. See the individual overloads for\n *
details of `delete()`'s return type based on the provided options.\n *\n */\n * Constructs an `Observable`
which, when subscribed, will cause the configured\n * DELETE request to be executed on the server. See the
individual overloads for\n * details of `delete()`'s return type based on the provided options.\n * @param {?}
url\n * @param {?=} options\n * @return {?}\n */\n * Constructs an
`Observable` which, when subscribed, will cause the configured\n * DELETE request to be executed on the
server. See the individual overloads for\n * details of `delete()`'s return type based on the provided options.\n *
@param {?} url\n * @param {?=} options\n * @return {?}\n */\n * Constructs an
`Observable` which, when subscribed, will cause the configured\n * GET request to be
executed on the server. See the individual overloads for\n * details of `get()`'s return type based on the provided
options.\n *\n */\n * Constructs an `Observable` which, when subscribed, will cause the configured\n *
GET request to be executed on the server. See the individual overloads for\n * details of `get()`'s return type based
on the provided options.\n * @param {?} url\n * @param {?=} options\n * @return {?}\n */\n
HttpClient.prototype.delete = /**\n * Constructs an `Observable` which, when subscribed, will cause the
configured\n * DELETE request to be executed on the server. See the individual overloads for\n * details of `get()`'s
return type based on the provided options.\n * @param {?} url\n * @param {?=} options\n * @return {?}\n */\n
HttpClient.prototype.get = /**\n * Constructs an `Observable` which, when subscribed, will cause the
configured\n * GET request to be executed on the server. See the individual overloads for\n * details of `get()`'s
return type based on the provided options.\n * @param {?} url\n * @param {?=} options\n * @return {?}\n */\n
function (url, options) {\n if
(options === void 0) { options = {}; }\n return this.request('DELETE', url, /** @type {?} */ (options));\n }\n /**\n * Constructs an `Observable` which, when subscribed, will cause the configured\n * GET request to be
executed on the server. See the individual overloads for\n * details of `get()`'s return type based on the provided
options.\n *\n */\n * Constructs an `Observable` which, when subscribed, will cause the configured\n *
GET request to be executed on the server. See the individual overloads for\n * details of `get()`'s return type based
on the provided options.\n * @param {?} url\n * @param {?=} options\n * @return {?}\n */\n
HttpClient.prototype.get = /**\n * Constructs an `Observable` which, when subscribed, will cause the
configured\n * GET request to be executed on the server. See the individual overloads for\n * details of `get()`'s
return type based on the provided options.\n * @param {?} url\n * @param {?=} options\n * @return {?}\n */\n
function (url, options) {\n if
(options === void 0) { options = {}; }\n return this.request('GET', url,
/** @type {?} */ (options));\n }\n /**\n * Constructs an `Observable` which, when subscribed, will cause the
configured\n * HEAD request to be executed on the server. See the individual overloads for\n * details of
`head()`'s return type based on the provided options.\n *\n */\n * Constructs an `Observable` which, when
subscribed, will cause the configured\n * HEAD request to be executed on the server. See the individual
overloads for\n * details of `head()`'s return type based on the provided options.\n * @param {?} url\n *
@param {?=} options\n * @return {?}\n */\n * Constructs an
`Observable` which, when subscribed, will cause the configured\n * HEAD request to be executed on the server.
See the individual overloads for\n * details of `head()`'s return type based on the provided options.\n *
@param {?} url\n * @param {?=} options\n * @return {?}\n */\n * Constructs an
`Observable` which, when subscribed, will cause a request\n * with the special method `JSONP` to
be dispatched via the interceptor pipeline.\n *\n * A suitable interceptor must be installed (e.g. via the
`HttpClientJsonpModule`).\n *\n * If no such interceptor is reached, then the `JSONP` request will likely be\n *
rejected by the configured backend.\n *\n */\n * Constructs an `Observable` which, when subscribed, will
cause a request\n * with the special method `JSONP` to be dispatched via the interceptor pipeline.\n *\n * A
suitable interceptor must be installed (e.g. via the `HttpClientJsonpModule`).\n *\n * If no such interceptor is reached,
then the `JSONP` request will likely be\n * rejected by the configured backend.\n * @template T\n *
@param {?} url\n * @param {?} callbackParam\n * @return {?}\n */\n * Constructs an
`Observable` which, when subscribed, will cause a request\n * with the special method
`JSONP` to be dispatched via the interceptor pipeline.\n *\n * A suitable interceptor must be installed (e.g. via
the `HttpClientJsonpModule`).\n *\n * If no such interceptor is reached, then the `JSONP` request will likely be\n *

```



transform the outgoing request before passing it to the next interceptor in the chain, by calling

```

next.handle(transformedReq)

```

In rare cases, interceptors may wish to completely handle a request themselves, and not delegate to the remainder of the chain. This behavior is allowed.

```

@record
@nvar HttpInterceptorHandler = /** @class */ (function () {
 function HttpInterceptorHandler(next, interceptor) {
 this.next = next;
 this.interceptor = interceptor;
 }
 /** @param {?} req @return {?} */
 HttpInterceptorHandler.prototype.handle = /** @param {?} req @return {?} */
 function (req) {
 return this.interceptor.intercept(req, this.next);
 };
 return HttpInterceptorHandler;
})();

```

A multi-provider token which represents the array of `HttpInterceptor`'s that are registered.

```

@nvar HTTP_INTERCEPTORS = new InjectionToken('HTTP_INTERCEPTORS');
@nvar NoopInterceptor = /** @class */ (function () {
 function NoopInterceptor() {}
 /** @param {?} req @param {?} next @return {?} */
 NoopInterceptor.prototype.intercept = /** @param {?} req @param {?} next @return {?} */
 function (req, next) {
 return next.handle(req);
 };
 NoopInterceptor.decorators = [
 { type: Injectable },
];
 /** @nocollapse */
 NoopInterceptor.ctorParameters = function () { return []; };
 return NoopInterceptor;
})();

```

@fileoverview added by tsickle  
@suppress {checkTypes} checked by tsc  
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Every request made through JSONP needs a callback name that's unique across the whole page. Each request is assigned an id and the callback name is constructed from that. The next id to be assigned is tracked in a global variable here that is shared among all applications on the page.

```

nextRequestId = 0;

```

Error text given when a JSONP script is injected, but doesn't invoke the callback passed in its URL.

```

JSONP_ERR_NO_CALLBACK = 'JSONP injected script did not invoke callback.';

```

Error text given when a request is passed to the `JsonpClientBackend` that doesn't have a request method `JSONP`.

```

JSONP_ERR_WRONG_METHOD = 'JSONP requests must use JSONP request method.';
JSONP_ERR_WRONG_RESPONSE_TYPE = 'JSONP requests must use Json response type.';

```

DI token/abstract type representing a map of JSONP callbacks.

In the browser, this should always be the `window` object.

```

@abstract
@nvar JsonpCallbackContext = /** @class */ (function () {
 function JsonpCallbackContext() {}
 return JsonpCallbackContext;
})();

```

`HttpBackend` that only processes `HttpRequest` with the JSONP method, by performing JSONP style requests.

```

@nvar JsonpClientBackend = /** @class */ (function () {
 function JsonpClientBackend(callbackMap, document) {
 this.callbackMap = callbackMap;
 this.document = document;
 }
 /** @param {?} req @return {?} */
 Get the name of the next callback method, by incrementing the global nextRequestId.
 JsonpClientBackend.prototype.nextCallback = /** @param {?} req @return {?} */
 Get the name of the next callback method, by incrementing the global nextRequestId.
 function () { return "ng_jsonp_callback_" + nextRequestId++; };
 /** @param {?} req @return {?} */
 Process a JSONP request and return an event stream of the results.
 JsonpClientBackend.prototype.handle = /** @param {?} req @return {?} */
 Process a JSONP request and return an event stream of the results.
 function (req) {
 var _this = this;
 // Firstly, check both the method and response type. If either
 // doesn't match then the request was improperly routed here and cannot be handled.
 if (req.method !== 'JSONP') {
 throw new Error(JSONP_ERR_WRONG_METHOD);
 } else if (req.responseType !== 'json') {
 throw new Error(JSONP_ERR_WRONG_RESPONSE_TYPE);
 }
 // Everything else happens inside the Observable boundary.
 return new Observable(function (observer) {
 // The first step to make a request is to generate the callback name, and replace the
 // callback placeholder in the URL with the name. Care has to be taken here to ensure
 // a trailing &, if matched, gets inserted back into the URL in the correct place.
 var /** @type {?} */ callback = _this.nextCallback();
 var /** @type {?} */ url = req.urlWithParams.replace(/=JSONP_CALLBACK(&|$)/, "=" + callback + "$1");
 // Construct the <script> tag and point it at the URL.
 var /** @type {?} */ node =

```



```

_this.document.createElement('script');\n node.src = url;\n // A JSONP request requires waiting for\nmultiple callbacks. These variables\n // are closed over and track state across those callbacks.\n // The\nresponse object, if one has been received, or null otherwise.\n var /** @type {?} */ body = null;\n // Whether the response callback has been called.\n var /** @type {?} */ finished = false;\n // Whether\nthe request has been cancelled (and thus any other callbacks)\n // should be ignored.\n var /** @type\n{?} */ cancelled = false;\n // Set the response callback in this.callbackMap (which will be the window\n// object in the browser. The script being loaded via the <script> tag will\n // eventually call this callback.\n // Set the response callback in this.callbackMap (which will be the window\n// object in the browser. The\nscript being loaded via the <script> tag will\n // eventually call this callback.\n_this.callbackMap[callback] = function (data) {\n // Data has been received from the JSONP script. Firstly,\ndelete this callback.\n delete _this.callbackMap[callback];\n // Next, make sure the request wasn't\ncancelled in the meantime.\n if (cancelled) {\n return;\n }\n // Set state to\nindicate data was received.\n body = data;\n finished = true;\n };\n // cleanup() is a\nutility closure that removes the <script> from the page and\n // the response callback from the window. This\nlogic is used in both the\n // success, error, and cancellation paths, so it's extracted out for convenience.\n var /** @type {?} */ cleanup = function () {\n // Remove the <script> tag if it's still on the page.\n if (node.parentNode) {\n node.parentNode.removeChild(node);\n }\n // Remove the\nresponse callback from the callbackMap (window object in the\n // browser).\n delete\n_this.callbackMap[callback];\n }; \n // onLoad() is the success callback which runs after the response\ncallback\n // if the JSONP script loads successfully. The event itself is unimportant.\n // If something\nwent wrong, onLoad() may run without the response callback\n // having been invoked.\n var /**\n@type {?} */ onLoad = function (event) {\n // Do nothing if the request has been cancelled.\n if\n(cancelled) {\n return;\n }\n // Cleanup the page.\n cleanup();\n // Check whether the response callback has run.\n if (!finished) {\n // It hasn't, something went\nwrong with the request. Return an error via\n // the Observable error path. All JSONP errors have status\n0.\n observer.error(new HttpResponse({\n url: url,\n status: 0,\n statusText: 'JSONP Error',\n error: new Error(JSONP_ERR_NO_CALLBACK),\n }));\n return;\n }\n // Success. body either contains the response body or null if none\nwas\n // returned.\n observer.next(new HttpResponse({\n body: body,\n status: 200,\n statusText: 'OK', url: url,\n }));\n // Complete the stream, the response is\nover.\n observer.complete();\n }; \n // onError() is the error callback, which runs if the script\nreturned generates\n // a Javascript error. It emits the error via the Observable error channel as\n // a\nHttpResponse.\n var /** @type {?} */ onError = function (error) {\n // If the request was\nalready cancelled, no need to emit anything.\n if (cancelled) {\n return;\n }\n cleanup();\n // Wrap the error in a HttpResponse.\n observer.error(new\nHttpResponse({\n error: error,\n status: 0,\n statusText: 'JSONP Error', url:\nurl,\n }));\n }; \n // Subscribe to both the success (load) and error events on the <script> tag,\n// and add it to the page.\n node.addEventListener('load', onLoad);\n node.addEventListener('error', onError);\n _this.document.body.appendChild(node);\n // The request\nhas now been successfully sent.\n observer.next({ type: HttpEventType.Sent });\n // Cancellation\nhandler.\n return function () {\n // Track the cancellation so event listeners won't do anything even if\nalready scheduled.\n cancelled = true;\n // Remove the event listeners so they won't run if the\nevents later fire.\n node.removeEventListener('load', onLoad);\n node.removeEventListener('error', onError);\n // And finally, clean up the page.\n cleanup();\n };\n }; \n JsonpClientBackend.decorators = [\n { type: Injectable },\n]; \n /** @nocollapse\n*/\n JsonpClientBackend.ctorParameters = function () { return [\n { type: JsonpCallbackContext },\n {\ntype: undefined, decorators: [{ type: Inject, args: [DOCUMENT,] },],\n }]; \n return\nJsonpClientBackend; \n}()); \n\n/**\n * An `HttpInterceptor` which identifies requests with the method JSONP and\n *

```

```

shifts them to the `JsonpClientBackend`.n *n * \\@stable.n *nvar JsonpInterceptor = /** @class */ (function ()
{
 function JsonpInterceptor(jsonp) {
 this.jsonp = jsonp;
 }
 /**
 * @param {?} req
 * @param {?} next
 * @return {?}
 */
 JsonpInterceptor.prototype.intercept = /**
 * @param {?} req
 * @param {?} next
 * @return {?}
 */
 function (req, next) {
 if (req.method === 'JSONP') {
 return this.jsonp.handle(/** @type {?} */ (req));
 }
 // Fall through for normal HTTP requests.
 return next.handle(req);
 };
 JsonpInterceptor.decorators = [
 { type: Injectable },
];
 /**
 * @nocollapse
 */
 JsonpInterceptor.ctorParameters = function () { return [
 { type: JsonpClientBackend },
]; };
 return JsonpInterceptor;
})();
n/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes}
checked by tsc
 *n/**
 * @license
 * Copyright Google Inc. All Rights Reserved.
 *n * Use of this source
code is governed by an MIT-style license that can be
 * found in the LICENSE file at https://angular.io/license
n *nvar XSSI_PREFIX = /\(\)\|\|\',?\|n;/n/**
 * Determine an appropriate URL for the response, by checking
either
 * XMLHttpRequest.responseURL or the X-Request-URL header.
 * @param {?} xhr
 * @return {?}
n *nfunction getUrl(xhr) {
 if ('responseURL' in xhr && xhr.responseURL) {
 return
xhr.responseURL;
 }
 if (/^X-Request-URL:/m.test(xhr.getAllResponseHeaders())) {
 return
xhr.getResponseHeader('X-Request-URL');
 }
 return null;
}
n/**
 * A wrapper around the
`XMLHttpRequest` constructor.
n *n * \\@stable.n * @abstract.n *nvar XhrFactory = /** @class */ (function ()
{
 function XhrFactory() {
 }
 return XhrFactory;
})();
n/**
 * A factory for \\@link HttpXhrBackend
that uses the `XMLHttpRequest` browser API.
n *n * \\@stable.n *nvar BrowserXhr = /** @class */ (function ()
{
 function BrowserXhr() {
 }
 /**
 * @return {?}
 */
 BrowserXhr.prototype.build = /**
 *
 * @return {?}
 */
 function () { return /** @type {?} */ ((new XMLHttpRequest())); };
 BrowserXhr.decorators = [
 { type: Injectable },
];
 /**
 * @nocollapse
 */
 BrowserXhr.ctorParameters
= function () { return []; };
 return BrowserXhr;
})();
n/**
 * An `HttpBackend` which uses the
XMLHttpRequest API to send
 * requests to a backend server.
n *n * \\@stable.n *nvar HttpXhrBackend = /**
 * @class */ (function () {
 function HttpXhrBackend(xhrFactory) {
 this.xhrFactory = xhrFactory;
 }
 /**
 * Process a request and return a stream of response events.
 */
 /**
 * Process a request and return
a stream of response events.
 * @param {?} req
 * @return {?}
 */
 HttpXhrBackend.prototype.handle
= /**
 * Process a request and return a stream of response events.
 * @param {?} req
 * @return {?}
 */
 function (req) {
 var _this = this;
 // Quick check to give a better error message when a user
attempts to use
 // HttpClient.jsonp() without installing the JsonpClientModule
 if (req.method ===
'JSONP') {
 throw new Error("Attempted to construct Jsonp request without JsonpClientModule
installed.");
 }
 // Everything happens on Observable subscription.
 return new Observable(function
(observer) {
 // Start by setting up the XHR object with request method, URL, and withCredentials flag.
 var /** @type {?} */ xhr = _this.xhrFactory.build();
 xhr.open(req.method, req.urlWithParams);
 if (!req.withCredentials) {
 xhr.withCredentials = true;
 }
 // Add all the requested
headers.
 req.headers.forEach(function (name, values) { return xhr.setRequestHeader(name, values.join(','));
});
 // Add an Accept header if one isn't present already.
 if (!req.headers.has('Accept')) {
 xhr.setRequestHeader('Accept', 'application/json, text/plain, */*');
 }
 // Auto-detect the Content-
Type header if one isn't present already.
 if (!req.headers.has('Content-Type')) {
 var /** @type
 {?} */ detectedType = req.detectContentTypeHeader();
 // Sometimes Content-Type detection fails.
 if (detectedType !== null) {
 xhr.setRequestHeader('Content-Type', detectedType);
 }
 }
 // Set the responseType if one was requested.
 if (req.responseType) {
 var /**
 * @type {?} */ responseType = req.responseType.toLowerCase();
 // JSON responses need to be processed
as text. This is because if the server
 // returns an XSSI-prefixed JSON response, the browser will fail to
parse it,
 // xhr.response will be null, and xhr.responseText cannot be accessed to
 // retrieve the
prefixed JSON data in order to strip the prefix. Thus, all JSON
 // is parsed by first requesting text and
then applying JSON.parse.
 xhr.responseType = /** @type {?} */ (((responseType !== 'json') ?
responseType : 'text'));
 }
 // Serialize the request body if one is present. If not, this will be set to
null.
 var /** @type {?} */ reqBody = req.serializeBody();
 // If progress events are enabled,

```

```

response headers will be delivered\n // in two events - the HttpHeadersResponse event and the full
HttpResponse\n // event. However, since response headers don't change in between these\n // two
events, it doesn't make sense to parse them twice. So headerResponse\n // caches the data extracted from the
response whenever it's first parsed,\n // to ensure parsing isn't duplicated.\n var /** @type {?} */
headerResponse = null;\n // partialFromXHR extracts the HttpHeadersResponse from the current
XMLHttpRequest\n // state, and memoizes it into headerResponse.\n var /** @type {?} */
partialFromXHR = function () {\n if (headerResponse !== null) {\n return headerResponse;\n
 }\n // Read status and normalize an IE9 bug (http://bugs.jquery.com/ticket/1450).\n var /**
@type {?} */ status = xhr.status === 1223 ? 204 : xhr.status;\n var /** @type {?} */ statusText =
xhr.statusText || 'OK';\n // Parse headers from XMLHttpRequest - this step is lazy.\n var /**
@type {?} */ headers = new HttpHeaders(xhr.getAllResponseHeaders());\n // Read the response URL from
the XMLHttpRequest instance and fall back on the\n // request URL.\n var /** @type {?} */ url
= getUrl(xhr) || req.url;\n // Construct the HttpHeadersResponse and memoize it.\n
headerResponse = new HttpHeadersResponse({ headers: headers, status: status, statusText: statusText, url: url });\n
 return headerResponse;\n };\n // Next, a few closures are defined for the various events which
XMLHttpRequest can\n // emit. This allows them to be unregistered as event listeners later.\n // First
up is the load event, which represents a response being fully available.\n var /** @type {?} */ onLoad =
function () {\n // Read response state from the memoized partial data.\n var _a =
partialFromXHR(), headers = _a.headers, status = _a.status, statusText = _a.statusText, url = _a.url;\n // The
body will be read out if present.\n var /** @type {?} */ body = null;\n if (status !== 204) {\n
 // Use XMLHttpRequest.response if set, responseText otherwise.\n body = (typeof xhr.response
=== 'undefined') ? xhr.responseText : xhr.response;\n }\n // Normalize another potential bug (this
one comes from CORS).\n if (status === 0) {\n status = !!body ? 200 : 0;\n }\n
 // ok determines whether the response will be transmitted on the event or\n // error channel. Unsuccessful
status codes (not 2xx) will always be errors,\n // but a successful status code can still result in an error if the
user\n // asked for JSON data and the body cannot be parsed as such.\n var /** @type {?} */ ok =
status >= 200 && status < 300;\n // Check whether the body needs to be parsed as JSON (in many cases
the browser\n // will have done that already).\n if (req.responseType === 'json' && typeof body
=== 'string') {\n // Save the original body, before attempting XSS prefix stripping.\n var /**
@type {?} */ originalBody = body;\n body = body.replace(XSSI_PREFIX, "");\n try {\n
 // Attempt the parse. If it fails, a parse error should be delivered to the user.\n body = body
!== " ? JSON.parse(body) : null;\n }\n catch (** @type {?} */ error) {\n //
Since the JSON.parse failed, it's reasonable to assume this might not have been a\n // JSON response.
Restore the original body (including any XSS prefix) to deliver\n // a better error response.\n
 body = originalBody;\n // If this was an error request to begin with, leave it as a string, it
probably\n // just isn't JSON. Otherwise, deliver the parsing error to the user.\n if (ok)
{\n // Even though the response status was 2xx, this is still an error.\n ok = false;\n
 // The parse error contains the text of the body that failed to parse.\n body = /**
@type {?} */ ({ error: error, text: body });\n }\n }\n if (ok) {\n
 // A successful response is delivered on the event stream.\n observer.next(new HttpHeadersResponse({\n
 body: body,\n headers: headers,\n status: status,\n statusText:
statusText,\n url: url || undefined,\n }));\n // The full body has been received
and delivered, no further events\n // are possible. This request is complete.\n
observer.complete();\n }\n else {\n // An unsuccessful request is delivered on the error
channel.\n observer.error(new HttpErrorResponse({\n // The error in this case is the
response body (error from the server).\n error: body,\n headers: headers,\n
status: status,\n statusText: statusText,\n url: url || undefined,\n }));\n
 }\n };\n // The onError callback is called when something goes wrong at the network level.\n

```

```

Connection timeout, DNS error, offline, etc. These are actual errors, and are // transmitted on the error
channel.\n var /** @type {?} */ onError = function (error) {\n var /** @type {?} */ res = new
HttpErrorResponse({\n error: error,\n status: xhr.status || 0,\n statusText:
xhr.statusText || 'Unknown Error',\n });\n observer.error(res);\n });\n // The
sentHeaders flag tracks whether the HttpResponseHeaders event\n // has been sent on the stream. This is
necessary to track if progress\n // is enabled since the event will be sent on only the first download\n //
progress event.\n var /** @type {?} */ sentHeaders = false;\n // The download progress event handler,
which is only registered if\n // progress events are enabled.\n var /** @type {?} */ onDownProgress =
function (event) {\n // Send the HttpResponseHeaders event if it hasn't been sent already.\n if
(!sentHeaders) {\n observer.next(partialFromXhr());\n sentHeaders = true;\n }\n // Start building the download progress event to deliver on the response\n // event stream.\n
var /** @type {?} */ progressEvent = {\n type: HttpEventType.DownloadProgress,\n
loaded: event.loaded,\n });\n // Set the total number of bytes in the event if it's available.\n
if (event.lengthComputable) {\n progressEvent.total = event.total;\n }\n // If the
request was for text content and a partial response is\n // available on XMLHttpRequest, include it in the
progress event\n // to allow for streaming reads.\n if (req.responseType === 'text' &&
!xhr.responseText) {\n progressEvent.partialText = xhr.responseText;\n }\n //
Finally, fire the event.\n observer.next(progressEvent);\n });\n // The upload progress event
handler, which is only registered if\n // progress events are enabled.\n var /** @type {?} */
onUpProgress = function (event) {\n // Upload progress events are simpler. Begin building the progress\n
// event.\n var /** @type {?} */ progress = {\n type: HttpEventType.UploadProgress,\n
loaded: event.loaded,\n });\n // If the total number of bytes being uploaded is available,
include\n // it.\n if (event.lengthComputable) {\n progress.total = event.total;\n
 }\n // Send the event.\n observer.next(progress);\n });\n // By default, register for
load and error events.\n xhr.addEventListener('load', onLoad);\n xhr.addEventListener('error',
onError);\n // Progress events are only enabled if requested.\n if (req.reportProgress) {\n //
Download progress is always enabled if requested.\n xhr.addEventListener('progress', onDownProgress);\n
 // Upload progress depends on whether there is a body to upload.\n if (reqBody !== null &&
xhr.upload) {\n xhr.upload.addEventListener('progress', onUpProgress);\n }\n }\n
// Fire the request, and notify the event stream that it was fired.\n xhr.send(reqBody);\n observer.next({
type: HttpEventType.Sent });\n // This is the return from the Observable function, which is the\n //
request cancellation handler.\n return function () {\n // On a cancellation, remove all registered
event listeners.\n xhr.removeEventListener('error', onError);\n xhr.removeEventListener('load',
onLoad);\n if (req.reportProgress) {\n xhr.removeEventListener('progress',
onDownProgress);\n if (reqBody !== null && xhr.upload) {\n
xhr.upload.removeEventListener('progress', onUpProgress);\n }\n }\n // Finally, abort
the in-flight request.\n xhr.abort();\n });\n });\n HttpXhrBackend.decorators = [\n {
type: Injectable },\n];\n /** @nocollapse */\n HttpXhrBackend.ctorParameters = function () { return [\n {
type: XhrFactory },\n]; }; return HttpXhrBackend;\n });\n /**\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
 *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n */\n nvar XSRF_COOKIE_NAME = new
InjectionToken('XSRF_COOKIE_NAME');\n nvar XSRF_HEADER_NAME = new
InjectionToken('XSRF_HEADER_NAME');\n /**\n * Retrieves the current XSRF token to use with the next
outgoing request.\n */\n @stable\n @abstract\n nvar HttpXsrfTokenExtractor = /** @class */ (function () {\n
function HttpXsrfTokenExtractor() {\n }\n return HttpXsrfTokenExtractor;\n });\n /**\n * `HttpXsrfTokenExtractor` which retrieves the token from a cookie.\n */\n nvar HttpXsrfCookieExtractor = /** @class
*/ (function () {\n function HttpXsrfCookieExtractor(doc, platform, cookieName) {\n this.doc = doc;\n

```

```

this.platform = platform;\n this.cookieName = cookieName;\n this.lastCookieString = ";\n
this.lastToken = null;\n /**\n * \\@internal for testing\n */\n this.parseCount = 0;\n }\n /**\n * @return {?}\n */\n HttpXsrfCookieExtractor.prototype.getToken = /**\n * @return {?}\n */\n function\n () {\n if (this.platform === 'server') {\n return null;\n }\n var /** @type {?} */ cookieString =\n this.doc.cookie || ";\n if (cookieString !== this.lastCookieString) {\n this.parseCount++;\n this.lastToken = parseCookieValue(cookieString, this.cookieName);\n this.lastCookieString =\n cookieString;\n }\n return this.lastToken;\n };\n HttpXsrfCookieExtractor.decorators = [\n { type:\n Injectable },\n];\n /** @nocollapse */\n HttpXsrfCookieExtractor.ctorParameters = function () { return [\n { type: undefined, decorators: [{ type: Inject, args: [DOCUMENT,] },],\n { type: undefined, decorators: [{\n type: Inject, args: [PLATFORM_ID,] },],\n { type: undefined, decorators: [{ type: Inject, args:\n [XSRF_COOKIE_NAME,] },],\n },\n];\n }; return HttpXsrfCookieExtractor;\n });\n /**\n * `HttpInterceptor`\n * which adds an XSRF token to eligible outgoing requests.\n */\n nvar HttpXsrfInterceptor = /** @class */ (function ()\n {\n function HttpXsrfInterceptor(tokenService, headerName) {\n this.tokenService = tokenService;\n this.headerName = headerName;\n }\n /**\n * @param {?} req\n * @param {?} next\n * @return {?}\n */\n HttpXsrfInterceptor.prototype.intercept = /**\n * @param {?} req\n * @param {?} next\n * @return\n {?}\n */\n function (req, next) {\n var /** @type {?} */ lcUrl = req.url.toLowerCase();\n // Skip both\n non-mutating requests and absolute URLs.\n // Non-mutating requests don't require a token, and absolute URLs\n require special handling\n // anyway as the cookie set\n // on our origin is not the same as the token\n expected by another origin.\n if (req.method === 'GET' || req.method === 'HEAD' || lcUrl.startsWith('http://')\n ||\n lcUrl.startsWith('https://')) {\n return next.handle(req);\n }\n var /** @type {?} */ token =\n this.tokenService.getToken();\n // Be careful not to overwrite an existing header of the same name.\n if\n (token !== null && !req.headers.has(this.headerName)) {\n req = req.clone({ headers:\n req.headers.set(this.headerName, token) });\n }\n return next.handle(req);\n };\n HttpXsrfInterceptor.decorators = [\n { type: Injectable },\n];\n /** @nocollapse */\n HttpXsrfInterceptor.ctorParameters = function () { return [\n { type: HttpXsrfTokenExtractor, },\n { type:\n undefined, decorators: [{ type: Inject, args: [XSRF_HEADER_NAME,] },],\n },\n];\n }; return\n HttpXsrfInterceptor;\n });\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by\n tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n */\n /**\n * Use of this source code is\n governed by an MIT-style license that can be\n found in the LICENSE file at https://angular.io/license\n */\n /**\n * Constructs an `HttpHandler` that applies a bunch of `HttpInterceptor`\n s\n * to a request before passing it to the\n given `HttpBackend`.\n */\n /**\n * Meant to be used as a factory function within `HttpClientModule`.\n */\n /**\n * \\@stable\n */\n /**\n * @param {?} backend\n * @param {?=} interceptors\n * @return {?}\n */\n /**\n * \\nfunction interceptingHandler(backend,\n interceptors) {\n if (interceptors === void 0) { interceptors = [];\n }\n if (!interceptors) {\n return backend;\n }\n return interceptors.reduceRight(function (next, interceptor) { return new\n HttpInterceptorHandler(next,\n interceptor); }, backend);\n };\n /**\n * Factory function that determines where to store JSONP callbacks.\n */\n /**\n * Ordinarily JSONP callbacks are stored on the `window` object, but this may not exist\n * in test environments. In\n that case, callbacks are stored on an anonymous object instead.\n */\n /**\n * \\@stable\n */\n /**\n * @return {?}\n */\n /**\n * \\nfunction\n jsonpCallbackContext() {\n if (typeof window === 'object') {\n return window;\n }\n return {};\n };\n /**\n * `NgModule` which adds XSRF protection support to outgoing requests.\n */\n /**\n * Provided the server supports a\n cookie-based XSRF protection system, this\n * module can be used directly to configure XSRF protection with the\n correct\n * cookie and header names.\n */\n /**\n * If no such names are provided, the default is to use `X-XSRF-TOKEN`\n for\n * the header name and `XSRF-TOKEN` for the cookie name.\n */\n /**\n * \\@stable\n */\n nvar\n HttpClientXsrfModule = /** @class */ (function () {\n function\n HttpClientXsrfModule() {\n }\n /**\n * Disable the default XSRF protection.\n */\n /**\n * Disable the default XSRF protection.\n */\n @return\n {?}\n /**\n * \\n\n HttpClientXsrfModule.disable = /**\n * Disable the default XSRF protection.\n */\n @return {?}\n /**\n * \\n\n function () {\n return {\n ngModule: HttpClientXsrfModule,\n providers: [\n {\n provide: HttpXsrfInterceptor, useClass: NoopInterceptor\n },\n],\n };\n };\n /**\n * Configure XSRF\n protection to use the given cookie name or header name,\n * or the default names (as described above) if not

```



```

Google, Inc. https://angular.io\n * License: MIT\n *\nimport { __assign, __extends } from 'tslib';\n\n**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n *\n// Attention:\n// This file duplicates types and values
from @angular/core\n// so that we are able to make @angular/compiler independent of @angular/core.\n// This is
important to prevent a build cycle, as @angular/core needs to\n// be compiled with the compiler.\n**\n * @record\n
*\nfunction Inject() { }\nvar createInject = makeMetadataFactory('Inject', function (token) { return ({ token: token
}); });\nvar createInjectionToken = makeMetadataFactory('InjectionToken', function (desc) { return ({ _desc: desc
}); });\n**\n * @record\n *\nfunction Attribute() { }\nvar createAttribute = makeMetadataFactory('Attribute',
function (attributeName) { return ({ attributeName: attributeName }); });\n**\n * @record\n *\nfunction Query() {
}\nvar createContentChildren = makeMetadataFactory('ContentChildren', function (selector, data) {\n if (data ===
void 0) { data = {}; }\n return (__assign({ selector: selector, first: false, isViewQuery: false, descendants: false },
data));\n});\nvar createContentChild = makeMetadataFactory('ContentChild', function (selector, data) {\n if (data
=== void 0) { data = {}; }\n return (__assign({ selector: selector, first: true, isViewQuery: false, descendants: true
}, data));\n});\nvar createViewChildren = makeMetadataFactory('ViewChildren', function (selector, data) {\n if
(data === void 0) { data = {}; }\n return (__assign({ selector: selector, first: false, isViewQuery: true,
descendants: true }, data));\n});\nvar createViewChild = makeMetadataFactory('ViewChild', function (selector,
data) {\n return (__assign({ selector: selector, first: true, isViewQuery: true, descendants: true },
data));\n});\n**\n * @record\n *\nfunction Directive() { }\nvar createDirective =
makeMetadataFactory('Directive', function (dir) {\n if (dir === void 0) { dir = {}; }\n return dir;\n});\n**\n *
@record\n *\nfunction Component() { }\n** @enum {number} *\nvar ViewEncapsulation = {\n Emulated: 0,\n Native: 1,\n None: 2,\n};\nViewEncapsulation[ViewEncapsulation.Emulated] =
'Emulated';\nViewEncapsulation[ViewEncapsulation.Native] =
'Native';\nViewEncapsulation[ViewEncapsulation.None] = 'None';\n** @enum {number} *\nvar
ChangeDetectionStrategy = {\n OnPush: 0,\n Default:
1,\n};\nChangeDetectionStrategy[ChangeDetectionStrategy.OnPush] =
'OnPush';\nChangeDetectionStrategy[ChangeDetectionStrategy.Default] = 'Default';\nvar createComponent =
makeMetadataFactory('Component', function (c) {\n if (c === void 0) { c = {}; }\n return (__assign({
changeDetection: ChangeDetectionStrategy.Default }, c));\n});\n**\n * @record\n *\nfunction Pipe() { }\nvar
createPipe = makeMetadataFactory('Pipe', function (p) { return (__assign({ pure: true }, p)); });\n**\n * @record\n
*\nfunction Input() { }\nvar createInput = makeMetadataFactory('Input', function (bindingPropertyName) { return
({ bindingPropertyName: bindingPropertyName }); });\n**\n * @record\n *\nfunction Output() { }\nvar
createOutput = makeMetadataFactory('Output', function (bindingPropertyName) { return ({ bindingPropertyName:
bindingPropertyName }); });\n**\n * @record\n *\nfunction HostBinding() { }\nvar createHostBinding =
makeMetadataFactory('HostBinding', function (hostPropertyName) { return ({ hostPropertyName:
hostPropertyName }); });\n**\n * @record\n *\nfunction HostListener() { }\nvar createHostListener =
makeMetadataFactory('HostListener', function (eventName, args) { return ({ eventName: eventName, args: args });
});\n**\n * @record\n *\nfunction NgModule() { }\nvar createNgModule = makeMetadataFactory('NgModule',
function (ngModule) { return ngModule; });\n**\n * @record\n *\nfunction ModuleWithProviders() { }\n**\n *
@record\n *\nfunction SchemaMetadata() { }\nvar CUSTOM_ELEMENTS_SCHEMA = {\n name: 'custom-
elements'\n};\nvar NO_ERRORS_SCHEMA = {\n name: 'no-errors-schema'\n};\nvar createOptional =
makeMetadataFactory('Optional');\nvar createInjectable = makeMetadataFactory('Injectable');\nvar createSelf =
makeMetadataFactory('Self');\nvar createSkipSelf = makeMetadataFactory('SkipSelf');\nvar createHost =
makeMetadataFactory('Host');\nvar Type = Function;\n** @enum {number} *\nvar SecurityContext = {\n
NONE: 0,\n HTML: 1,\n STYLE: 2,\n SCRIPT: 3,\n URL: 4,\n RESOURCE_URL:
5,\n};\nSecurityContext[SecurityContext.NONE] = 'NONE';\nSecurityContext[SecurityContext.HTML] =
'HTML';\nSecurityContext[SecurityContext.STYLE] = 'STYLE';\nSecurityContext[SecurityContext.SCRIPT]
= 'SCRIPT';\nSecurityContext[SecurityContext.URL] =

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"URL";\nSecurityContext[SecurityContext.RESOURCE_URL] = "RESOURCE_URL";\n/** @enum {number}
*\nvar NodeFlags = {\n None: 0,\n TypeElement: 1,\n TypeText: 2,\n ProjectedTemplate: 4,\n
CatRenderNode: 3,\n TypeNgContent: 8,\n TypePipe: 16,\n TypePureArray: 32,\n TypePureObject: 64,\n
TypePurePipe: 128,\n CatPureExpression: 224,\n TypeValueProvider: 256,\n TypeClassProvider: 512,\n
TypeFactoryProvider: 1024,\n TypeUseExistingProvider: 2048,\n LazyProvider: 4096,\n PrivateProvider:
8192,\n TypeDirective: 16384,\n Component: 32768,\n CatProviderNoDirective: 3840,\n CatProvider:
20224,\n OnInit: 65536,\n OnDestroy: 131072,\n DoCheck: 262144,\n OnChanges: 524288,\n
AfterContentInit: 1048576,\n AfterContentChecked: 2097152,\n AfterViewInit: 4194304,\n
AfterViewChecked: 8388608,\n EmbeddedViews: 16777216,\n ComponentView: 33554432,\n
TypeContentQuery: 67108864,\n TypeViewQuery: 134217728,\n StaticQuery: 268435456,\n DynamicQuery:
536870912,\n CatQuery: 201326592,\n // mutually exclusive values...\n Types: 201347067,\n};\n/** @enum
{number} *\nvar DepFlags = {\n None: 0,\n SkipSelf: 1,\n Optional: 2,\n Value: 8,\n};\n/** @enum
{number} *\nvar ArgumentType = { Inline: 0, Dynamic: 1, };;\n/** @enum {number} *\nvar BindingFlags = {\n
TypeElementAttribute: 1,\n TypeElementClass: 2,\n TypeElementStyle: 4,\n TypeProperty: 8,\n
SyntheticProperty: 16,\n SyntheticHostProperty: 32,\n CatSyntheticProperty: 48,\n // mutually exclusive
values...\n Types: 15,\n};;\n/** @enum {number} *\nvar QueryBindingType = { First: 0, All: 1, };;\n/** @enum
{number} *\nvar QueryValueType = {\n ElementRef: 0,\n RenderElement: 1,\n TemplateRef: 2,\n
ViewContainerRef: 3,\n Provider: 4,\n};;\n/** @enum {number} *\nvar ViewFlags = {\n None: 0,\n OnPush:
2,\n};;\n/** @enum {number} *\nvar MissingTranslationStrategy = {\n Error: 0,\n Warning: 1,\n Ignore:
2,\n};;\nMissingTranslationStrategy[MissingTranslationStrategy.Error] =
"Error";\nMissingTranslationStrategy[MissingTranslationStrategy.Warning] =
"Warning";\nMissingTranslationStrategy[MissingTranslationStrategy.Ignore] = "Ignore";\n/**\n * @record\n
*\nfunction MetadataFactory() { }\n/**\n * @template T\n * @param {?} name\n * @param {?} props\n *
@return {?} *\nfunction makeMetadataFactory(name, props) {\n var /** @type {?} */ factory = function () {\n
 var args = [];\n for (var _i = 0; _i < arguments.length; _i++) {\n args[_i] = arguments[_i];\n }\n
 var /** @type {?} */ values = props ? props.apply(void 0, args) : {};\n return __assign({ ngMetadataName:
name }, values);\n };\n factory.isTypeOf = function (obj) { return obj && obj.ngMetadataName === name; };\n
 factory.ngMetadataName = name;\n return factory;\n};\n/**\n * @record\n *\nfunction Route() { }\n\n\nvar
core = Object.freeze({\n \tInject: Inject,\n \tcreateInject: createInject,\n \tcreateInjectionToken:
createInjectionToken,\n \tAttribute: Attribute,\n \tcreateAttribute: createAttribute,\n \tQuery:
Query,\n \tcreateContentChildren: createContentChildren,\n \tcreateContentChild:
createContentChild,\n \tcreateViewChildren: createViewChildren,\n \tcreateViewChild:
createViewChild,\n \tDirective: Directive,\n \tcreateDirective: createDirective,\n \tComponent:
Component,\n \tViewEncapsulation: ViewEncapsulation,\n \tChangeDetectionStrategy:
ChangeDetectionStrategy,\n \tcreateComponent: createComponent,\n \tPipe: Pipe,\n \tcreatePipe: createPipe,\n
\tInput: Input,\n \tcreateInput: createInput,\n \tOutput: Output,\n \tcreateOutput: createOutput,\n
\tHostBinding: HostBinding,\n \tcreateHostBinding: createHostBinding,\n \tHostListener: HostListener,\n
\tcreateHostListener: createHostListener,\n \tNgModule: NgModule,\n \tcreateNgModule: createNgModule,\n
\tModuleWithProviders: ModuleWithProviders,\n \tSchemaMetadata: SchemaMetadata,\n \tCUSTOM_ELEMENTS_SCHEMA:
CUSTOM_ELEMENTS_SCHEMA,\n \tNO_ERRORS_SCHEMA: NO_ERRORS_SCHEMA,\n \tcreateOptional:
createOptional,\n \tcreateInjectable: createInjectable,\n \tcreateSelf: createSelf,\n \tcreateSkipSelf:
createSkipSelf,\n \tcreateHost: createHost,\n \tType: Type,\n \tSecurityContext: SecurityContext,\n
\tNodeFlags: NodeFlags,\n \tDepFlags: DepFlags,\n \tArgumentType: ArgumentType,\n \tBindingFlags:
BindingFlags,\n \tQueryBindingType: QueryBindingType,\n \tQueryValueType: QueryValueType,\n \tViewFlags:
ViewFlags,\n \tMissingTranslationStrategy: MissingTranslationStrategy,\n \tMetadataFactory:
MetadataFactory,\n \tRoute: Route\n});\n\n\n\n * @fileoverview added by tsickle\n * @suppress {checkTypes}
checked by tsc\n *\n *\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source
code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n

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*\nvar DASH_CASE_REGEXP = /-+([a-z0-9])/g;\n/**\n * @param {?} input\n * @return {?}\n */\nfunction
dashCaseToCamelCase(input) {\n return input.replace(DASH_CASE_REGEXP, function () {\n var m = [];\n
 for (var _i = 0; _i < arguments.length; _i++) {\n m[_i] = arguments[_i];\n }\n return
m[1].toUpperCase();\n });\n}\n/**\n * @param {?} input\n * @param {?} defaultValues\n * @return {?}\n */\nfunction splitAtColon(input, defaultValues) {\n return _splitAt(input, ':', defaultValues);\n}\n/**\n * @param
 {?} input\n * @param {?} defaultValues\n * @return {?}\n */\nfunction splitAtPeriod(input, defaultValues) {\n
return _splitAt(input, '.', defaultValues);\n}\n/**\n * @param {?} input\n * @param {?} character\n * @param {?}
defaultValues\n * @return {?}\n */\nfunction _splitAt(input, character, defaultValues) {\n var /** @type {?} */
characterIndex = input.indexOf(character);\n if (characterIndex === -1)\n return defaultValues;\n return
[input.slice(0, characterIndex).trim(), input.slice(characterIndex + 1).trim()];\n}\n/**\n * @param {?} value\n *
@param {?} visitor\n * @param {?} context\n * @return {?}\n */\nfunction visitValue(value, visitor, context) {\n
if (Array.isArray(value)) {\n return visitor.visitArray(/** @type {?} */(value), context);\n } \n if
(isStrictStringMap(value)) {\n return visitor.visitStringMap(/** @type {?} */(value), context);\n } \n if
(value === null || typeof value === 'string' || typeof value === 'number' ||\n typeof value === 'boolean') {\n return
visitor.visitPrimitive(value, context);\n } \n return visitor.visitOther(value, context);\n}\n/**\n * @param {?}
val\n * @return {?}\n */\nfunction isDefined(val) {\n return val !== null && val !== undefined;\n}\n/**\n *
@param T\n * @param {?} val\n * @return {?}\n */\nfunction noUndefined(val) {\n return val === undefined
? /** @type {?} */((null)) : val;\n}\n/**\n * @record\n * \nvar ValueTransformer = /** @class */(function () {\n
function ValueTransformer() {\n } \n /**\n * @param {?} arr\n * @param {?} context\n * @return
{?}\n */\n * \n ValueTransformer.prototype.visitArray = /**\n * @param {?} arr\n * @param {?} context\n
* @return {?}\n */\n * \n function (arr, context) {\n var _this = this;\n return arr.map(function (value) {\n
return visitValue(value, _this, context); });\n };\n /**\n * @param {?} map\n * @param {?} context\n *
@return {?}\n */\n * \n ValueTransformer.prototype.visitStringMap = /**\n * @param {?} map\n * @param
 {?} context\n * @return {?}\n */\n * \n function (map, context) {\n var _this = this;\n var /** @type {?} */
result = {};\n Object.keys(map).forEach(function (key) {\n result[key] = visitValue(map[key], _this, context);
});\n return result;\n };\n /**\n * @param {?} value\n * @param {?} context\n * @return {?}\n */\n * \n
ValueTransformer.prototype.visitPrimitive = /**\n * @param {?} value\n * @param {?} context\n *
@return {?}\n */\n * \n function (value, context) {\n return value;\n };\n /**\n * @param {?} value\n * @param
 {?} context\n * @return {?}\n */\n * \n ValueTransformer.prototype.visitOther = /**\n * @param {?} value\n
* @param {?} context\n * @return {?}\n */\n * \n function (value, context) {\n return value;\n };\n return
ValueTransformer;\n}());\nvar SyncAsync = {\n assertSync: function (value) {\n if (isPromise(value)) {\n
throw new Error('Illegal state: value cannot be a promise');\n }\n return value;\n },\n then: function
(value, cb) {\n return isPromise(value) ? value.then(cb) : cb(value);\n },\n all: function (syncAsyncValues) {\n
return syncAsyncValues.some(isPromise) ? Promise.all(syncAsyncValues) : /** @type {?} */(syncAsyncValues);\n }
};\n/**\n * @param {?} msg\n * @param {=} parseErrors\n * @return {?}\n */\nfunction syntaxError(msg, parseErrors) {\n var /** @type {?} */ error = Error(msg);\n (/** @type {?} */
(error))[ERROR_SYNTAX_ERROR] = true;\n if (parseErrors)\n (/** @type {?} */(error))[ERROR_PARSE_ERRORS] = parseErrors;\n return error;\n}\nvar ERROR_SYNTAX_ERROR =
'ngSyntaxError';\nvar ERROR_PARSE_ERRORS = 'ngParseErrors';\n/**\n * @param {?} error\n * @return {?}\n */\nfunction isSyntaxError(error) {\n return (/** @type {?} */(error))[ERROR_SYNTAX_ERROR];\n}\n/**\n *
@param {?} error\n * @return {?}\n */\nfunction getParseErrors(error) {\n return (/** @type {?} */(error))[ERROR_PARSE_ERRORS] || [];\n}\n/**\n * @param {?} s\n * @return {?}\n */\nfunction
escapeRegExp(s) {\n return s.replace(/([.*+?^=!:${}()|\[\]\/\\])/g, '\\\\$1');\n}\nvar STRING_MAP_PROTO =
Object.getPrototypeOf({});\n/**\n * @param {?} obj\n * @return {?}\n */\nfunction isStrictStringMap(obj) {\n
return typeof obj === 'object' && obj !== null && Object.getPrototypeOf(obj) ===
STRING_MAP_PROTO;\n}\n/**\n * @param {?} str\n * @return {?}\n */\nfunction utf8Encode(str) {\n var /**
@type {?} */ encoded = '';\n for (var /** @type {?} */ index = 0; index < str.length; index++) {\n var /**
@type {?} */ codePoint = str.charCodeAt(index);\n // decode surrogate\n // see

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https://mathiasbynens.be/notes/javascript-encoding#surrogate-formulae
if (codePoint >= 0xd800 && codePoint <= 0xdbff && str.length > (index + 1)) {
 var /** @type {?} */ low = str.charCodeAt(index + 1);
 if (low >= 0xdc00 && low <= 0xdfff) {
 index++;
 codePoint = ((codePoint - 0xd800) << 10) + low - 0xdc00 + 0x10000;
 }
 if (codePoint <= 0x7f) {
 encoded += String.fromCharCode(codePoint);
 } else if (codePoint <= 0x7ff) {
 encoded += String.fromCharCode(((codePoint >> 6) & 0x1f) | 0xc0, (codePoint & 0x3f) | 0x80);
 } else if (codePoint <= 0xffff) {
 encoded += String.fromCharCode((codePoint >> 12) | 0xe0, ((codePoint >> 6) & 0x3f) | 0x80, (codePoint & 0x3f) | 0x80);
 } else if (codePoint <= 0x1ffff) {
 encoded += String.fromCharCode(((codePoint >> 18) & 0x07) | 0xf0, ((codePoint >> 12) & 0x3f) | 0x80, ((codePoint >> 6) & 0x3f) | 0x80, (codePoint & 0x3f) | 0x80);
 }
}
return encoded;
}

/**
 * @record
 * @param {?} token
 * @return {?}
 */
function stringify(token) {
 if (typeof token === 'string') {
 return token;
 }
 if (token instanceof Array) {
 return '[' + token.map(stringify).join(', ') + ']';
 }
 if (token == null) {
 return '' + token;
 }
 if (token.overriddenName) {
 return '\\' + token.overriddenName;
 }
 if (token.name) {
 return '\\' + token.name;
 }
 var /** @type {?} */ res = token.toString();
 if (res == null) {
 return '' + res;
 }
 var /** @type {?} */ newLineIndex = res.indexOf('\n');
 return newLineIndex === -1 ? res : res.substring(0, newLineIndex);
}

/**
 * Lazily retrieves the reference value from a forwardRef.
 * @param {?} type
 * @return {?}
 */
function resolveForwardRef(type) {
 if (typeof type === 'function' && type.hasOwnProperty('__forward_ref__')) {
 return type();
 }
 else {
 return type;
 }
}

/**
 * Determine if the argument is shaped like a Promise
 * @param {?} obj
 * @return {?}
 */
function isPromise(obj) {
 // allow any Promise/A+ compliant thenable.
 // It's up to the caller to ensure that obj.then conforms to the spec
 return !!obj && typeof obj.then === 'function';
}

var Version = /** @class */ (function () {
 function Version(full) {
 this.full = full;
 var /** @type {?} */ splits = full.split('.');
 this.major = splits[0];
 this.minor = splits[1];
 this.patch = splits.slice(2).join('.');
 }
 return Version;
})();

/**
 * @record
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
 * @stable
 * @nvar VERSION = new Version('5.2.1');
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
 * An Abstract Syntax Tree node representing part of a parsed Angular template.
 * @record
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
 * A segment of text within the template.
 * @nvar TextAst = /** @class */ (function () {
 function TextAst(value, ngContentIndex, sourceSpan) {
 this.value = value;
 this.ngContentIndex = ngContentIndex;
 this.sourceSpan = sourceSpan;
 }
 /**
 * @param {?} visitor
 * @param {?} context
 * @return {?}
 */
 TextAst.prototype.visit = /**
 * @param {?} visitor
 * @param {?} context
 * @return {?}
 */
 function (visitor, context) {
 return visitor.visitText(this, context);
 };
 /**
 * A bound expression within the text of a template.
 * @nvar BoundTextAst = /** @class */ (function () {
 function BoundTextAst(value, ngContentIndex, sourceSpan) {
 this.value = value;
 this.ngContentIndex = ngContentIndex;
 this.sourceSpan = sourceSpan;
 }
 /**
 * @param {?} visitor
 * @param {?} context
 * @return {?}
 */
 BoundTextAst.prototype.visit = /**
 * @param {?} visitor
 * @param {?} context
 * @return {?}
 */
 function (visitor, context) {
 return visitor.visitBoundText(this, context);
 };
 /**
 * A plain attribute on an element.
 * @nvar AttrAst = /** @class */ (function () {
 function AttrAst(name, value, sourceSpan) {
 this.name = name;
 this.value = value;
 this.sourceSpan = sourceSpan;
 }
 /**
 * @param {?} visitor
 * @param {?} context
 * @return {?}
 */
 AttrAst.prototype.visit = /**
 * @param {?} visitor
 * @param {?} context
 * @return {?}
 */
 function (visitor, context) {
 return visitor.visitAttr(this, context);
 };
 /**
 * A binding for an element property (e.g. `[property]="expression"`) or an animation trigger (e.g. `[@trigger]="stateExp"`)
 * @nvar BoundElementPropertyAst = /** @class */ (function () {

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{?}\n *^\n NullTemplateVisitor.prototype.visitNgContent = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitEmbeddedTemplate = /**\n * @param
{?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param
{?} ast\n * @param {?} context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitElement =
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n
NullTemplateVisitor.prototype.visitReference = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n NullTemplateVisitor.prototype.visitVariable = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitEvent = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitElementProperty = /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitAttr =
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n
NullTemplateVisitor.prototype.visitBoundText = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n NullTemplateVisitor.prototype.visitText = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitDirective = /**\n * @param {?} ast\n
* @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n NullTemplateVisitor.prototype.visitDirectiveProperty = /**\n
* @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n return
NullTemplateVisitor;\n})();\n/**\n * Base class that can be used to build a visitor that visits each node\n * in an
template ast recursively.\n */\nvar RecursiveTemplateAstVisitor = /** @class */ (function (_super) {\n
__extends(RecursiveTemplateAstVisitor, _super);\n function RecursiveTemplateAstVisitor() {\n return
_super.call(this) || this;\n } \n // Nodes with children\n /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *^\n RecursiveTemplateAstVisitor.prototype.visitEmbeddedTemplate = /**\n * @param {?}
ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) {\n return
this.visitChildren(context, function (visit) {\n visit(ast.attrs);\n visit(ast.references);\n
visit(ast.variables);\n visit(ast.directives);\n visit(ast.providers);\n visit(ast.children);\n });\n
}; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n
RecursiveTemplateAstVisitor.prototype.visitElement = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n function (ast, context) {\n return this.visitChildren(context, function (visit) {\n
visit(ast.attrs);\n visit(ast.inputs);\n visit(ast.outputs);\n visit(ast.references);\n
visit(ast.directives);\n visit(ast.providers);\n visit(ast.children);\n });\n }); \n /**\n * @param
{?} ast\n * @param {?} context\n * @return {?}\n *^\n
RecursiveTemplateAstVisitor.prototype.visitDirective = /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *^\n function (ast, context) {\n return this.visitChildren(context, function (visit) {\n
visit(ast.inputs);\n visit(ast.hostProperties);\n visit(ast.hostEvents);\n });\n }); \n /**\n *
@param T\n * @param {?} context\n * @param {?} cb\n * @return {?}\n *^\n
RecursiveTemplateAstVisitor.prototype.visitChildren = /**\n * @template T\n * @param {?} context\n *
@param {?} cb\n * @return {?}\n *^\n function (context, cb) {\n var /** @type {?} */ results = [];\n
var /** @type {?} */ t = this;\n /**\n * @template T\n * @param {?} children\n * @return {?}\n
*^\n function visit(children) {\n if (children && children.length)\n

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results.push(templateVisitAll(t, children, context));\n }\n cb(visit);\n return [].concat.apply([],
results);\n };\n return RecursiveTemplateAstVisitor;\n}(NullTemplateVisitor));\n\n/**\n * Visit every node in a
list of {@link TemplateAst}s with the given {@link TemplateAstVisitor}.\n * @param {?} visitor\n * @param
{?} asts\n * @param {?=} context\n * @return {?}\n */\nfunction templateVisitAll(visitor, asts, context) {\n if
(context === void 0) { context = null; }\n var /** @type {?} */ result = [];\n var /** @type {?} */ visit =
visitor.visit ?\n function (ast) { return ((visitor.visit)(ast, context) || ast.visit(visitor, context)); }\n :\n function
(ast) { return ast.visit(visitor, context); }\n asts.forEach(function (ast) {\n var /** @type {?} */ astResult =
visit(ast);\n if (astResult) {\n result.push(astResult);\n }\n });\n return result;\n}\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n */\n\nvar CompilerConfig = /** @class */ (function () {\n
function CompilerConfig(_a) {\n var _b = _a === void 0 ? {} : _a, _c = _b.defaultEncapsulation,
defaultEncapsulation = _c === void 0 ? ViewEncapsulation.Emulated : _c, _d = _b.useJit, useJit = _d === void 0 ?
true : _d, _e = _b.jitDevMode, jitDevMode = _e === void 0 ? false : _e, _f = _b.missingTranslation,
missingTranslation = _f === void 0 ? null : _f, enableLegacyTemplate = _b.enableLegacyTemplate,
preserveWhitespaces = _b.preserveWhitespaces, strictInjectionParameters = _b.strictInjectionParameters;\n this.defaultEncapsulation = defaultEncapsulation;\n this.useJit = !!useJit;\n this.jitDevMode =
!!jitDevMode;\n this.missingTranslation = missingTranslation;\n this.enableLegacyTemplate =
enableLegacyTemplate === true;\n this.preserveWhitespaces =
preserveWhitespacesDefault(noUndefined(preserveWhitespaces));\n this.strictInjectionParameters =
strictInjectionParameters === true;\n }\n return CompilerConfig;\n}());\n\n/**\n * @param {?}
preserveWhitespacesOption\n * @param {?=} defaultSetting\n * @return {?}\n */\nfunction
preserveWhitespacesDefault(preserveWhitespacesOption, defaultSetting) {\n if (defaultSetting === void 0) {\n
defaultSetting = true; }\n return preserveWhitespacesOption === null ? defaultSetting :\n
preserveWhitespacesOption;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked
by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n
* A token representing the a reference to a static type.\n * This token is unique for a filePath and name and can
be used as a hash table key.\n */\n\nvar StaticSymbol = /** @class */ (function () {\n function
StaticSymbol(filePath, name, members) {\n this.filePath = filePath;\n this.name = name;\n
this.members = members;\n }\n /**\n * @return {?}\n */\n StaticSymbol.prototype.assertNoMembers =
/**\n * @return {?}\n */\n function () {\n if (this.members.length) {\n throw new Error("Illegal
state: symbol without members expected, but got \" + JSON.stringify(this) + \".");\n }\n };\n return
StaticSymbol;\n}());\n\n/**\n * A cache of static symbol used by the StaticReflector to return the same symbol for
the\n * same symbol values.\n */\n\nvar StaticSymbolCache = /** @class */ (function () {\n function
StaticSymbolCache() {\n this.cache = new Map();\n }\n /**\n * @param {?} declarationFile\n *
@param {?} name\n * @param {?=} members\n * @return {?}\n */\n StaticSymbolCache.prototype.get =
/**\n * @param {?} declarationFile\n * @param {?} name\n * @param {?=} members\n * @return {?}\n */\n
function (declarationFile, name, members) {\n members = members || [];\n var /** @type {?} */
memberSuffix = members.length ? \".\" + members.join('.') : \"\";\n var /** @type {?} */ key = \"\" +
declarationFile + \"\" + name + memberSuffix;\n var /** @type {?} */ result = this.cache.get(key);\n if
(!result) {\n result = new StaticSymbol(declarationFile, name, members);\n this.cache.set(key,
result);\n }\n return result;\n };\n return StaticSymbolCache;\n}());\n\n/**\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\n// group 0: \"[prop] or (event) or @trigger\"\n// group 1: \"prop\"\n
from \"[prop]\"\n// group 2: \"event\"\nfrom \"(event)\"\n// group 3: \"@trigger\"\nfrom \"@trigger\"\n\nvar
HOST_REG_EXP = /^(?:([^\]]+)\]|(?:\(([\^\]]+)\)))\(\|@[-\w]+\)$/;\n\n/**\n * @param {?} name\n * @return

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{?}\n *\nfunction _sanitizeIdentifier(name) {\n return name.replace(/\\W/g, '_');\n}\nvar _anonymousTypeIndex
= 0;\n/**\n * @param {?} compileIdentifier\n * @return {?}\n *\nfunction identifierName(compileIdentifier) {\n
if (!compileIdentifier || !compileIdentifier.reference) {\n return null;\n }\n var /** @type {?} */ ref =
compileIdentifier.reference;\n if (ref instanceof StaticSymbol) {\n return ref.name;\n }\n if
(ref['__anonymousType']) {\n return ref['__anonymousType'];\n }\n var /** @type {?} */ identifier =
stringify(ref);\n if (identifier.indexOf('(') >= 0) {\n // case: anonymous functions!\n identifier =
'anonymous_' + _anonymousTypeIndex++;\n ref['__anonymousType'] = identifier;\n }\n else {\n
identifier = _sanitizeIdentifier(identifier);\n }\n return identifier;\n}\n/**\n * @param {?} compileIdentifier\n *
@return {?}\n *\nfunction identifierModuleName(compileIdentifier) {\n var /** @type {?} */ ref =
compileIdentifier.reference;\n if (ref instanceof StaticSymbol) {\n return ref.filePath;\n }\n // Runtime
type\n return '\\.^' + stringify(ref);\n}\n/**\n * @param {?} compType\n * @param {?}\n
embeddedTemplateIndex\n * @return {?}\n *\nfunction viewClassName(compType, embeddedTemplateIndex) {\n
return 'View_' + identifierName({ reference: compType }) + '_' + embeddedTemplateIndex;\n}\n/**\n *
@param {?} compType\n * @return {?}\n *\nfunction rendererTypeName(compType) {\n return
'RenderType_' + identifierName({ reference: compType });\n}\n/**\n * @param {?} compType\n * @return
{?}\n *\nfunction hostViewClassName(compType) {\n return 'HostView_' + identifierName({ reference:
compType });\n}\n/**\n * @param {?} compType\n * @return {?}\n *\nfunction
componentFactoryName(compType) {\n return identifierName({ reference: compType }) +
'NgFactory';\n}\n/**\n * @record\n * \n\n/**\n * @record\n * \n\n/**\n * @enum {number} *\n\nvar
CompileSummaryKind = {\n Pipe: 0,\n Directive: 1,\n NgModule: 2,\n Injectable:
3,\n};\n\nCompileSummaryKind[CompileSummaryKind.Pipe] =
'Pipe';\n\nCompileSummaryKind[CompileSummaryKind.Directive] =
'Directive';\n\nCompileSummaryKind[CompileSummaryKind.NgModule] =
'NgModule';\n\nCompileSummaryKind[CompileSummaryKind.Injectable] = 'Injectable';\n\n/**\n * A
CompileSummary is the data needed to use a directive / pipe / module\n * in other modules / components. However,
this data is not enough to compile\n * the directive / module itself.\n * @record\n * \n\n/**\n * @record\n
* \n\n/**\n * @record\n * \n\n/**\n * @record\n * \n\n/**\n * @param {?} token\n * @return {?}\n *\nfunction
tokenName(token) {\n return token.value != null ? _sanitizeIdentifier(token.value) :
identifierName(token.identifier);\n}\n/**\n * @param {?} token\n * @return {?}\n *\nfunction
tokenReference(token) {\n if (token.identifier != null) {\n return token.identifier.reference;\n }\n else {\n
return token.value;\n }\n}\n/**\n * @record\n * \n\n/**\n * @record\n * \n\n/**\n * Metadata regarding compilation of a type.\n *
@param {?} token\n * @return {?}\n *\nfunction
tokenReference(token) {\n if (token.identifier != null) {\n return token.identifier.reference;\n }\n else {\n
return token.value;\n }\n}\n/**\n * @record\n * \n\n/**\n * Metadata about a stylesheet\n * \n\nvar CompileStylesheetMetadata
= /** @class */ (function () {\n function CompileStylesheetMetadata(_a) {\n var _b = _a === void 0 ? {} : _a,
moduleUrl = _b.moduleUrl, styles = _b.styles, styleUrls = _b.styleUrls;\n this.moduleUrl = moduleUrl || null;\n
this.styles = _normalizeArray(styles);\n this.styleUrls = _normalizeArray(styleUrls);\n }\n return
CompileStylesheetMetadata;\n})();\n/**\n * Summary Metadata regarding compilation of a template.\n * @record\n
* \n\n/**\n * Metadata regarding compilation of a template.\n * \n\nvar CompileTemplateMetadata = /** @class */
(function () {\n function CompileTemplateMetadata(_a) {\n var encapsulation = _a.encapsulation, template =
_a.template, templateUrl = _a.templateUrl, htmlAst = _a.htmlAst, styles = _a.styles, styleUrls = _a.styleUrls,
externalStylesheets = _a.externalStylesheets, animations = _a.animations, ngContentSelectors =
_a.ngContentSelectors, interpolation = _a.interpolation, isInline = _a.isInline, preserveWhitespaces =
_a.preserveWhitespaces;\n this.encapsulation = encapsulation;\n this.template = template;\n
this.templateUrl = templateUrl;\n this.htmlAst = htmlAst;\n this.styles = _normalizeArray(styles);\n
this.styleUrls = _normalizeArray(styleUrls);\n this.externalStylesheets =
_normalizeArray(externalStylesheets);\n this.animations = animations ? flatten(animations) : [];\n
this.ngContentSelectors = ngContentSelectors || [];\n if (interpolation && interpolation.length != 2) {\n
throw new Error("'interpolation' should have a start and an end symbol.");\n }\n this.interpolation =
interpolation;\n this.isInline = isInline;\n this.preserveWhitespaces = preserveWhitespaces;\n }\n /**\n

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* @return {?} \n * \n CompileTemplateMetadata.prototype.toSummary = /** \n * @return {?} \n * \n
function () { \n return { \n ngContentSelectors: this.ngContentSelectors, \n encapsulation:
this.encapsulation, \n }; \n }; \n return CompileTemplateMetadata; \n }); \n /** \n * @record \n * \n * \n *
@record \n * \n * \n * Metadata regarding compilation of a directive. \n * \n var CompileDirectiveMetadata = /**
@class */ (function () { \n function CompileDirectiveMetadata(_a) { \n var isHost = _a.isHost, type = _a.type,
isComponent = _a.isComponent, selector = _a.selector, exportAs = _a.exportAs, changeDetection =
_a.changeDetection, inputs = _a.inputs, outputs = _a.outputs, hostListeners = _a.hostListeners, hostProperties =
_a.hostProperties, hostAttributes = _a.hostAttributes, providers = _a.providers, viewProviders = _a.viewProviders,
queries = _a.queries, guards = _a.guards, viewQueries = _a.viewQueries, entryComponents = _a.entryComponents,
template = _a.template, componentViewType = _a.componentViewType, rendererType = _a.rendererType,
componentFactory = _a.componentFactory; \n this.isHost = !!isHost; \n this.type = type; \n
this.isComponent = isComponent; \n this.selector = selector; \n this.exportAs = exportAs; \n
this.changeDetection = changeDetection; \n this.inputs = inputs; \n this.outputs = outputs; \n
this.hostListeners = hostListeners; \n this.hostProperties = hostProperties; \n this.hostAttributes =
hostAttributes; \n this.providers = _normalizeArray(providers); \n this.viewProviders =
_normalizeArray(viewProviders); \n this.queries = _normalizeArray(queries); \n this.guards = guards; \n
this.viewQueries = _normalizeArray(viewQueries); \n this.entryComponents =
_normalizeArray(entryComponents); \n this.template = template; \n this.componentViewType =
componentViewType; \n this.rendererType = rendererType; \n this.componentFactory =
componentFactory; \n } \n /** \n * @param {?} __0 \n * @return {?} \n * \n
CompileDirectiveMetadata.create = /** \n * @param {?} __0 \n * @return {?} \n * \n function (_a) { \n
var isHost = _a.isHost, type = _a.type, isComponent = _a.isComponent, selector = _a.selector, exportAs =
_a.exportAs, changeDetection = _a.changeDetection, inputs = _a.inputs, outputs = _a.outputs, host = _a.host,
providers = _a.providers, viewProviders = _a.viewProviders, queries = _a.queries, guards = _a.guards, viewQueries
= _a.viewQueries, entryComponents = _a.entryComponents, template = _a.template, componentViewType =
_a.componentViewType, rendererType = _a.rendererType, componentFactory = _a.componentFactory; \n var
/** @type {?} */ hostListeners = {}; \n var /** @type {?} */ hostProperties = {}; \n var /** @type {?} */
hostAttributes = {}; \n if (host != null) { \n Object.keys(host).forEach(function (key) { \n var /**
@type {?} */ value = host[key]; \n var /** @type {?} */ matches = key.match(HOST_REG_EXP); \n
if (matches === null) { \n hostAttributes[key] = value; \n } \n else if (matches[1] !=
null) { \n hostProperties[matches[1]] = value; \n } \n else if (matches[2] != null) { \n
hostListeners[matches[2]] = value; \n } \n }); \n } \n var /** @type {?} */ inputsMap =
{}; \n if (inputs != null) { \n inputs.forEach(function (bindConfig) { \n // canonical syntax:
`dirProp: elProp` \n // if there is no `:` , use dirProp = elProp \n var /** @type {?} */ parts =
splitAtColon(bindConfig, [bindConfig, bindConfig]); \n inputsMap[parts[0]] = parts[1]; \n }); \n
} \n var /** @type {?} */ outputsMap = {}; \n if (outputs != null) { \n outputs.forEach(function
(bindConfig) { \n // canonical syntax: `dirProp: elProp` \n // if there is no `:` , use dirProp =
elProp \n var /** @type {?} */ parts = splitAtColon(bindConfig, [bindConfig, bindConfig]); \n
outputsMap[parts[0]] = parts[1]; \n }); \n } \n return new CompileDirectiveMetadata({ \n isHost:
isHost, \n type: type, \n isComponent: !!isComponent, selector: selector, exportAs: exportAs,
changeDetection: changeDetection, \n inputs: inputsMap, \n outputs: outputsMap, \n
hostListeners: hostListeners, \n hostProperties: hostProperties, \n hostAttributes: hostAttributes, \n
providers: providers, \n viewProviders: viewProviders, \n queries: queries, \n guards: guards, \n
viewQueries: viewQueries, \n entryComponents: entryComponents, \n template: template, \n
componentViewType: componentViewType, \n rendererType: rendererType, \n componentFactory:
componentFactory, \n }); \n }); \n /** \n * @return {?} \n * \n
CompileDirectiveMetadata.prototype.toSummary = /** \n * @return {?} \n * \n function () { \n return { \n
summaryKind: CompileSummaryKind.Directive, \n type: this.type, \n isComponent:

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this.isComponent,\n selector: this.selector,\n exportAs: this.exportAs,\n inputs: this.inputs,\n outputs: this.outputs,\n hostListeners: this.hostListeners,\n hostProperties: this.hostProperties,\n hostAttributes: this.hostAttributes,\n providers: this.providers,\n viewProviders: this.viewProviders,\n queries: this.queries,\n guards: this.guards,\n viewQueries: this.viewQueries,\n entryComponents: this.entryComponents,\n changeDetection: this.changeDetection,\n template: this.template && this.template.toSummary(),\n componentViewType: this.componentViewType,\n rendererType: this.rendererType,\n componentFactory: this.componentFactory\n };\n }\n return CompileDirectiveMetadata;\n}());\n\n/**\n * @record\n * /\n * nvar CompilePipeMetadata = /** @class */ (function ()\n {\n function CompilePipeMetadata(_a) {\n var type = _a.type, name = _a.name, pure = _a.pure;\n this.type = type;\n this.name = name;\n this.pure = !!pure;\n }\n /**\n * @return {?}\n */\n CompilePipeMetadata.prototype.toSummary = /**\n * @return {?}\n */\n function () {\n return {\n summaryKind: CompileSummaryKind.Pipe,\n type: this.type,\n name: this.name,\n pure: this.pure\n };\n };\n return CompilePipeMetadata;\n}());\n\n/**\n * @record\n * /\n * nvar CompileNgModuleMetadata = /** @class */ (function () {\n function CompileNgModuleMetadata(_a) {\n var type = _a.type, providers = _a.providers, declaredDirectives =\n _a.declaredDirectives, exportedDirectives = _a.exportedDirectives, declaredPipes = _a.declaredPipes, exportedPipes\n = _a.exportedPipes, entryComponents = _a.entryComponents, bootstrapComponents = _a.bootstrapComponents,\n importedModules = _a.importedModules, exportedModules = _a.exportedModules, schemas = _a.schemas,\n transitiveModule = _a.transitiveModule, id = _a.id;\n this.type = type || null;\n this.declaredDirectives =\n _normalizeArray(declaredDirectives);\n this.exportedDirectives = _normalizeArray(exportedDirectives);\n this.declaredPipes = _normalizeArray(declaredPipes);\n this.exportedPipes =\n _normalizeArray(exportedPipes);\n this.providers = _normalizeArray(providers);\n this.entryComponents =\n _normalizeArray(entryComponents);\n this.bootstrapComponents = _normalizeArray(bootstrapComponents);\n this.importedModules = _normalizeArray(importedModules);\n this.exportedModules =\n _normalizeArray(exportedModules);\n this.schemas = _normalizeArray(schemas);\n this.id = id || null;\n this.transitiveModule = transitiveModule || null;\n }\n /**\n * @return {?}\n */\n CompileNgModuleMetadata.prototype.toSummary = /**\n * @return {?}\n */\n function () {\n var /**\n * @type {?}\n */ module = /** @type {?} */ ((this.transitiveModule));\n return {\n summaryKind:\n CompileSummaryKind.NgModule,\n type: this.type,\n entryComponents: module.entryComponents,\n providers: module.providers,\n modules: module.modules,\n exportedDirectives:\n module.exportedDirectives,\n exportedPipes: module.exportedPipes\n };\n };\n return\n CompileNgModuleMetadata;\n}());\n\nnvar TransitiveCompileNgModuleMetadata = /** @class */ (function () {\n function TransitiveCompileNgModuleMetadata() {\n this.directivesSet = new Set();\n this.directives = [];\n this.exportedDirectivesSet = new Set();\n this.exportedDirectives = [];\n this.pipesSet = new Set();\n this.pipes = [];\n this.exportedPipesSet = new Set();\n this.exportedPipes = [];\n this.modulesSet = new\n Set();\n this.modules = [];\n this.entryComponentsSet = new Set();\n this.entryComponents = [];\n this.providers = [];\n }\n /**\n * @param {?} provider\n * @param {?} module\n * @return {?}\n */\n TransitiveCompileNgModuleMetadata.prototype.addProvider = /**\n * @param {?} provider\n * @param\n {?} module\n * @return {?}\n */\n function (provider, module) {\n this.providers.push({ provider:\n provider, module: module });\n };\n /**\n * @param {?} id\n * @return {?}\n */\n TransitiveCompileNgModuleMetadata.prototype.addDirective = /**\n * @param {?} id\n * @return {?}\n */\n function (id) {\n if (!this.directivesSet.has(id.reference)) {\n this.directivesSet.add(id.reference);\n this.directives.push(id);\n }\n };\n /**\n * @param {?} id\n * @return {?}\n */\n TransitiveCompileNgModuleMetadata.prototype.addExportedDirective = /**\n * @param {?} id\n * @return\n {?}\n */\n function (id) {\n if (!this.exportedDirectivesSet.has(id.reference)) {\n this.exportedDirectivesSet.add(id.reference);\n this.exportedDirectives.push(id);\n }\n };\n /**\n * @param {?} id\n * @return {?}\n */\n TransitiveCompileNgModuleMetadata.prototype.addPipe = /**\n * @param {?} id\n * @return {?}\n */\n function (id) {\n if (!this.pipesSet.has(id.reference)) {\n

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[elementName.slice(1, colonIndex), elementName.slice(colonIndex + 1)];\n\n/**\n * @param {?} tagName\n * @return {?}\n */\nfunction isNgContainer(tagName) {\n return splitNsName(tagName)[1] === 'ng-container';\n}\n\n/**\n * @param {?} tagName\n * @return {?}\n */\nfunction isNgContent(tagName) {\n return splitNsName(tagName)[1] === 'ng-content';\n}\n\n/**\n * @param {?} tagName\n * @return {?}\n */\nfunction isNgTemplate(tagName) {\n return splitNsName(tagName)[1] === 'ng-template';\n}\n\n/**\n * @param {?} fullName\n * @return {?}\n */\nfunction getNsPrefix(fullName) {\n return fullName === null ? null : splitNsName(fullName)[0];\n}\n\n/**\n * @param {?} prefix\n * @param {?} localName\n * @return {?}\n */\nfunction mergeNsAndName(prefix, localName) {\n return prefix ? ":" + prefix + ":" + localName : localName;\n}\n\n// see http://www.w3.org/TR/html51/syntax.html#named-character-references\n// see https://html.spec.whatwg.org/multipage/entities.json\n// This list is not exhaustive to keep the compiler footprint low.\n// The `{` / `ƫ` syntax should be used when the named character reference does not\n// exist.\nvar NAMED_ENTITIES = {\n 'Aacute': '\\u00C1',\n 'aacute': '\\u00E1',\n 'Acirc': '\\u00C2',\n 'acirc': '\\u00E2',\n 'acute': '\\u00B4',\n 'AElig': '\\u00C6',\n 'aelig': '\\u00E6',\n 'Agrave': '\\u00C0',\n 'agrave': '\\u00E0',\n 'alefsym': '\\u2135',\n 'Alpha': '\\u0391',\n 'alpha': '\\u03B1',\n 'amp': '&',\n 'and': '\\u2227',\n 'ang': '\\u2220',\n 'apos': '\\u0027',\n 'Aring': '\\u00C5',\n 'aring': '\\u00E5',\n 'asymp': '\\u2248',\n 'Atilde': '\\u00C3',\n 'atilde': '\\u00E3',\n 'Auml': '\\u00C4',\n 'auml': '\\u00E4',\n 'bdquo': '\\u201E',\n 'Beta': '\\u0392',\n 'beta': '\\u03B2',\n 'brvbar': '\\u00A6',\n 'bull': '\\u2022',\n 'cap': '\\u2229',\n 'Ccedil': '\\u00C7',\n 'ccedil': '\\u00E7',\n 'cedil': '\\u00B8',\n 'cent': '\\u00A2',\n 'Chi': '\\u0397',\n 'chi': '\\u03C7',\n 'circ': '\\u02C6',\n 'clubs': '\\u2663',\n 'cong': '\\u2245',\n 'copy': '\\u00A9',\n 'crarr': '\\u21B5',\n 'cup': '\\u222A',\n 'curren': '\\u00A4',\n 'dagger': '\\u2020',\n 'Dagger': '\\u2021',\n 'darr': '\\u2193',\n 'dArr': '\\u21D3',\n 'deg': '\\u00B0',\n 'Delta': '\\u0394',\n 'delta': '\\u03B4',\n 'diams': '\\u2666',\n 'divide': '\\u00F7',\n 'Eacute': '\\u00C9',\n 'eacute': '\\u00E9',\n 'Ecirc': '\\u00CA',\n 'ecirc': '\\u00EA',\n 'Egrave': '\\u00C8',\n 'egrave': '\\u00E8',\n 'empty': '\\u2205',\n 'emsp': '\\u2003',\n 'ensp': '\\u2002',\n 'Epsilon': '\\u0395',\n 'epsilon': '\\u03B5',\n 'equiv': '\\u2261',\n 'Eta': '\\u0397',\n 'eta': '\\u03B7',\n 'ETH': '\\u00D0',\n 'eth': '\\u00F0',\n 'Euml': '\\u00CB',\n 'euml': '\\u00EB',\n 'euro': '\\u20AC',\n 'exist': '\\u2203',\n 'fnof': '\\u0192',\n 'forall': '\\u2200',\n 'frac12': '\\u00BD',\n 'frac14': '\\u00BC',\n 'frac34': '\\u00BE',\n 'frasl': '\\u2044',\n 'Gamma': '\\u0393',\n 'gamma': '\\u03B3',\n 'ge': '\\u2265',\n 'gt': '>',\n 'harr': '\\u2194',\n 'hArr': '\\u21D4',\n 'hearts': '\\u2665',\n 'hellip': '\\u2026',\n 'Iacute': '\\u00CD',\n 'iacute': '\\u00ED',\n 'Icirc': '\\u00CE',\n 'icirc': '\\u00EE',\n 'iexcl': '\\u00A1',\n 'Igrave': '\\u00CC',\n 'igrave': '\\u00EC',\n 'image': '\\u2111',\n 'infin': '\\u221E',\n 'int': '\\u222B',\n 'Iota': '\\u0399',\n 'iota': '\\u03B9',\n 'iquest': '\\u00BF',\n 'isin': '\\u2208',\n 'Iuml': '\\u00CF',\n 'iuml': '\\u00EF',\n 'Kappa': '\\u039A',\n 'kappa': '\\u03BA',\n 'Lambda': '\\u039B',\n 'lambda': '\\u03BB',\n 'lang': '\\u27E8',\n 'laquo': '\\u00AB',\n 'larr': '\\u2190',\n 'lArr': '\\u21D0',\n 'lceil': '\\u2308',\n 'ldquo': '\\u201C',\n 'le': '\\u2264',\n 'lfloor': '\\u230A',\n 'lowast': '\\u2217',\n 'loz': '\\u25CA',\n 'lrm': '\\u200E',\n 'lsaquo': '\\u2039',\n 'lsquo': '\\u2018',\n 'lt': '<',\n 'macr': '\\u00AF',\n 'mdash': '\\u2014',\n 'micro': '\\u00B5',\n 'middot': '\\u00B7',\n 'minus': '\\u2212',\n 'Mu': '\\u039C',\n 'mu': '\\u03BC',\n 'nabla': '\\u2207',\n 'nbsp': '\\u00A0',\n 'ndash': '\\u2013',\n 'ne': '\\u2260',\n 'ni': '\\u220B',\n 'not': '\\u00AC',\n 'notin': '\\u2209',\n 'nsub': '\\u2284',\n 'Ntilde': '\\u00D1',\n 'ntilde': '\\u00F1',\n 'Nu': '\\u039D',\n 'nu': '\\u03BD',\n 'Oacute': '\\u00D3',\n 'oacute': '\\u00F3',\n 'Ocirc': '\\u00D4',\n 'ocirc': '\\u00F4',\n 'OElig': '\\u0152',\n 'oelig': '\\u0153',\n 'Ograve': '\\u00D2',\n 'ograve': '\\u00F2',\n 'oline': '\\u203E',\n 'Omega': '\\u0399',\n 'omega': '\\u03C9',\n 'Omicron': '\\u039F',\n 'omicron': '\\u03BF',\n 'oplus': '\\u2295',\n 'or': '\\u2228',\n 'ordf': '\\u00AA',\n 'ordm': '\\u00BA',\n 'Oslash': '\\u00D8',\n 'oslash': '\\u00F8',\n 'Otilde': '\\u00D5',\n 'otilde': '\\u00F5',\n 'otimes': '\\u2297',\n 'Ouml': '\\u00D6',\n 'ouml': '\\u00F6',\n 'para': '\\u00B6',\n 'perml': '\\u2030',\n 'perp': '\\u22A5',\n 'Phi': '\\u0396',\n 'phi': '\\u03C6',\n 'Pi': '\\u0398',\n 'pi': '\\u03C0',\n 'piv': '\\u03D6',\n 'plusmn': '\\u00B1',\n 'pound': '\\u00A3',\n 'prime': '\\u2032',\n 'Prime': '\\u2033',\n 'prod': '\\u220F',\n 'prop': '\\u221D',\n 'Psi': '\\u0398',\n 'psi': '\\u03C8',\n 'quot': '\\u0022',\n 'radic': '\\u221A',\n 'rang': '\\u27E9',\n 'raquo': '\\u00BB',\n 'rarr': '\\u2192',\n 'rArr': '\\u21D2',\n 'rceil': '\\u2309',\n 'rdquo': '\\u201D',\n 'real': '\\u211C',\n 'reg': '\\u00AE',\n 'rfloor': '\\u230B',\n 'Rho': '\\u0391',\n 'rho': '\\u03C1',\n 'rlm': '\\u200F',\n 'rsaquo': '\\u203A',\n 'rsquo': '\\u2019',\n 'sbquo': '\\u201A',\n 'Scaron':

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\u0160',\n 'scaron': '\u0161',\n 'sdot': '\u22C5',\n 'sect': '\u00A7',\n 'shy': '\u00AD',\n 'Sigma':
\u03A3',\n 'sigma': '\u03C3',\n 'sigmaf': '\u03C2',\n 'sim': '\u223C',\n 'spades': '\u2660',\n 'sub':
\u2282',\n 'sube': '\u2286',\n 'sum': '\u2211',\n 'sup': '\u2283',\n 'sup1': '\u00B9',\n 'sup2': '\u00B2',\n
'sup3': '\u00B3',\n 'supe': '\u2287',\n 'szlig': '\u00DF',\n 'Tau': '\u03A4',\n 'tau': '\u03C4',\n 'there4':
\u2234',\n 'Theta': '\u0398',\n 'theta': '\u03B8',\n 'thetasym': '\u03D1',\n 'thinsp': '\u2009',\n 'THORN':
\u00DE',\n 'thorn': '\u00FE',\n 'tilde': '\u02DC',\n 'times': '\u00D7',\n 'trade': '\u2122',\n 'Uacute':
\u00DA',\n 'uacute': '\u00FA',\n 'uarr': '\u2191',\n 'uArr': '\u21D1',\n 'Ucirc': '\u00DB',\n 'ucirc':
\u00FB',\n 'Ugrave': '\u00D9',\n 'ugrave': '\u00F9',\n 'uml': '\u00A8',\n 'upsih': '\u03D2',\n 'Upsilon':
\u03A5',\n 'upsilon': '\u03C5',\n 'Uuml': '\u00DC',\n 'uuml': '\u00FC',\n 'weierp': '\u2118',\n 'Xi':
\u039E',\n 'xi': '\u03BE',\n 'Yacute': '\u00DD',\n 'yacute': '\u00FD',\n 'yen': '\u00A5',\n 'yuml':
\u00FF',\n 'Yuml': '\u0178',\n 'Zeta': '\u0396',\n 'zeta': '\u03B6',\n 'zwj': '\u200D',\n 'zwnj':
\u200C',\n};\n// The pseudo-entity is denoting a space. see:\n// https://github.com/dart-
lang/angular/blob/0bb611387d29d65b5af7f9d2515ab571fd3fbee4/_tests/test/compiler/preserve_whitespace_test.dart
\nvar NGSP_UNICODE = '\uE500';\nNAMED_ENTITIES['ngsp'] = NGSP_UNICODE;\n\n/**\n * @fileoverview
added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All
Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\nvar NG_CONTENT_SELECT_ATTR = 'select';\nvar
LINK_ELEMENT = 'link';\nvar LINK_STYLE_REL_ATTR = 'rel';\nvar LINK_STYLE_HREF_ATTR =
'href';\nvar LINK_STYLE_REL_VALUE = 'stylesheet';\nvar STYLE_ELEMENT = 'style';\nvar
SCRIPT_ELEMENT = 'script';\nvar NG_NON_BINDABLE_ATTR = 'ngNonBindable';\nvar NG_PROJECT_AS =
'ngProjectAs';\n\n/**\n * @param {?} ast\n * @return {?} \n */\nfunction prepareElement(ast) {\n var /** @type
{?} */ selectAttr = /** @type {?} */ ((null));\n var /** @type {?} */ hrefAttr = /** @type {?} */ ((null));\n var
/** @type {?} */ relAttr = /** @type {?} */ ((null));\n var /** @type {?} */ nonBindable = false;\n var /**
@type {?} */ projectAs = /** @type {?} */ ((null));\n ast.attrs.forEach(function (attr) {\n var /** @type {?}
*/ lcAttrName = attr.name.toLowerCase();\n if (lcAttrName == NG_CONTENT_SELECT_ATTR) {\n selectAttr = attr.value;\n }\n else if (lcAttrName == LINK_STYLE_HREF_ATTR) {\n hrefAttr =
attr.value;\n }\n else if (lcAttrName == LINK_STYLE_REL_ATTR) {\n relAttr = attr.value;\n }\n else if (attr.name == NG_NON_BINDABLE_ATTR) {\n nonBindable = true;\n }\n else if
(attr.name == NG_PROJECT_AS) {\n if (attr.value.length > 0) {\n projectAs = attr.value;\n }\n }\n });\n selectAttr = normalizeNgContentSelect(selectAttr);\n var /** @type {?} */ nodeName =
ast.name.toLowerCase();\n var /** @type {?} */ type = PreparedElementType.OTHER;\n if
(isNgContent(nodeName)) {\n type = PreparedElementType.NG_CONTENT;\n }\n else if (nodeName ==
STYLE_ELEMENT) {\n type = PreparedElementType.STYLE;\n }\n else if (nodeName ==
SCRIPT_ELEMENT) {\n type = PreparedElementType.SCRIPT;\n }\n else if (nodeName ==
LINK_ELEMENT && relAttr == LINK_STYLE_REL_VALUE) {\n type =
PreparedElementType.STYLESHEET;\n }\n return new PreparedElement(type, selectAttr, hrefAttr,
nonBindable, projectAs);\n}\n\n/** @enum {number} */\nvar PreparedElementType = {\n NG_CONTENT: 0,\n STYLE: 1,\n STYLESHEET: 2,\n SCRIPT: 3,\n OTHER:
4,\n};\nPreparedElementType[PreparedElementType.NG_CONTENT] =
'NG_CONTENT';\nPreparedElementType[PreparedElementType.STYLE] =
'STYLE';\nPreparedElementType[PreparedElementType.STYLESHEET] =
'STYLESHEET';\nPreparedElementType[PreparedElementType.SCRIPT] =
'SCRIPT';\nPreparedElementType[PreparedElementType.OTHER] = 'OTHER';\nvar PreparedElement = /**
@class */ (function () {\n function PreparedElement(type, selectAttr, hrefAttr, nonBindable, projectAs) {\n this.type = type;\n this.selectAttr = selectAttr;\n this.hrefAttr = hrefAttr;\n this.nonBindable =
nonBindable;\n this.projectAs = projectAs;\n }\n return PreparedElement;\n})();\n\n/**\n * @param {?}
selectAttr\n * @return {?} \n */\nfunction normalizeNgContentSelect(selectAttr) {\n if (selectAttr === null ||
selectAttr.length === 0) {\n return '';\n }\n return selectAttr;\n}\n\n/**\n * @fileoverview added by

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tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n\n * @record\n */\n\n\nvar DirectiveNormalizer = /** @class */ (function () {\n function DirectiveNormalizer(_resourceLoader, _urlResolver, _htmlParser, _config) {\n this._resourceLoader = _resourceLoader;\n this._urlResolver = _urlResolver;\n this._htmlParser = _htmlParser;\n this._config = _config;\n this._resourceLoaderCache = new Map();\n }\n /**\n *\n * @return {?}\n */\n DirectiveNormalizer.prototype.clearCache = /**\n *\n * @return {?}\n */\n function () {\n this._resourceLoaderCache.clear();\n }\n /**\n *\n * @param {?} normalizedDirective\n * @return {?}\n */\n DirectiveNormalizer.prototype.clearCacheFor = /**\n *\n * @param {?} normalizedDirective\n * @return {?}\n */\n function (normalizedDirective) {\n var _this = this;\n if (!normalizedDirective.isComponent) {\n return;\n }\n var /** @type {?} */ template = /** @type {?} */ ((normalizedDirective.template));\n this._resourceLoaderCache.delete(/** @type {?} */ ((template.templateUrl));\n template.externalStylesheets.forEach(function (stylesheet) { _this._resourceLoaderCache.delete(/** @type {?} */ ((stylesheet.moduleUrl));\n });\n });\n /**\n *\n * @param {?} url\n * @return {?}\n */\n DirectiveNormalizer.prototype._fetch = /**\n *\n * @param {?} url\n * @return {?}\n */\n function (url) {\n var /** @type {?} */ result = this._resourceLoaderCache.get(url);\n if (!result) {\n result = this._resourceLoader.get(url);\n this._resourceLoaderCache.set(url, result);\n }\n return result;\n });\n /**\n *\n * @param {?} prenormData\n * @return {?}\n */\n DirectiveNormalizer.prototype.normalizeTemplate = /**\n *\n * @param {?} prenormData\n * @return {?}\n */\n function (prenormData) {\n var _this = this;\n if (isDefined(prenormData.template)) {\n if (isDefined(prenormData.templateUrl)) {\n throw syntaxError("'" + stringify(prenormData.componentType) + "' component cannot define both template and templateUrl");\n }\n if (typeof prenormData.template !== 'string') {\n throw syntaxError("The template specified for component '" + stringify(prenormData.componentType) + "' is not a string");\n }\n else if (isDefined(prenormData.templateUrl)) {\n if (typeof prenormData.templateUrl !== 'string') {\n throw syntaxError("The templateUrl specified for component '" + stringify(prenormData.componentType) + "' is not a string");\n }\n }\n else {\n throw syntaxError("No template specified for component '" + stringify(prenormData.componentType));\n }\n if (isDefined(prenormData.preserveWhitespaces) &&\n typeof prenormData.preserveWhitespaces !== 'boolean') {\n throw syntaxError("The preserveWhitespaces option for component '" + stringify(prenormData.componentType) + "' must be a boolean");\n }\n return SyncAsync.then(this._preParseTemplate(prenormData), function (parsedTemplate) {\n return _this._normalizeTemplateMetadata(prenormData, parsedTemplate);\n });\n }\n /**\n *\n * @param {?}\n * @return {?}\n */\n DirectiveNormalizer.prototype._preParseTemplate = /**\n *\n * @param {?} prenormData\n * @return {?}\n */\n function (prenormData) {\n var _this = this;\n var /** @type {?} */ template;\n var /** @type {?} */ templateUrl;\n if (prenormData.template != null) {\n template = prenormData.template;\n templateUrl = prenormData.moduleUrl;\n }\n else {\n templateUrl = this._urlResolver.resolve(prenormData.moduleUrl, /** @type {?} */ ((prenormData.templateUrl));\n template = this._fetch(templateUrl);\n }\n return SyncAsync.then(template, function (template) {\n return _this._preparseLoadedTemplate(prenormData, template, templateUrl);\n });\n }\n /**\n *\n * @param {?}\n * @param {?} template\n * @param {?} templateUrl\n * @return {?}\n */\n DirectiveNormalizer.prototype._preparseLoadedTemplate = /**\n *\n * @param {?} prenormData\n * @param {?} template\n * @param {?} templateUrl\n * @return {?}\n */\n function (prenormData, template, templateUrl) {\n var /** @type {?} */ isInline = !prenormData.template;\n var /** @type {?} */ interpolationConfig = InterpolationConfig.fromArray(/** @type {?} */ ((prenormData.interpolation));\n var /** @type {?} */ rootNodesAndErrors = this._htmlParser.parse(template, templateUrl({\n reference: prenormData.ngModuleType\n }, {\n type: {\n reference: prenormData.componentType\n }\n }, {\n isInline: isInline,\n templateUrl: templateUrl\n })), true, interpolationConfig);\n if (rootNodesAndErrors.errors.length > 0) {\n var /** @type {?} */ errorString = rootNodesAndErrors.errors.join("\\n");\n throw syntaxError("Template

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parse errors:\n" + errorString);\n }\n var /** @type {?} */ templateMetadataStyles =
this._normalizeStylesheet(new CompileStylesheetMetadata({ styles: prenormData.styles, moduleUrl:
prenormData.moduleUrl }));\n var /** @type {?} */ visitor = new TemplatePreparseVisitor();\n
visitAll(visitor, rootNodesAndErrors.rootNodes);\n var /** @type {?} */ templateStyles =
this._normalizeStylesheet(new CompileStylesheetMetadata({ styles: visitor.styles, styleUrls: visitor.styleUrls,
moduleUrl: templateAbsUrl }));\n var /** @type {?} */ styles =
templateMetadataStyles.styles.concat(templateStyles.styles);\n var /** @type {?} */ inlineStyleUrls =
templateMetadataStyles.styleUrls.concat(templateStyles.styleUrls);\n var /** @type {?} */ styleUrls = this\n
._normalizeStylesheet(new CompileStylesheetMetadata({ styleUrls: prenormData.styleUrls, moduleUrl:
prenormData.moduleUrl })).styleUrls;\n return {\n template: template,\n templateUrl:
templateAbsUrl, isInline: isInline,\n htmlAst: rootNodesAndErrors, styles: styles, inlineStyleUrls:
inlineStyleUrls, styleUrls: styleUrls,\n ngContentSelectors: visitor.ngContentSelectors,\n };\n };\n
/**\n * @param {?} prenormData\n * @param {?} preparedTemplate\n * @return {?} */\n *^n
DirectiveNormalizer.prototype._normalizeTemplateMetadata = /**\n * @param {?} prenormData\n * @param
{?} preparedTemplate\n * @return {?} */\n *^n function (prenormData, preparedTemplate) {\n var _this
= this;\n return
SyncAsync.then(this._loadMissingExternalStylesheets(preparedTemplate.styleUrls.concat(preparedTemplate.inlin
eStyleUrls)), function (externalStylesheets) {\n return
_this._normalizeLoadedTemplateMetadata(prenormData, preparedTemplate, externalStylesheets);\n });\n
};\n /**\n * @param {?} prenormData\n * @param {?} preparedTemplate\n * @param {?} stylesheets\n
* @return {?} */\n *^n DirectiveNormalizer.prototype._normalizeLoadedTemplateMetadata = /**\n * @param
{?} prenormData\n * @param {?} preparedTemplate\n * @param {?} stylesheets\n * @return {?} */\n *^n
function (prenormData, preparedTemplate, stylesheets) {\n var _this = this;\n // Algorithm:\n // -
produce exactly 1 entry per original styleUrl in\n // CompileTemplateMetadata.externalStylesheets with all
styles inlined\n // - inline all styles that are referenced by the template into CompileTemplateMetadata.styles.\n
// Reason: be able to determine how many stylesheets there are even without loading\n // the template nor the
stylesheets, so we can create a stub for TypeScript always synchronously\n // (as resource loading may be
async)\n var /** @type {?} */ styles = preparedTemplate.styles.slice();\n
this._inlineStyles(preparedTemplate.inlineStyleUrls, stylesheets, styles);\n var /** @type {?} */ styleUrls =
preparedTemplate.styleUrls;\n var /** @type {?} */ externalStylesheets = styleUrls.map(function (styleUrl)
{\n var /** @type {?} */ stylesheet = /** @type {?} */ ((stylesheets.get(styleUrl)));\n var /** @type
{?} */ styles = stylesheet.styles.slice();\n _this._inlineStyles(stylesheet.styleUrls, stylesheets, styles);\n
return new CompileStylesheetMetadata({ moduleUrl: styleUrl, styles: styles });\n });\n var /** @type {?} */
*/ encapsulation = prenormData.encapsulation;\n if (encapsulation == null) {\n encapsulation =
this._config.defaultEncapsulation;\n }\n if (encapsulation === ViewEncapsulation.Emulated &&
styles.length === 0 &&\n styleUrls.length === 0) {\n encapsulation = ViewEncapsulation.None;\n
}\n return new CompileTemplateMetadata({\n encapsulation: encapsulation,\n template:
preparedTemplate.template,\n templateUrl: preparedTemplate.templateUrl,\n htmlAst:
preparedTemplate.htmlAst, styles: styles, styleUrls: styleUrls,\n ngContentSelectors:
preparedTemplate.ngContentSelectors,\n animations: prenormData.animations,\n interpolation:
prenormData.interpolation,\n isInline: preparedTemplate.isInline, externalStylesheets: externalStylesheets,\n
 preserveWhitespaces: preserveWhitespacesDefault(prenormData.preserveWhitespaces,
this._config.preserveWhitespaces),\n });\n };\n /**\n * @param {?} styleUrls\n * @param {?}
stylesheets\n * @param {?} targetStyles\n * @return {?} */\n *^n
DirectiveNormalizer.prototype._inlineStyles = /**\n * @param {?} styleUrls\n * @param {?} stylesheets\n
* @param {?} targetStyles\n * @return {?} */\n *^n function (styleUrls, stylesheets, targetStyles) {\n var
_this = this;\n styleUrls.forEach(function (styleUrl) {\n var /** @type {?} */ stylesheet = /** @type {?} */
*/ ((stylesheets.get(styleUrl)));\n stylesheet.styles.forEach(function (style) { return targetStyles.push(style);

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});\n _this._inlineStyles(stylesheets.styleUrls, stylesheets, targetStyles);\n });\n });\n /**\n * @param

 {?} styleUrls\n * @param {=} loadedStylesheets\n * @return {?}\n */\n DirectiveNormalizer.prototype._loadMissingExternalStylesheets = /**\n * @param {?} styleUrls\n * @param

 {=} loadedStylesheets\n * @return {?}\n */\n function (styleUrls, loadedStylesheets) {\n var _this =

 this;\n if (loadedStylesheets === void 0) { loadedStylesheets = new Map(); }\n return

 SyncAsync.then(SyncAsync.all(styleUrls.filter(function (styleUrl) { return !loadedStylesheets.has(styleUrl); }));\n .map(function (styleUrl) {\n return SyncAsync.then(_this._fetch(styleUrl), function (loadedStyle) {\n

 var /** @type {?} */ stylesheet = _this._normalizeStylesheet(new CompileStylesheetMetadata({ styles:

 [loadedStyle], moduleUrl: styleUrl }));\n loadedStylesheets.set(styleUrl, stylesheet);\n return

 _this._loadMissingExternalStylesheets(stylesheets.styleUrls, loadedStylesheets);\n });\n })), function (_) {\n

 return loadedStylesheets; });\n });\n /**\n * @param {?} stylesheet\n * @return {?}\n */\n DirectiveNormalizer.prototype._normalizeStylesheet = /**\n * @param {?} stylesheet\n * @return {?}\n */\n function (stylesheet) {\n var _this = this;\n var /** @type {?} */ moduleUrl = /** @type {?} */

 ((stylesheet.moduleUrl));\n var /** @type {?} */ allStyleUrls =

 stylesheet.styleUrls.filter(isStyleUrlResolvable)\n .map(function (url) { return

 _this._urlResolver.resolve(moduleUrl, url); });\n var /** @type {?} */ allStyles = stylesheet.styles.map(function

 (style) {\n var /** @type {?} */ styleWithImports = extractStyleUrls(_this._urlResolver, moduleUrl, style);\n

 allStyleUrls.push.apply(allStyleUrls, styleWithImports.styleUrls);\n return styleWithImports.style;\n

 });\n return new CompileStylesheetMetadata({ styles: allStyles, styleUrls: allStyleUrls, moduleUrl: moduleUrl

 });\n });\n return DirectiveNormalizer;\n})();\n var TemplatePreparseVisitor = /** @class */ (function () {\n

 function TemplatePreparseVisitor() {\n this.ngContentSelectors = [];\n this.styles = [];\n this.styleUrls

 = [];\n this.ngNonBindableStackCount = 0;\n } \n /**\n * @param {?} ast\n * @param {?} context\n

 * @return {?}\n */\n TemplatePreparseVisitor.prototype.visitElement = /**\n * @param {?} ast\n *

 * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n var /** @type {?} */

 preparedElement = preparseElement(ast);\n switch (preparedElement.type) {\n case

 PreparedElementType.NG_CONTENT:\n if (this.ngNonBindableStackCount === 0) {\n

 this.ngContentSelectors.push(preparedElement.selectAttr);\n }\n break;\n case

 PreparedElementType.STYLE:\n var /** @type {?} */ textContent_1 = "";\n

 ast.children.forEach(function (child) {\n if (child instanceof Text) {\n textContent_1 +=

 child.value;\n }\n });\n this.styles.push(textContent_1);\n break;\n case

 PreparedElementType.STYLESHEET:\n this.styleUrls.push(preparedElement.hrefAttr);\n

 break;\n default:\n break;\n }\n if (preparedElement.nonBindable) {\n

 this.ngNonBindableStackCount++;\n }\n visitAll(this, ast.children);\n if

 (preparedElement.nonBindable) {\n this.ngNonBindableStackCount--;\n }\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n TemplatePreparseVisitor.prototype.visitExpansion = /**\n * @param {?} ast\n * @param {?} context\n

 * @return {?}\n */\n function (ast, context) {\n visitAll(this, ast.cases); }\n /**\n * @param {?} ast\n *

 * @param {?} context\n * @return {?}\n */\n TemplatePreparseVisitor.prototype.visitExpansionCase = /**\n *

 * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n

 visitAll(this, ast.expression);\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n

 */\n TemplatePreparseVisitor.prototype.visitComment = /**\n * @param {?} ast\n * @param {?} context\n

 * @return {?}\n */\n function (ast, context) {\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} context\n

 * @return {?}\n */\n TemplatePreparseVisitor.prototype.visitAttribute = /**\n * @param {?} ast\n * @param {?} context\n

 * @return {?}\n */\n function (ast, context) {\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} context\n

 * @return {?}\n */\n TemplatePreparseVisitor.prototype.visitText = /**\n * @param {?} ast\n * @param {?} context\n

 * @return

 {?}\n */\n function (ast, context) {\n return null;\n };\n return TemplatePreparseVisitor;\n})();\n \n /**\n *

 @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n /**\n * @license\n * Copyright

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Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n *\nvar QUERY_METADATA_IDENTIFIERS = [\n
createViewChild,\n createViewChildren,\n createContentChild,\n createContentChildren,\n];\nvar
DirectiveResolver = /** @class */ (function () {\n function DirectiveResolver(_reflector) {\n this._reflector =
_reflector;\n }\n /**\n * @param {?} type\n * @return {?}\n *\n DirectiveResolver.prototype.isDirective = /**\n * @param {?} type\n * @return {?}\n *\n function (type)
{\n var /** @type {?} */ typeMetadata = this._reflector.annotations(resolveForwardRef(type));\n return
typeMetadata && typeMetadata.some(isDirectiveMetadata);\n };\n /**\n * @param {?} type\n * @param
{?=} throwIfNotFound\n * @return {?}\n *\n DirectiveResolver.prototype.resolve = /**\n * @param {?}
type\n * @param {?=} throwIfNotFound\n * @return {?}\n *\n function (type, throwIfNotFound) {\n
if (throwIfNotFound === void 0) { throwIfNotFound = true; }\n var /** @type {?} */ typeMetadata =
this._reflector.annotations(resolveForwardRef(type));\n if (typeMetadata) {\n var /** @type {?} */
metadata = findLast(typeMetadata, isDirectiveMetadata);\n if (metadata) {\n var /** @type {?} */
propertyMetadata = this._reflector.propMetadata(type);\n var /** @type {?} */ guards =
this._reflector.guards(type);\n return this._mergeWithPropertyMetadata(metadata, propertyMetadata,
guards, type);\n }\n }\n if (throwIfNotFound) {\n throw new Error("No Directive annotation
found on " + stringify(type));\n }\n return null;\n };\n /**\n * @param {?} dm\n * @param {?}
propertyMetadata\n * @param {?} guards\n * @param {?} directiveType\n * @return {?}\n *\n DirectiveResolver.prototype._mergeWithPropertyMetadata = /**\n * @param {?} dm\n * @param {?}
propertyMetadata\n * @param {?} guards\n * @param {?} directiveType\n * @return {?}\n *\n function (dm, propertyMetadata, guards, directiveType) {\n var /** @type {?} */ inputs = [];\n var /**
@type {?} */ outputs = [];\n var /** @type {?} */ host = {};\n var /** @type {?} */ queries = {};\n
Object.keys(propertyMetadata).forEach(function (propName) {\n var /** @type {?} */ input =
findLast(propertyMetadata[propName], function (a) { return createInput.isTypeOf(a); });\n if (input) {\n
if (input.bindingPropertyName) {\n inputs.push(propName + \": \" + input.bindingPropertyName);\n
}\n else {\n inputs.push(propName);\n }\n }\n var /** @type
{?} */ output = findLast(propertyMetadata[propName], function (a) { return createOutput.isTypeOf(a); });\n
if (output) {\n if (output.bindingPropertyName) {\n outputs.push(propName + \": \" +
output.bindingPropertyName);\n }\n else {\n outputs.push(propName);\n }\n }\n var /** @type {?} */
hostBindings = propertyMetadata[propName].filter(function (a) { return
createHostBinding.isTypeOf(a); });\n hostBindings.forEach(function (hostBinding) {\n if
(hostBinding.hostPropertyName) {\n var /** @type {?} */ startWith =
hostBinding.hostPropertyName[0];\n if (startWith === '(') {\n throw new
Error("@HostBinding can not bind to events. Use @HostListener instead.");\n }\n else if
(startWith === '[') {\n throw new Error("@HostBinding parameter should be a property name,
'class.<name>', or 'attr.<name>'.");\n }\n host["[" + hostBinding.hostPropertyName + "]"
] = propName;\n }\n }\n else {\n host["[" + propName + "]"] = propName;\n
}\n });\n var /** @type {?} */ hostListeners = propertyMetadata[propName].filter(function (a) { return
createHostListener.isTypeOf(a); });\n hostListeners.forEach(function (hostListener) {\n var /**
@type {?} */ args = hostListener.args || [];\n host["(\" + hostListener.eventName + \")"] = propName +
\"(\" + args.join(',') + \")\";\n }\n }\n var /** @type {?} */ query =
findLast(propertyMetadata[propName], function (a) { return QUERY_METADATA_IDENTIFIERS.some(function
(i) { return i.isTypeOf(a); }); });\n if (query) {\n queries[propName] = query;\n }\n });\n
return this._merge(dm, inputs, outputs, host, queries, guards, directiveType);\n };\n /**\n * @param {?}
def\n * @return {?}\n *\n DirectiveResolver.prototype._extractPublicName = /**\n * @param {?} def\n
* @return {?}\n *\n function (def) { return splitAtColon(def, [/** @type {?} */ ((null)), def)][1].trim(); }\n
/**\n * @param {?} bindings\n * @return {?}\n *\n DirectiveResolver.prototype._dedupeBindings =
/**\n * @param {?} bindings\n * @return {?}\n *\n function (bindings) {\n var /** @type {?} */

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names = new Set();\n var /** @type {?} */ publicNames = new Set();\n var /** @type {?} */\nreversedResult = [];\n // go last to first to allow later entries to overwrite previous entries\n for (var /**\n@type {?} */ i = bindings.length - 1; i >= 0; i--) {\n var /** @type {?} */ binding = bindings[i];\n var\n/** @type {?} */ name_1 = this._extractPublicName(binding);\n publicNames.add(name_1);\n if\n(!names.has(name_1)) {\n names.add(name_1);\n reversedResult.push(binding);\n }\n }\n return reversedResult.reverse();\n};\n/**\n * @param {?} directive\n * @param {?} inputs\n * @param {?} outputs\n * @param {?} host\n * @param {?} queries\n * @param {?} guards\n * @param\n {?} directiveType\n * @return {?}\n */\nfunction DirectiveResolver.prototype._merge = /**\n * @param {?} directive\n * @param {?} inputs\n * @param {?} outputs\n * @param {?} host\n * @param {?} queries\n * @param {?} guards\n * @param {?} directiveType\n * @return {?}\n */\nfunction (directive, inputs,\noutputs, host, queries, guards, directiveType) {\n var /** @type {?} */ mergedInputs =\nthis._dedupeBindings(directive.inputs ? directive.inputs.concat(inputs) : inputs);\n var /** @type {?} */\nmergedOutputs = this._dedupeBindings(directive.outputs ? directive.outputs.concat(outputs) : outputs);\n var\n/** @type {?} */ mergedHost = directive.host ? __assign({}, directive.host, host) : host;\n var /** @type {?} */\nmergedQueries = directive.queries ? __assign({}, directive.queries, queries) : queries;\n if\n(createComponent.isTypeOf(directive)) {\n var /** @type {?} */ comp = /** @type {?} */ (directive);\n return createComponent({\n selector: comp.selector,\n inputs: mergedInputs,\n outputs:\nmergedOutputs,\n host: mergedHost,\n exportAs: comp.exportAs,\n moduleId:\ncomp.moduleId,\n queries: mergedQueries,\n changeDetection: comp.changeDetection,\n providers: comp.providers,\n viewProviders: comp.viewProviders,\n entryComponents:\ncomp.entryComponents,\n template: comp.template,\n templateUrl: comp.templateUrl,\n styles: comp.styles,\n styleUrls: comp.styleUrls,\n encapsulation: comp.encapsulation,\n animations: comp.animations,\n interpolation: comp.interpolation,\n preserveWhitespaces:\ndirective.preserveWhitespaces,\n });\n } else {\n return createDirective({\n selector: directive.selector,\n inputs: mergedInputs,\n outputs: mergedOutputs,\n host:\nmergedHost,\n exportAs: directive.exportAs,\n queries: mergedQueries,\n providers:\ndirective.providers, guards: guards\n });\n }\n};\nreturn DirectiveResolver;\n})();\n/**\n * @param\n {?} type\n * @return {?}\n */\nfunction isDirectiveMetadata(type) {\n return createDirective.isTypeOf(type) ||\ncreateComponent.isTypeOf(type);\n}\n/**\n * @template T\n * @param {?} arr\n * @param {?} condition\n * @return {?}\n */\nfunction findLast(arr, condition) {\n for (var /** @type {?} */ i = arr.length - 1; i >= 0; i--) {\n if (condition(arr[i])) {\n return arr[i];\n }\n }\n return null;\n}\n\n/**\n * @fileoverview added by\ntsickle\n * @suppress {checkTypes} checked by tsc\n */\n/**\n * @license\n * Copyright Google Inc. All Rights\nReserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\nLICENSE file at https://angular.io/license\n */\nvar $EOF = 0;\nvar $TAB = 9;\nvar $LF = 10;\nvar $VTAB =\n11;\nvar $FF = 12;\nvar $CR = 13;\nvar $SPACE = 32;\nvar $BANG = 33;\nvar $DQ = 34;\nvar $HASH = 35;\nvar\n$$ = 36;\nvar $PERCENT = 37;\nvar $AMPERSAND = 38;\nvar $SQ = 39;\nvar $LPAREN = 40;\nvar $RPAREN\n= 41;\nvar $STAR = 42;\nvar $PLUS = 43;\nvar $COMMA = 44;\nvar $MINUS = 45;\nvar $PERIOD = 46;\nvar\n$SLASH = 47;\nvar $COLON = 58;\nvar $SEMICOLON = 59;\nvar $LT = 60;\nvar $EQ = 61;\nvar $GT =\n62;\nvar $QUESTION = 63;\nvar $0 = 48;\nvar $9 = 57;\nvar $A = 65;\nvar $E = 69;\nvar $F = 70;\nvar $X =\n88;\nvar $Z = 90;\nvar $LBRACKET = 91;\nvar $BACKSLASH = 92;\nvar $RBRACKET = 93;\nvar $CARET =\n94;\nvar $_ = 95;\nvar $a = 97;\nvar $e = 101;\nvar $f = 102;\nvar $n = 110;\nvar $r = 114;\nvar $t = 116;\nvar $u =\n117;\nvar $v = 118;\nvar $x = 120;\nvar $z = 122;\nvar $LBRACE = 123;\nvar $BAR = 124;\nvar $RBRACE =\n125;\nvar $NBSP = 160;\n\n\nvar $BT = 96;\n\n/**\n * @param {?} code\n * @return {?}\n */\nfunction\nisWhitespace(code) {\n return (code >= $TAB && code <= $SPACE) || (code == $NBSP);\n}\n/**\n * @param\n {?} code\n * @return {?}\n */\nfunction isDigit(code) {\n return $0 <= code && code <= $9;\n}\n/**\n * @param\n {?} code\n * @return {?}\n */\nfunction isAsciiLetter(code) {\n return code >= $a && code <= $z || code >= $A\n&& code <= $Z;\n}\n/**\n * @param {?} code\n * @return {?}\n */\nfunction isAsciiHexDigit(code) {\n return\ncode >= $a && code <= $f || code >= $A && code <= $F || isDigit(code);\n}\n\n\n/**\n * @fileoverview added by

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tsickle\n * @suppress {checkTypes} checked by tsc\n */\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n * @enum {number} *\nvar TokenType = {\n Character: 0,\n Identifier: 1,\n Keyword: 2,\n String: 3,\n Operator: 4,\n Number: 5,\n Error:
6,\n};\n\nTokenType[TokenType.Character] = \"Character\";\nTokenType[TokenType.Identifier] =
\"Identifier\";\nTokenType[TokenType.Keyword] = \"Keyword\";\nTokenType[TokenType.String] =
\"String\";\nTokenType[TokenType.Operator] = \"Operator\";\nTokenType[TokenType.Number] =
\"Number\";\nTokenType[TokenType.Error] = \"Error\";\nvar KEYWORDS = ['var', 'let', 'as', 'null', 'undefined',
'true', 'false', 'if', 'else', 'this'];\nvar Lexer = /** @class */ (function () {\n function Lexer() {\n }\n /**\n * @param {string} text\n * @return {Token[]}\n */\n Lexer.prototype.tokenize = /**\n * @param {string} text\n * @return {Token[]}\n */\n function (text) {\n var /** @type {Scanner} */ scanner = new _Scanner(text);\n var /**\n * @type {Token[]}\n */ tokens = [];\n var /** @type {Token} */ token = scanner.scanToken();\n while (token != null) {\n tokens.push(token);\n token = scanner.scanToken();\n }\n return tokens;\n };\n return
Lexer;\n})();\nvar Token = /** @class */ (function () {\n function Token(index, type, numValue, strValue) {\n this.index = index;\n this.type = type;\n this.numValue = numValue;\n this.strValue = strValue;\n }\n /**\n * @param {string} code\n * @return {boolean}\n */\n Token.prototype.isCharacter = /**\n * @param {string} code\n * @return {boolean}\n */\n function (code) {\n return this.type == TokenType.Character &&
this.numValue == code;\n };\n /**\n * @return {boolean}\n */\n Token.prototype.isNumber = /**\n * @return {boolean}\n */\n function () {\n return this.type == TokenType.Number; }\n /**\n * @return {boolean}\n */\n Token.prototype.isString = /**\n * @return {boolean}\n */\n function () {\n return this.type == TokenType.String;
};\n /**\n * @param {string} operator\n * @return {boolean}\n */\n Token.prototype.isOperator = /**\n * @param {string} operator\n * @return {boolean}\n */\n function (operator) {\n return this.type ==
TokenType.Operator && this.strValue == operator;\n };\n /**\n * @return {boolean}\n */\n Token.prototype.isIdentifier = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Identifier; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeyword = /**\n * @return
{boolean}\n */\n function () {\n return this.type == TokenType.Keyword; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordLet = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'let'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordAs = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'as'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordNull = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'null'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordUndefined = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'undefined'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordTrue = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'true'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordFalse = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'false'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isKeywordThis = /**\n * @return {boolean}\n */\n function () {\n return this.type ==
TokenType.Keyword && this.strValue == 'this'; }\n /**\n * @return {boolean}\n */\n Token.prototype.isError =
/**\n * @return {boolean}\n */\n function () {\n return this.type == TokenType.Error; }\n /**\n * @return {boolean}\n */\n Token.prototype.toNumber = /**\n * @return {number}\n */\n function () {\n return this.type ==
TokenType.Number ? this.numValue : -1; }\n /**\n * @return {string}\n */\n Token.prototype.toString = /**\n * @return {string}\n */\n function () {\n switch (this.type) {\n case TokenType.Character:\n case
TokenType.Identifier:\n case TokenType.Keyword:\n case TokenType.Operator:\n case
TokenType.String:\n case TokenType.Error:\n return this.strValue;\n case
TokenType.Number:\n return this.numValue.toString();\n default:\n return null;\n }\n };\n return Token;\n})();\n */\n * @param {number} index\n * @param {string} code\n * @return {Token}\n */\nfunction

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newCharacterToken(index, code) {\n return new Token(index, TokenType.Character, code,
String.fromCharCode(code));\n}\n/**\n * @param {?} index\n * @param {?} text\n * @return {?}\n */\nfunction
newIdentifierToken(index, text) {\n return new Token(index, TokenType.Identifier, 0, text);\n}\n/**\n * @param
 {?} index\n * @param {?} text\n * @return {?}\n */\nfunction newKeywordToken(index, text) {\n return new
Token(index, TokenType.Keyword, 0, text);\n}\n/**\n * @param {?} index\n * @param {?} text\n * @return {?}\n
*/\nfunction newOperatorToken(index, text) {\n return new Token(index, TokenType.Operator, 0, text);\n}\n/**\n
 * @param {?} index\n * @param {?} text\n * @return {?}\n */\nfunction newStringToken(index, text) {\n return
new Token(index, TokenType.String, 0, text);\n}\n/**\n * @param {?} index\n * @param {?} n\n * @return {?}\n
*/\nfunction newNumberToken(index, n) {\n return new Token(index, TokenType.Number, n, "");\n}\n/**\n *
@param {?} index\n * @param {?} message\n * @return {?}\n */\nfunction newErrorToken(index, message) {\n
return new Token(index, TokenType.Error, 0, message);\n}\nvar EOF = new Token(-1, TokenType.Character, 0,
");\nvar _Scanner = /** @class */ (function () {\n function _Scanner(input) {\n this.input = input;\n
this.peak = 0;\n this.index = -1;\n this.length = input.length;\n this.advance();\n }\n /**\n *
@return {?}\n */\n _Scanner.prototype.advance = /**\n * @return {?}\n */\n function () {\n
this.peak = ++this.index >= this.length ? $EOF : this.input.charCodeAtAt(this.index);\n };\n /**\n * @return
 {?}\n */\n _Scanner.prototype.scanToken = /**\n * @return {?}\n */\n function () {\n var /** @type
 {?} */ input = this.input, /** @type {?} */ length = this.length;\n var /** @type {?} */ peek = this.peak, /**
@type {?} */ index = this.index;\n // Skip whitespace.\n while (peek <= $SPACE) {\n if (++index
>= length) {\n peek = $EOF;\n break;\n }\n else {\n peek =
input.charCodeAtAt(index);\n }\n this.peak = peek;\n this.index = index;\n if (index >=
length) {\n return null;\n }\n // Handle identifiers and numbers.\n if (isIdentifierStart(peek))\n
return this.scanIdentifier();\n if (isDigit(peek))\n return this.scanNumber(index);\n var /** @type
 {?} */ start = index;\n switch (peek) {\n case $PERIOD:\n this.advance();\n return
isDigit(this.peak) ? this.scanNumber(start) :\n newCharacterToken(start, $PERIOD);\n case
$LPAREN:\n case $RPAREN:\n case $LBRACE:\n case $RBRACE:\n case
$LBACKET:\n case $RBACKET:\n case $COMMA:\n case $COLON:\n case
$SEMICOLON:\n return this.scanCharacter(start, peek);\n case $$SQ:\n case $DQ:\n
return this.scanString();\n case $HASH:\n case $PLUS:\n case $MINUS:\n case
$STAR:\n case $$SLASH:\n case $PERCENT:\n case $CARET:\n return
this.scanOperator(start, String.fromCharCode(peek));\n case $QUESTION:\n return
this.scanComplexOperator(start, '?', $PERIOD, '.');\n case $LT:\n case $GT:\n return
this.scanComplexOperator(start, String.fromCharCode(peek), $EQ, '=');\n case $BANG:\n case
$EQ:\n return this.scanComplexOperator(start, String.fromCharCode(peek), $EQ, '=', $EQ, '=');\n case
$AMPERSAND:\n return this.scanComplexOperator(start, '&', $AMPERSAND, '&');\n case
$BAR:\n return this.scanComplexOperator(start, '|', $BAR, '|');\n case $NBSP:\n while
(isWhitespace(this.peak))\n this.advance();\n return this.scanToken();\n }\n }\n
this.advance();\n return this.error("Unexpected character [" + String.fromCharCode(peek) + "]", 0);\n };\n
}\n /**\n * @param {?} start\n * @param {?} code\n * @return {?}\n */\n _Scanner.prototype.scanCharacter = /**\n * @param {?} start\n * @param {?} str\n * @return {?}\n */\n function (start, code) {\n this.advance();\n return newCharacterToken(start, code);\n };\n /**\n *
@param {?} start\n * @param {?} str\n * @return {?}\n */\n _Scanner.prototype.scanOperator = /**\n *
@param {?} start\n * @param {?} str\n * @return {?}\n */\n function (start, str) {\n
this.advance();\n return newOperatorToken(start, str);\n };\n /**\n * Tokenize a 2/3 char long operator\n
*\n * @param start start index in the expression\n * @param one first symbol (always part of the operator)\n
*\n * @param twoCode code point for the second symbol\n * @param two second symbol (part of the operator when
the second code point matches)\n * @param threeCode code point for the third symbol\n * @param three third
symbol (part of the operator when provided and matches source expression)\n */\n /**\n * Tokenize a 2/3
char long operator\n *\n * @param {?} start start index in the expression\n * @param {?} one first symbol

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(always part of the operator)\n * @param {?} twoCode code point for the second symbol\n * @param {?} two
second symbol (part of the operator when the second code point matches)\n * @param {?=} threeCode code point
for the third symbol\n * @param {?=} three third symbol (part of the operator when provided and matches source
expression)\n * @return {?}\n */\n _Scanner.prototype.scanComplexOperator = /**\n * Tokenize a 2/3
char long operator\n *\n * @param {?} start start index in the expression\n * @param {?} one first symbol
(always part of the operator)\n * @param {?} twoCode code point for the second symbol\n * @param {?} two
second symbol (part of the operator when the second code point matches)\n * @param {?=} threeCode code point
for the third symbol\n * @param {?=} three third symbol (part of the operator when provided and matches source
expression)\n * @return {?}\n */\n function (start, one, twoCode, two, threeCode, three) {\n
this.advance();\n var /** @type {?} */ str = one;\n if (this.peek == twoCode) {\n this.advance();\n
 str += two;\n }\n if (threeCode != null && this.peek == threeCode) {\n this.advance();\n
 str += three;\n }\n return newOperatorToken(start, str);\n };\n /**\n * @return {?}\n */\n _Scanner.prototype.scanIdentifier = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ start
= this.index;\n this.advance();\n while (isIdentifierPart(this.peek))\n this.advance();\n var /**
@type {?} */ str = this.input.substring(start, this.index);\n return KEYWORDS.indexOf(str) > -1 ?
newKeywordToken(start, str) :\n newIdentifierToken(start, str);\n };\n /**\n * @param {?} start\n *
@return {?}\n */\n _Scanner.prototype.scanNumber = /**\n * @param {?} start\n * @return {?}\n */\n function (start) {\n var /** @type {?} */ simple = (this.index === start);\n this.advance(); // Skip initial
digit.\n while (true) {\n if (isDigit(this.peek)) {\n // Do nothing.\n }\n else if
(this.peek == $PERIOD) {\n simple = false;\n }\n else if (isExponentStart(this.peek)) {\n
 this.advance();\n if (isExponentSign(this.peek))\n this.advance();\n if
(!isDigit(this.peek))\n return this.error('Invalid exponent', -1);\n simple = false;\n }\n
 else {\n break;\n }\n this.advance();\n }\n var /** @type {?} */ str =
this.input.substring(start, this.index);\n var /** @type {?} */ value = simple ? parseIntAutoRadix(str) :
parseFloat(str);\n return newNumberToken(start, value);\n };\n /**\n * @return {?}\n */\n _Scanner.prototype.scanString = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ start =
this.index;\n var /** @type {?} */ quote = this.peek;\n this.advance(); // Skip initial quote.\n var /**
@type {?} */ buffer = "";\n var /** @type {?} */ marker = this.index;\n var /** @type {?} */ input =
this.input;\n while (this.peek != quote) {\n if (this.peek == $BACKSLASH) {\n buffer +=
input.substring(marker, this.index);\n this.advance();\n var /** @type {?} */ unescapedCode =
void 0;\n // Workaround for TS2.1-introduced type strictness\n this.peek = this.peek;\n if
(this.peek == $u) {\n // 4 character hex code for unicode character.\n var /** @type {?} */
hex = input.substring(this.index + 1, this.index + 5);\n if (/^[0-9a-f]+$/.test(hex)) {\n
 unescapedCode = parseInt(hex, 16);\n }\n else {\n return this.error("Invalid
unicode escape [\\u" + hex + "\\]", 0);\n }\n for (var /** @type {?} */ i = 0; i < 5; i++) {\n
 this.advance();\n }\n }\n else {\n unescapedCode =
unescape(this.peek);\n this.advance();\n }\n buffer +=
String.fromCharCode(unescapedCode);\n marker = this.index;\n }\n else if (this.peek ==
$EOF) {\n return this.error('Unterminated quote', 0);\n }\n else {\n this.advance();\n
 }\n }\n var /** @type {?} */ last = input.substring(marker, this.index);\n this.advance(); // Skip
terminating quote.\n return newStringToken(start, buffer + last);\n };\n /**\n * @param {?} message\n *
@param {?} offset\n * @return {?}\n */\n _Scanner.prototype.error = /**\n * @param {?} message\n *
@param {?} offset\n * @return {?}\n */\n function (message, offset) {\n var /** @type {?} */ position
= this.index + offset;\n return newErrorToken(position, "Lexer Error: " + message + " at column " + position
+ " in expression [" + this.input + "]);\n };\n return _Scanner;\n });\n /**\n * @param {?} code\n * @return
{?}\n */\n function isIdentifierStart(code) {\n return ($a <= code && code <= $z) || ($A <= code && code <= $Z)
||\n (code == $_) || (code == $$);\n }\n /**\n * @param {?} input\n * @return {?}\n */\n function
isIdentifier(input) {\n if (input.length == 0)\n return false;\n var /** @type {?} */ scanner = new

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expressions separated by a semicolon.\n *\nvar Chain = /** @class */ (function (_super) {\n __extends(Chain,\n _super);\n function Chain(span, expressions) {\n var _this = _super.call(this, span) || this;\n _this.expressions = expressions;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n Chain.prototype.visit = /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitChain(this, context);\n };\n return Chain;\n})(AST));\nvar Conditional = /** @class */\n(function (_super) {\n __extends(Conditional, _super);\n function Conditional(span, condition, trueExp,\n falseExp) {\n var _this = _super.call(this, span) || this;\n _this.condition = condition;\n _this.trueExp =\n trueExp;\n _this.falseExp = falseExp;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param\n {?=} context\n * @return {?}\n */\n Conditional.prototype.visit = /**\n * @param {?} visitor\n *\n @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) {\n context = null; }\n return visitor.visitConditional(this, context);\n };\n return Conditional;\n})(AST);\nvar\n PropertyRead = /** @class */ (function (_super) {\n __extends(PropertyRead, _super);\n function\n PropertyRead(span, receiver, name) {\n var _this = _super.call(this, span) || this;\n _this.receiver =\n receiver;\n _this.name = name;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n PropertyRead.prototype.visit = /**\n * @param {?} visitor\n *\n @param\n {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) {\n context =\n null; }\n return visitor.visitPropertyRead(this, context);\n };\n return PropertyRead;\n})(AST);\nvar\n PropertyWrite = /** @class */ (function (_super) {\n __extends(PropertyWrite, _super);\n function\n PropertyWrite(span, receiver, name, value) {\n var _this = _super.call(this, span) || this;\n _this.receiver =\n receiver;\n _this.name = name;\n _this.value = value;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n PropertyWrite.prototype.visit = /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n function (visitor, context) {\n if\n (context === void 0) {\n context =\n null; }\n return visitor.visitPropertyWrite(this, context);\n };\n return\n PropertyWrite;\n})(AST);\nvar\n SafePropertyRead = /** @class */ (function (_super) {\n __extends(SafePropertyRead, _super);\n function\n SafePropertyRead(span, receiver, name) {\n var _this =\n _super.call(this, span) || this;\n _this.receiver = receiver;\n _this.name = name;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n SafePropertyRead.prototype.visit = /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n function (visitor, context) {\n if\n (context === void 0) {\n context =\n null; }\n return\n visitor.visitSafePropertyRead(this, context);\n };\n return\n SafePropertyRead;\n})(AST);\nvar\n KeyedRead = /** @class */ (function (_super) {\n __extends(KeyedRead, _super);\n function\n KeyedRead(span, obj, key) {\n var _this = _super.call(this, span) || this;\n _this.obj = obj;\n _this.key = key;\n return _this;\n }\n /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n KeyedRead.prototype.visit = /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n function (visitor,\n context) {\n if (context === void 0) {\n context =\n null; }\n return\n visitor.visitKeyedRead(this, context);\n };\n return\n KeyedRead;\n})(AST);\nvar\n KeyedWrite = /** @class */ (function (_super) {\n __extends(KeyedWrite, _super);\n function\n KeyedWrite(span, obj, key, value) {\n var _this = _super.call(this,\n span)\n || this;\n _this.obj = obj;\n _this.key = key;\n _this.value = value;\n return _this;\n }\n /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n KeyedWrite.prototype.visit = /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n function (visitor,\n context) {\n if\n (context === void 0) {\n context =\n null; }\n return\n visitor.visitKeyedWrite(this, context);\n };\n return\n KeyedWrite;\n})(AST);\nvar\n BindingPipe = /** @class */ (function (_super) {\n __extends(BindingPipe, _super);\n function\n BindingPipe(span, exp, name, args) {\n var _this = _super.call(this, span) || this;\n _this.exp = exp;\n _this.name = name;\n _this.args = args;\n return _this;\n }\n /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n BindingPipe.prototype.visit = /**\n * @param\n {?} visitor\n * @param {?=\n context\n * @return {?}\n */\n function (visitor,\n context) {\n if\n (context === void 0) {\n context =\n null; }\n return

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visitor.visitPipe(this, context);\n });\n return BindingPipe;\n}(AST));\n\nvar LiteralPrimitive = /** @class */\n(function (_super) {\n __extends(LiteralPrimitive, _super);\n function LiteralPrimitive(span, value) {\n var _this = _super.call(this, span) || this;\n _this.value = value;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n LiteralPrimitive.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitLiteralPrimitive(this, context);\n });\n return LiteralPrimitive;\n}(AST));\n\nvar LiteralArray = /** @class */\n(function (_super) {\n __extends(LiteralArray, _super);\n function LiteralArray(span, expressions) {\n var _this = _super.call(this, span) || this;\n _this.expressions = expressions;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n LiteralArray.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitLiteralArray(this, context);\n });\n return LiteralArray;\n}(AST));\n\nvar LiteralMap = /** @class */\n(function (_super) {\n __extends(LiteralMap, _super);\n function LiteralMap(span, keys, values) {\n var _this = _super.call(this, span) || this;\n _this.keys = keys;\n _this.values = values;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n LiteralMap.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitLiteralMap(this, context);\n });\n return LiteralMap;\n}(AST));\n\nvar Interpolation = /** @class */\n(function (_super) {\n __extends(Interpolation, _super);\n function Interpolation(span, strings, expressions) {\n var _this = _super.call(this, span) || this;\n _this.strings = strings;\n _this.expressions = expressions;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n Interpolation.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitInterpolation(this, context);\n });\n return Interpolation;\n}(AST));\n\nvar Binary = /** @class */\n(function (_super) {\n __extends(Binary, _super);\n function Binary(span, operation, left, right) {\n var _this = _super.call(this, span) || this;\n _this.operation = operation;\n _this.left = left;\n _this.right = right;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n Binary.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitBinary(this, context);\n });\n return Binary;\n}(AST));\n\nvar PrefixNot = /** @class */\n(function (_super) {\n __extends(PrefixNot, _super);\n function PrefixNot(span, expression) {\n var _this = _super.call(this, span) || this;\n _this.expression = expression;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n PrefixNot.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitPrefixNot(this, context);\n });\n return PrefixNot;\n}(AST));\n\nvar NonNullAssert = /** @class */\n(function (_super) {\n __extends(NonNullAssert, _super);\n function NonNullAssert(span, expression) {\n var _this = _super.call(this, span) || this;\n _this.expression = expression;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n NonNullAssert.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitNonNullAssert(this, context);\n });\n return NonNullAssert;\n}(AST));\n\nvar MethodCall = /** @class */\n(function (_super) {\n __extends(MethodCall, _super);\n function MethodCall(span, receiver, name, args) {\n var _this = _super.call(this, span) || this;\n _this.receiver = receiver;\n _this.name = name;\n _this.args = args;\n return _this;\n }\n /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n MethodCall.prototype.visit = /**\n * @param {?}\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitMethodCall(this, context);\n });\n return MethodCall;\n}(AST));\n\nvar SafeMethodCall = /** @class */\n(function (_super) {\n __extends(SafeMethodCall, _super);\n function SafeMethodCall(span, receiver, name,

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args) {\n var _this = _super.call(this, span) || this;\n _this.receiver = receiver;\n _this.name = name;\n _this.args = args;\n return _this;\n } \n /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n SafeMethodCall.prototype.visit = /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitSafeMethodCall(this, context);\n }; \n return SafeMethodCall;\n}(AST));\n\nvar FunctionCall = /** @class */ (function (_super) {\n __extends(FunctionCall, _super);\n function FunctionCall(span, target, args) {\n var _this = _super.call(this, span) || this;\n _this.target = target;\n _this.args = args;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n FunctionCall.prototype.visit = /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return visitor.visitFunctionCall(this, context);\n }; \n return FunctionCall;\n}(AST));\n\nvar ASTWithSource = /** @class */ (function (_super) {\n __extends(ASTWithSource, _super);\n function ASTWithSource(ast, source, location, errors) {\n var _this = _super.call(this, new ParseSpan(0, source === null ? 0 : source.length)) || this;\n _this.ast = ast;\n _this.source = source;\n _this.location = location;\n _this.errors = errors;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n ASTWithSource.prototype.visit = /**\n * @param {?} visitor\n * @param {?=} context\n * @return {?}\n */\n function (visitor, context) {\n if (context === void 0) { context = null; }\n return this.ast.visit(visitor, context);\n }; \n /**\n * @return {?}\n */\n ASTWithSource.prototype.toString = /**\n * @return {?}\n */\n function () {\n return this.source + \" in \" + this.location;\n }; \n return ASTWithSource;\n}(AST));\n\nvar TemplateBinding = /** @class */ (function () {\n function TemplateBinding(span, key, keyIsVar, name, expression) {\n this.span = span;\n this.key = key;\n this.keyIsVar = keyIsVar;\n this.name = name;\n this.expression = expression;\n }\n return TemplateBinding;\n}());\n\nvar NullAstVisitor = /** @class */ (function () {\n function NullAstVisitor() {\n }\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitBinary = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitChain = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitConditional = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitFunctionCall = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitImplicitReceiver = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitInterpolation = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitKeyedRead = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitKeyedWrite = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitLiteralArray = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitLiteralMap = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitLiteralPrimitive = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n NullAstVisitor.prototype.visitMethodCall = /**\n * @param {?} ast\n
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* @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n NullAstVisitor.prototype.visitPipe = /**\n * @param {?} ast\n
* @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n
* @param {?} context\n * @return {?}\n *^\n NullAstVisitor.prototype.visitPrefixNot = /**\n * @param
{?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param
{?} ast\n * @param {?} context\n * @return {?}\n *^\n NullAstVisitor.prototype.visitNonNullAssert =
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n
NullAstVisitor.prototype.visitPropertyRead = /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *^\n NullAstVisitor.prototype.visitPropertyWrite = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n NullAstVisitor.prototype.visitQuote = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n NullAstVisitor.prototype.visitSafeMethodCall = /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) { }; \n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *^\n
NullAstVisitor.prototype.visitSafePropertyRead = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n function (ast, context) { }; \n return NullAstVisitor;\n})();\n\nvar RecursiveAstVisitor = /**
@class */(function () {\n function RecursiveAstVisitor() {\n } \n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n RecursiveAstVisitor.prototype.visitBinary = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n function (ast, context) {\n ast.left.visit(this);\n
ast.right.visit(this);\n return null;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *^\n RecursiveAstVisitor.prototype.visitChain = /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *^\n function (ast, context) { return this.visitAll(ast.expressions, context); }; \n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *^\n
RecursiveAstVisitor.prototype.visitConditional = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n function (ast, context) {\n ast.condition.visit(this);\n ast.trueExp.visit(this);\n
ast.falseExp.visit(this);\n return null;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n RecursiveAstVisitor.prototype.visitPipe = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n function (ast, context) {\n ast.exp.visit(this);\n this.visitAll(ast.args,
context);\n return null;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n
*^\n RecursiveAstVisitor.prototype.visitFunctionCall = /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *^\n function (ast, context) {\n /** @type {?} */ ((ast.target)).visit(this);\n
this.visitAll(ast.args, context);\n return null;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *^\n RecursiveAstVisitor.prototype.visitImplicitReceiver = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *^\n function (ast, context) { return null; }; \n /**\n * @param {?}
ast\n * @param {?} context\n * @return {?}\n *^\n RecursiveAstVisitor.prototype.visitInterpolation =
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *^\n function (ast, context) {\n
return this.visitAll(ast.expressions, context);\n }; \n /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *^\n RecursiveAstVisitor.prototype.visitKeyedRead = /**\n * @param {?} ast\n * @param
{?} context\n * @return {?}\n *^\n function (ast, context) {\n ast.obj.visit(this);\n
ast.key.visit(this);\n return null;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *^\n RecursiveAstVisitor.prototype.visitKeyedWrite = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *^\n function (ast, context) {\n ast.obj.visit(this);\n ast.key.visit(this);\n
ast.value.visit(this);\n return null;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *^\n RecursiveAstVisitor.prototype.visitLiteralArray = /**\n * @param {?} ast\n * @param
{?} context\n * @return {?}\n *^\n function (ast, context) {\n return this.visitAll(ast.expressions,

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context);\n }; \n /** \n * @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitLiteralMap = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) { return this.visitAll(ast.values, context); }; \n /** \n * @param
 {?} ast \n * @param {?} context \n * @return {?} \n * \n RecursiveAstVisitor.prototype.visitLiteralPrimitive
= /** \n * @param {?} ast \n * @param {?} context \n * @return {?} \n * \n function (ast, context) {
return null; }; \n /** \n * @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitMethodCall = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.receiver.visit(this);\n return this.visitAll(ast.args,
context);\n }; \n /** \n * @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitPrefixNot = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.expression.visit(this);\n return null;\n }; \n /** \n
* @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitNonNullAssert = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.expression.visit(this);\n return null;\n }; \n /** \n
* @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitPropertyRead = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.receiver.visit(this);\n return null;\n }; \n /** \n
* @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitPropertyWrite = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.receiver.visit(this);\n ast.value.visit(this);\n return
null;\n }; \n /** \n * @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitSafePropertyRead = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.receiver.visit(this);\n return null;\n }; \n /** \n
* @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitSafeMethodCall = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) {\n ast.receiver.visit(this);\n return this.visitAll(ast.args,
context);\n }; \n /** \n * @param {?} asts \n * @param {?} context \n * @return {?} \n * \n
RecursiveAstVisitor.prototype.visitAll = /** \n * @param {?} asts \n * @param {?} context \n * @return
 {?} \n * \n function (asts, context) {\n var _this = this;\n asts.forEach(function (ast) { return
ast.visit(_this, context); });\n return null;\n }; \n /** \n * @param {?} ast \n * @param {?} context \n
* @return {?} \n * \n RecursiveAstVisitor.prototype.visitQuote = /** \n * @param {?} ast \n * @param {?}
context \n * @return {?} \n * \n function (ast, context) { return null; }; \n return
RecursiveAstVisitor;\n})();\nvar AstTransformer = /** @class */ (function () {\n function AstTransformer() {\n
}\n /** \n * @param {?} ast \n * @param {?} context \n * @return {?} \n * \n
AstTransformer.prototype.visitImplicitReceiver = /** \n * @param {?} ast \n * @param {?} context \n *
@return {?} \n * \n function (ast, context) { return ast; }; \n /** \n * @param {?} ast \n * @param {?}
context \n * @return {?} \n * \n AstTransformer.prototype.visitInterpolation = /** \n * @param {?} ast \n
* @param {?} context \n * @return {?} \n * \n function (ast, context) {\n return new
Interpolation(ast.span, ast.strings, this.visitAll(ast.expressions));\n }; \n /** \n * @param {?} ast \n * @param
 {?} context \n * @return {?} \n * \n AstTransformer.prototype.visitLiteralPrimitive = /** \n * @param {?}
ast \n * @param {?} context \n * @return {?} \n * \n function (ast, context) {\n return new
LiteralPrimitive(ast.span, ast.value);\n }; \n /** \n * @param {?} ast \n * @param {?} context \n * @return
 {?} \n * \n AstTransformer.prototype.visitPropertyRead = /** \n * @param {?} ast \n * @param {?}
context \n * @return {?} \n * \n function (ast, context) {\n return new PropertyRead(ast.span,
ast.receiver.visit(this), ast.name);\n }; \n /** \n * @param {?} ast \n * @param {?} context \n * @return
 {?} \n * \n AstTransformer.prototype.visitPropertyWrite = /** \n * @param {?} ast \n * @param {?}
context \n * @return {?} \n * \n function (ast, context) {\n return new PropertyWrite(ast.span,
ast.receiver.visit(this), ast.name, ast.value.visit(this));\n }; \n /** \n * @param {?} ast \n * @param {?}

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context\n * @return {?}\n */\n AstTransformer.prototype.visitSafePropertyRead = /**\n * @param {?}
ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return new
SafePropertyRead(ast.span, ast.receiver.visit(this), ast.name);\n };\n /**\n * @param {?} ast\n * @param
{?} context\n * @return {?}\n */\n AstTransformer.prototype.visitMethodCall = /**\n * @param {?} ast\n
* @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return new
MethodCall(ast.span, ast.receiver.visit(this), ast.name, this.visitAll(ast.args));\n };\n /**\n * @param {?} ast\n
* @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitSafeMethodCall = /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return new
SafeMethodCall(ast.span, ast.receiver.visit(this), ast.name, this.visitAll(ast.args));\n };\n /**\n * @param {?}
ast\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitFunctionCall = /**\n
* @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return
new FunctionCall(ast.span, /** @type {?} */ ((ast.target)).visit(this), this.visitAll(ast.args));\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n */\n
AstTransformer.prototype.visitLiteralArray = /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n */\n function (ast, context) {\n return new LiteralArray(ast.span, this.visitAll(ast.expressions));\n
};\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n
AstTransformer.prototype.visitLiteralMap = /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n */\n function (ast, context) {\n return new LiteralMap(ast.span, ast.keys, this.visitAll(ast.values));\n
};\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n
AstTransformer.prototype.visitBinary = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n
*/\n function (ast, context) {\n return new Binary(ast.span, ast.operation, ast.left.visit(this),
ast.right.visit(this));\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n
AstTransformer.prototype.visitPrefixNot = /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n */\n function (ast, context) {\n return new PrefixNot(ast.span, ast.expression.visit(this));\n };\n
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n
AstTransformer.prototype.visitNonNullAssert = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n */\n function (ast, context) {\n return new NonNullAssert(ast.span,
ast.expression.visit(this));\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n
*/\n
AstTransformer.prototype.visitConditional = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n */\n function (ast, context) {\n return new Conditional(ast.span, ast.condition.visit(this),
ast.trueExp.visit(this), ast.falseExp.visit(this));\n };\n /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n */\n
AstTransformer.prototype.visitPipe = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n */\n function (ast, context) {\n return new BindingPipe(ast.span,
ast.exp.visit(this), ast.name, this.visitAll(ast.args));\n };\n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n */\n
AstTransformer.prototype.visitKeyedRead = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n */\n function (ast, context) {\n return new KeyedRead(ast.span,
ast.obj.visit(this), ast.key.visit(this));\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n */\n
AstTransformer.prototype.visitKeyedWrite = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n */\n function (ast, context) {\n return new KeyedWrite(ast.span, ast.obj.visit(this),
ast.key.visit(this), ast.value.visit(this));\n };\n /**\n * @param {?} ast\n * @return {?}\n */\n
AstTransformer.prototype.visitAll = /**\n * @param {?} ast\n * @return {?}\n */\n function (asts) {\n
var /** @type {?} */ res = new Array(asts.length);\n for (var /** @type {?} */ i = 0; i < asts.length; ++i) {\n
res[i] = asts[i].visit(this);\n }\n return res;\n };\n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n */\n
AstTransformer.prototype.visitChain = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n */\n function (ast, context) {\n return new Chain(ast.span,
this.visitAll(ast.expressions));\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n
*/\n
AstTransformer.prototype.visitQuote = /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n */\n function (ast, context) {\n return new Quote(ast.span, ast.prefix, ast.uninterpretedExpression,

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this._lexer.tokenize(this._stripComments(input));\n var /** @type {?} */ ast = new _ParseAST(input, location,
tokens, sourceToLex.length, true, this.errors, input.length - sourceToLex.length)\n .parseChain();\n
return new ASTWithSource(ast, input, location, this.errors);\n }; \n /**\n * @param {?} input\n * @param
{?} location\n * @param {?=} interpolationConfig\n * @return {?}\n */\n Parser.prototype.parseBinding =
/**\n * @param {?} input\n * @param {?} location\n * @param {?=} interpolationConfig\n * @return
{?}\n */\n function (input, location, interpolationConfig) {\n if (interpolationConfig === void 0) {\n
interpolationConfig = DEFAULT_INTERPOLATION_CONFIG; }\n var /** @type {?} */ ast =
this._parseBindingAst(input, location, interpolationConfig);\n return new ASTWithSource(ast, input, location,
this.errors);\n }; \n /**\n * @param {?} input\n * @param {?} location\n * @param {?=}
interpolationConfig\n * @return {?}\n */\n Parser.prototype.parseSimpleBinding = /**\n * @param {?}
input\n * @param {?} location\n * @param {?=} interpolationConfig\n * @return {?}\n */\n function
(input, location, interpolationConfig) {\n if (interpolationConfig === void 0) {\n interpolationConfig =
DEFAULT_INTERPOLATION_CONFIG; }\n var /** @type {?} */ ast = this._parseBindingAst(input,
location, interpolationConfig);\n var /** @type {?} */ errors = SimpleExpressionChecker.check(ast);\n if
(errors.length > 0) {\n this._reportError("Host binding expression cannot contain \" + errors.join(' '), input,
location);\n }\n return new ASTWithSource(ast, input, location, this.errors);\n }; \n /**\n * @param
{?} message\n * @param {?} input\n * @param {?} errLocation\n * @param {?=} ctxLocation\n *
@return {?}\n */\n Parser.prototype._reportError = /**\n * @param {?} message\n * @param {?} input\n
* @param {?} errLocation\n * @param {?=} ctxLocation\n * @return {?}\n */\n function (message,
input, errLocation, ctxLocation) {\n this.errors.push(new ParserError(message, input, errLocation,
ctxLocation));\n }; \n /**\n * @param {?} input\n * @param {?} location\n * @param {?}
interpolationConfig\n * @return {?}\n */\n Parser.prototype._parseBindingAst = /**\n * @param {?}
input\n * @param {?} location\n * @param {?} interpolationConfig\n * @return {?}\n */\n function
(input, location, interpolationConfig) {\n // Quotes expressions use 3rd-party expression language. We don't
want to use\n // our lexer or parser for that, so we check for that ahead of time.\n var /** @type {?} */ quote
= this._parseQuote(input, location);\n if (quote != null) {\n return quote;\n }\n this._checkNoInterpolation(input, location, interpolationConfig);\n var /** @type {?} */ sourceToLex =
this._stripComments(input);\n var /** @type {?} */ tokens = this._lexer.tokenize(sourceToLex);\n return
new _ParseAST(input, location, tokens, sourceToLex.length, false, this.errors, input.length - sourceToLex.length)\n
.parseChain();\n }; \n /**\n * @param {?} input\n * @param {?} location\n * @return {?}\n */\n Parser.prototype._parseQuote = /**\n * @param {?} input\n * @param {?} location\n * @return {?}\n */\n function (input, location) {\n if (input == null)\n return null;\n var /** @type {?} */
prefixSeparatorIndex = input.indexOf(':');\n if (prefixSeparatorIndex == -1)\n return null;\n var /**
@type {?} */ prefix = input.substring(0, prefixSeparatorIndex).trim();\n if (!isIdentifier(prefix))\n return
null;\n var /** @type {?} */ uninterpretedExpression = input.substring(prefixSeparatorIndex + 1);\n return
new Quote(new ParseSpan(0, input.length), prefix, uninterpretedExpression, location);\n }; \n /**\n * @param
{?} prefixToken\n * @param {?} input\n * @param {?} location\n * @return {?}\n */\n Parser.prototype.parseTemplateBindings = /**\n * @param {?} prefixToken\n * @param {?} input\n *
@param {?} location\n * @return {?}\n */\n function (prefixToken, input, location) {\n var /** @type
{?} */ tokens = this._lexer.tokenize(input);\n if (prefixToken) {\n // Prefix the tokens with the tokens
from prefixToken but have them take no space (0 index).\n var /** @type {?} */ prefixTokens =
this._lexer.tokenize(prefixToken).map(function (t) {\n t.index = 0;\n return t;\n });\n }\n tokens.unshift.apply(tokens, prefixTokens);\n }\n return new _ParseAST(input, location, tokens,
input.length, false, this.errors, 0)\n .parseTemplateBindings();\n }; \n /**\n * @param {?} input\n *
@param {?} location\n * @param {?=} interpolationConfig\n * @return {?}\n */\n Parser.prototype.parseInterpolation = /**\n * @param {?} input\n * @param {?} location\n * @param {?=}
interpolationConfig\n * @return {?}\n */\n function (input, location, interpolationConfig) {\n if
(interpolationConfig === void 0) {\n interpolationConfig = DEFAULT_INTERPOLATION_CONFIG; }\n var

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/** @type {?} */ split = this.splitInterpolation(input, location, interpolationConfig);\n if (split === null)\nreturn null;\n var /** @type {?} */ expressions = [];\n for (var /** @type {?} */ i = 0; i <\nsplit.expressions.length; ++i) {\n var /** @type {?} */ expressionText = split.expressions[i];\n var /**\n @type {?} */ sourceToLex = this._stripComments(expressionText);\n var /** @type {?} */ tokens =\nthis._lexer.tokenize(sourceToLex);\n var /** @type {?} */ ast = new _ParseAST(input, location, tokens,\nsourceToLex.length, false, this.errors, split.offsets[i] + (expressionText.length - sourceToLex.length))\n.parseChain();\n expressions.push(ast);\n }\n return new ASTWithSource(new Interpolation(new\nParseSpan(0, input == null ? 0 : input.length), split.strings, expressions), input, location, this.errors);\n};\n\n/**\n * @param {?} input\n * @param {?} location\n * @param {?=} interpolationConfig\n * @return {?}\n */\nParser.prototype.splitInterpolation = /**\n * @param {?} input\n * @param {?} location\n * @param\n {?=} interpolationConfig\n * @return {?}\n */\nfunction (input, location, interpolationConfig) {\n if\n(interpolationConfig === void 0) { interpolationConfig = DEFAULT_INTERPOLATION_CONFIG; }\n var\n /** @type {?} */ regexp = _createInterpolateRegExp(interpolationConfig);\n var /** @type {?} */ parts =\ninput.split(regexp);\n if (parts.length <= 1) {\n return null;\n }\n var /** @type {?} */ strings =\n[];\n var /** @type {?} */ expressions = [];\n var /** @type {?} */ offsets = [];\n var /** @type {?} */\noffset = 0;\n for (var /** @type {?} */ i = 0; i < parts.length; i++) {\n var /** @type {?} */ part =\nparts[i];\n if (i % 2 === 0) {\n // fixed string\n strings.push(part);\n offset +=\npart.length;\n }\n else if (part.trim().length > 0) {\n offset +=\ninterpolationConfig.start.length;\n expressions.push(part);\n offsets.push(offset);\n offset += part.length + interpolationConfig.end.length;\n }\n else {\n this._reportError('Blank\nexpressions are not allowed in interpolated strings', input, 'at column ' + this._findInterpolationErrorColumn(parts,\ni, interpolationConfig) + ' in', location);\n expressions.push('$implicit');\n offsets.push(offset);\n }\n }\n return new SplitInterpolation(strings, expressions, offsets);\n};\n\n/**\n * @param {?} input\n * @param {?} location\n * @return {?}\n */\nParser.prototype.wrapLiteralPrimitive = /**\n * @param {?} input\n * @param {?} location\n * @return {?}\n */\nfunction (input, location) {\n return new ASTWithSource(new LiteralPrimitive(new ParseSpan(0, input == null ? 0 : input.length), input), input,\nlocation, this.errors);\n};\n\n/**\n * @param {?} input\n * @return {?}\n */\nParser.prototype._stripComments = /**\n * @param {?} input\n * @return {?}\n */\nfunction (input) {\n var /** @type {?} */ i = this._commentStart(input);\n return i != null ? input.substring(0, i).trim() : input;\n};\n\n/**\n * @param {?} input\n * @return {?}\n */\nParser.prototype._commentStart = /**\n * @param {?} input\n * @return {?}\n */\nfunction (input) {\n var /** @type {?} */ outerQuote = null;\n for (var /** @type {?} */ i = 0; i < input.length - 1; i++) {\n var /** @type {?} */ char =\ninput.charCodeAt(i);\n var /** @type {?} */ nextChar = input.charCodeAt(i + 1);\n if (char ===\n$SLASH && nextChar === $SLASH && outerQuote === null)\n return i;\n if (outerQuote === char)\n {\n outerQuote = null;\n }\n else if (outerQuote === null && isQuote(char)) {\n outerQuote = char;\n }\n }\n return null;\n};\n\n/**\n * @param {?} input\n * @param {?} location\n * @param {?} interpolationConfig\n * @return {?}\n */\nParser.prototype._checkNoInterpolation = /**\n * @param {?} input\n * @param {?} location\n * @param\n {?} interpolationConfig\n * @return {?}\n */\nfunction (input, location, interpolationConfig) {\n var /**\n @type {?} */ regexp = _createInterpolateRegExp(interpolationConfig);\n var /** @type {?} */ parts =\ninput.split(regexp);\n if (parts.length > 1) {\n this._reportError('Got interpolation (' +\ninterpolationConfig.start + interpolationConfig.end + ') where expression was expected', input, 'at column ' +\nthis._findInterpolationErrorColumn(parts, 1, interpolationConfig) + ' in', location);\n }\n};\n\n/**\n * @param {?} parts\n * @param {?} partInErrIdx\n * @param {?} interpolationConfig\n * @return {?}\n */\nParser.prototype._findInterpolationErrorColumn = /**\n * @param {?} parts\n * @param {?} partInErrIdx\n * @param {?} interpolationConfig\n * @return {?}\n */\nfunction (parts, partInErrIdx,\ninterpolationConfig) {\n var /** @type {?} */ errLocation = '';\n for (var /** @type {?} */ j = 0; j <\npartInErrIdx; j++) {\n errLocation += j % 2 === 0 ? '\n parts[j] :\n '\\\"' +

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interpolationConfig.start + parts[j] + interpolationConfig.end;\n }\n return errLocation.length;\n });\n return Parser;\n})();\nvar _ParseAST = /** @class */ (function () {\n function _ParseAST(input, location, tokens, inputLength, parseAction, errors, offset) {\n this.input = input;\n this.location = location;\n this.tokens = tokens;\n this.inputLength = inputLength;\n this.parseAction = parseAction;\n this.errors = errors;\n this.offset = offset;\n this.rparensExpected = 0;\n this.rbracketsExpected = 0;\n this.rbracesExpected = 0;\n this.index = 0;\n }\n /**\n * @param {?} offset\n * @return {?}\n */\n _ParseAST.prototype.peek = /**\n * @param {?} offset\n * @return {?}\n */\n function (offset) {\n var /** @type {?} */ i = this.index + offset;\n return i < this.tokens.length ? this.tokens[i] : EOF;\n };\n Object.defineProperty(_ParseAST.prototype, "next", {\n get: /**\n * @return {?}\n */\n function () { return this.peek(0); },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(_ParseAST.prototype, "inputIndex", {\n get: /**\n * @return {?}\n */\n function () {\n return (this.index < this.tokens.length) ? this.next.index + this.offset :\n this.inputLength + this.offset;\n },\n enumerable: true,\n configurable: true\n });\n /**\n * @param {?} start\n * @return {?}\n */\n _ParseAST.prototype.span = /**\n * @param {?} start\n * @return {?}\n */\n function (start) { return new ParseSpan(start, this.inputIndex); };\n /**\n * @return {?}\n */\n _ParseAST.prototype.advance = /**\n * @return {?}\n */\n function () { this.index++; };\n /**\n * @param {?} code\n * @return {?}\n */\n _ParseAST.prototype.optionalCharacter = /**\n * @param {?} code\n * @return {?}\n */\n function (code) {\n if (this.next.isCharacter(code)) {\n this.advance();\n return true;\n } else {\n return false;\n }\n };\n /**\n * @return {?}\n */\n _ParseAST.prototype.peekKeywordLet = /**\n * @return {?}\n */\n function () { return this.next.isKeywordLet(); };\n /**\n * @return {?}\n */\n _ParseAST.prototype.peekKeywordAs = /**\n * @return {?}\n */\n function () { return this.next.isKeywordAs(); };\n /**\n * @param {?} code\n * @return {?}\n */\n _ParseAST.prototype.expectCharacter = /**\n * @param {?} code\n * @return {?}\n */\n function (code) {\n if (this.optionalCharacter(code))\n return;\n this.error("Missing expected\n" + String.fromCharCode(code));\n };\n /**\n * @param {?} op\n * @return {?}\n */\n _ParseAST.prototype.optionalOperator = /**\n * @param {?} op\n * @return {?}\n */\n function (op) {\n if (this.next.isOperator(op)) {\n this.advance();\n return true;\n } else {\n return false;\n }\n };\n /**\n * @param {?} operator\n * @return {?}\n */\n _ParseAST.prototype.expectOperator = /**\n * @param {?} operator\n * @return {?}\n */\n function (operator) {\n if (this.optionalOperator(operator))\n return;\n this.error("Missing expected operator\n" + operator);\n };\n /**\n * @return {?}\n */\n _ParseAST.prototype.expectIdentifierOrKeyword = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ n = this.next;\n if (!n.isIdentifier() && !n.isKeyword()) {\n this.error("Unexpected token\n" + n + "\n", expected identifier or keyword);\n return n;\n }\n this.advance();\n return /** @type {?} */ (n.toString());\n };\n /**\n * @return {?}\n */\n _ParseAST.prototype.expectIdentifierOrKeywordOrString = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ n = this.next;\n if (!n.isIdentifier() && !n.isKeyword() && !n.isString()) {\n this.error("Unexpected token\n" + n + "\n", expected identifier, keyword, or string);\n return n;\n }\n this.advance();\n return /** @type {?} */ (n.toString());\n };\n /**\n * @return {?}\n */\n _ParseAST.prototype.parseChain = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ exprs = [];\n var /** @type {?} */ start = this.inputIndex;\n while (this.index < this.tokens.length) {\n var /** @type {?} */ expr = this.parsePipe();\n exprs.push(expr);\n if (this.optionalCharacter($SEMICOLON)) {\n if (!this.parseAction) {\n this.error('Binding expression cannot contain chained expression');\n }\n while (this.optionalCharacter($SEMICOLON)) {\n // read all semicolons\n }\n } else if (this.index < this.tokens.length) {\n this.error("Unexpected token\n" + this.next + "\n");\n }\n if (exprs.length === 0)\n return new EmptyExpr(this.span(start));\n if (exprs.length === 1)\n return exprs[0];\n return new Chain(this.span(start), exprs);\n }\n };\n /**\n * @return {?}\n */\n _ParseAST.prototype.parsePipe = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ result

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= this.parseExpression();\n if (this.optionalOperator('|')) {\n if (this.parseAction) {\n this.error('Cannot have a pipe in an action expression');\n }\n do {\n var /** @type {?} */\n name_1 = this.expectIdentifierOrKeyword();\n var /** @type {?} */ args = [];\n while\n (this.optionalCharacter($COLON)) {\n args.push(this.parseExpression());\n }\n result\n = new BindingPipe(this.span(result.span.start), result, name_1, args);\n } while (this.optionalOperator('|'));\n }\n return result;\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseExpression = /**\n *\n * @return {?}\n *\n * ^\n * function () { return this.parseConditional(); }\n */\n *\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseConditional = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n var /** @type {?} */\n start = this.inputIndex;\n var /** @type {?} */ result = this.parseLogicalOr();\n if\n (this.optionalOperator('?')) {\n var /** @type {?} */ yes = this.parsePipe();\n var /** @type {?} */ no\n = void 0;\n if (!this.optionalCharacter($COLON)) {\n var /** @type {?} */ end = this.inputIndex;\n var /** @type {?} */ expression = this.input.substring(start, end);\n this.error(\"Conditional\n expression \" + expression + \" requires all 3 expressions\");\n no = new EmptyExpr(this.span(start));\n }\n else {\n no = this.parsePipe();\n }\n return new Conditional(this.span(start),\n result, yes, no);\n }\n else {\n return result;\n }\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseLogicalOr = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n // \"||\"\n var /**\n @type {?} */ result = this.parseLogicalAnd();\n while (this.optionalOperator('|')) {\n var /** @type {?} */\n /**\n */ right = this.parseLogicalAnd();\n result = new Binary(this.span(result.span.start), '|', result, right);\n }\n return result;\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseLogicalAnd = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n // '&&'\n var /** @type {?} */ result = this.parseEquality();\n while (this.optionalOperator('&&')) {\n var /** @type {?} */ right = this.parseEquality();\n result =\n new Binary(this.span(result.span.start), '&&', result, right);\n }\n return result;\n};\n/**\n * @return\n * {?}\n * ^\n * _ParseAST.prototype.parseEquality = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n //\n '==', '!=', '===', '!=='\n var /** @type {?} */ result = this.parseRelational();\n while (this.next.type ==\n TokenType.Operator) {\n var /** @type {?} */ operator = this.next.strValue;\n switch (operator) {\n case '==':\n case '===':\n case '!=':\n case '!==':\n this.advance();\n var /** @type {?} */ right = this.parseRelational();\n result = new\n Binary(this.span(result.span.start), operator, result, right);\n continue;\n }\n break;\n }\n }\n return result;\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseRelational = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n // '<', '>', '<=', '>='\n var /** @type {?} */ result =\n this.parseAdditive();\n while (this.next.type == TokenType.Operator) {\n var /** @type {?} */ operator\n = this.next.strValue;\n switch (operator) {\n case '<':\n case '>':\n case '<=':\n case '>=':\n this.advance();\n var /** @type {?} */ right = this.parseAdditive();\n result = new Binary(this.span(result.span.start), operator, result, right);\n continue;\n }\n break;\n }\n }\n return result;\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseAdditive\n = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n // '+', '-'\n var /** @type {?} */ result =\n this.parseMultiplicative();\n while (this.next.type == TokenType.Operator) {\n var /** @type {?} */\n operator = this.next.strValue;\n switch (operator) {\n case '+':\n case '-':\n this.advance();\n var /** @type {?} */ right = this.parseMultiplicative();\n result = new\n Binary(this.span(result.span.start), operator, result, right);\n continue;\n }\n break;\n }\n }\n return result;\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parseMultiplicative = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n // '*', '%', '/'\n var /** @type {?} */ result = this.parsePrefix();\n while (this.next.type == TokenType.Operator) {\n var /** @type {?} */ operator = this.next.strValue;\n switch (operator) {\n case '*':\n case '%':\n case '/':\n this.advance();\n var /** @type {?} */ right = this.parsePrefix();\n result = new Binary(this.span(result.span.start),\n operator, result, right);\n continue;\n }\n break;\n }\n }\n return result;\n};\n/**\n * @return {?}\n *\n * ^\n * _ParseAST.prototype.parsePrefix = /**\n *\n * @return {?}\n *\n * ^\n * function () {\n if (this.next.type == TokenType.Operator) {\n var /** @type {?} */ start = this.inputIndex;\n var /**

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@type {?} */ operator = this.next.strValue;\n var /** @type {?} */ result = void 0;\n switch (operator)
{\n case '+':\n this.advance();\n return this.parsePrefix();\n case '-':\n this.advance();\n result = this.parsePrefix();\n return new Binary(this.span(start),
operator, new LiteralPrimitive(new ParseSpan(start, start), 0), result);\n case '!':\n this.advance();\n result = this.parsePrefix();\n return new PrefixNot(this.span(start),
result);\n }\n }\n return this.parseCallChain();\n };\n /**\n * @return {?} */\n ^/\n _ParseAST.prototype.parseCallChain = /**\n * @return {?} */\n ^/\n function () {\n var /** @type {?} */
result = this.parsePrimary();\n while (true) {\n if (this.optionalCharacter($PERIOD)) {\n result
= this.parseAccessMemberOrMethodCall(result, false);\n }\n else if (this.optionalOperator('?')) {\n
 result = this.parseAccessMemberOrMethodCall(result, true);\n }\n else if
(this.optionalCharacter($LBACKET)) {\n this.rbracketsExpected++;\n var /** @type {?} */
key = this.parsePipe();\n this.rbracketsExpected--;\n this.expectCharacter($RBACKET);\n
 if (this.optionalOperator('=')) {\n var /** @type {?} */ value = this.parseConditional();\n
 result = new KeyedWrite(this.span(result.span.start), result, key, value);\n }\n else {\n
 result = new KeyedRead(this.span(result.span.start), result, key);\n }\n }\n else if
(this.optionalCharacter($LPAREN)) {\n this.rparensExpected++;\n var /** @type {?} */ args =
this.parseCallArguments();\n this.rparensExpected--;\n this.expectCharacter($RPAREN);\n
 result = new FunctionCall(this.span(result.span.start), result, args);\n }\n else if
(this.optionalOperator('!')) {\n result = new NonNullAssert(this.span(result.span.start), result);\n }\n
 else {\n return result;\n }\n }\n };\n /**\n * @return {?} */\n ^/\n _ParseAST.prototype.parsePrimary = /**\n * @return {?} */\n ^/\n function () {\n var /** @type {?} */
start = this.inputIndex;\n if (this.optionalCharacter($LPAREN)) {\n this.rparensExpected++;\n var
/** @type {?} */ result = this.parsePipe();\n this.rparensExpected--;\n
 this.expectCharacter($RPAREN);\n return result;\n }\n else if (this.next.isKeywordNull()) {\n
 this.advance();\n return new LiteralPrimitive(this.span(start), null);\n }\n else if
(this.next.isKeywordUndefined()) {\n this.advance();\n return new LiteralPrimitive(this.span(start),
void 0);\n }\n else if (this.next.isKeywordTrue()) {\n this.advance();\n return new
LiteralPrimitive(this.span(start), true);\n }\n else if (this.next.isKeywordFalse()) {\n this.advance();\n
 return new LiteralPrimitive(this.span(start), false);\n }\n else if (this.next.isKeywordThis()) {\n
 this.advance();\n return new ImplicitReceiver(this.span(start));\n }\n else if
(this.optionalCharacter($LBACKET)) {\n this.rbracketsExpected++;\n var /** @type {?} */
elements = this.parseExpressionList($RBACKET);\n this.rbracketsExpected--;\n
 this.expectCharacter($RBACKET);\n return new LiteralArray(this.span(start), elements);\n }\n
 else if (this.next.isCharacter($LBRACE)) {\n return this.parseLiteralMap();\n }\n else if
(this.next.isIdentifier()) {\n return this.parseAccessMemberOrMethodCall(new
ImplicitReceiver(this.span(start)), false);\n }\n else if (this.next.isNumber()) {\n var /** @type {?}
*/ value = this.next.toNumber();\n this.advance();\n return new LiteralPrimitive(this.span(start),
value);\n }\n else if (this.next.isString()) {\n var /** @type {?} */ literalValue =
this.next.toString();\n this.advance();\n return new LiteralPrimitive(this.span(start), literalValue);\n
 }\n else if (this.index >= this.tokens.length) {\n this.error("Unexpected end of expression: \" +
this.input);\n return new EmptyExpr(this.span(start));\n }\n else {\n this.error("Unexpected
token \" + this.next);\n return new EmptyExpr(this.span(start));\n }\n };\n /**\n * @param {?}
*/\n terminator\n * @return {?} */\n ^/\n _ParseAST.prototype.parseExpressionList = /**\n * @param {?}
*/\n terminator\n * @return {?} */\n ^/\n function (terminator) {\n var /** @type {?} */ result = [];\n if
(!this.next.isCharacter(terminator)) {\n do {\n result.push(this.parsePipe());\n } while
(this.optionalCharacter($COMMA));\n }\n return result;\n };\n /**\n * @return {?} */\n ^/\n _ParseAST.prototype.parseLiteralMap = /**\n * @return {?} */\n ^/\n function () {\n var /** @type {?} */
keys = [];\n var /** @type {?} */ values = [];\n var /** @type {?} */ start = this.inputIndex;\n

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this.expectCharacter($LBRACE);\n if (!this.optionalCharacter($RBRACE)) {\n
this.rbracesExpected++;\n do {\n var /** @type {?} */ quoted = this.next.isString();\n var\n/** @type {?} */ key = this.expectIdentifierOrKeywordOrString();\n keys.push({ key: key, quoted: quoted\n});\n this.expectCharacter($COLON);\n values.push(this.parsePipe());\n } while\n(this.optionalCharacter($COMMA));\n this.rbracesExpected--;\n this.expectCharacter($RBRACE);\n }\n return new LiteralMap(this.span(start), keys, values);\n};\n/**\n * @param {?} receiver\n * @param {?=} isSafe\n * @return {?}\n */\n_ParseAST.prototype.parseAccessMemberOrMethodCall =\n/**\n * @param {?} receiver\n * @param {?=} isSafe\n * @return {?}\n */\nfunction (receiver, isSafe)\n{\n if (isSafe === void 0) { isSafe = false; }\n var /** @type {?} */ start = receiver.span.start;\n var /**\n * @type {?} */ id = this.expectIdentifierOrKeyword();\n if (this.optionalCharacter($LPAREN)) {\nthis.rparensExpected++;\n var /** @type {?} */ args = this.parseCallArguments();\nthis.expectCharacter($RPAREN);\n this.rparensExpected--;\n var /** @type {?} */ span =\nthis.span(start);\n return isSafe ? new SafeMethodCall(span, receiver, id, args) : new\nMethodCall(span, receiver, id, args);\n }\n else {\n if (isSafe) {\n if\n(this.optionalOperator('=')) {\n this.error('The `=` operator cannot be used in the assignment');\n return new EmptyExpr(this.span(start));\n }\n else {\n return new\nSafePropertyRead(this.span(start), receiver, id);\n }\n }\n else {\n if\n(this.optionalOperator('=')) {\n if (!this.parseAction) {\n this.error('Bindings cannot\ncontain assignments');\n return new EmptyExpr(this.span(start));\n }\n var /**\n * @type {?} */ value = this.parseConditional();\n return new PropertyWrite(this.span(start), receiver, id,\nvalue);\n }\n else {\n return new PropertyRead(this.span(start), receiver, id);\n }\n }\n }\n};\n/**\n * @return {?}\n */\n_ParseAST.prototype.parseCallArguments = /**\n * @return {?}\n */\nfunction () {\n if (this.next.isCharacter($RPAREN))\n return [];\n var /**\n * @type {?} */ positionals = [];\n do {\n positionals.push(this.parsePipe());\n } while\n(this.optionalCharacter($COMMA));\n return /** @type {?} */ (positionals);\n};\n/**\n * An identifier,\na keyword, a string with an optional `` inbetween.\n */\n/**\n * An identifier, a keyword, a string with an\noptional `` inbetween.\n */\n * @return {?}\n */\n_ParseAST.prototype.expectTemplateBindingKey = /**\n * An identifier, a keyword, a string with an optional `` inbetween.\n */\n * @return {?}\n */\nfunction () {\n var /** @type {?} */ result = '';\n var /** @type {?} */ operatorFound = false;\n do {\n result +=\nthis.expectIdentifierOrKeywordOrString();\n operatorFound = this.optionalOperator('-');\n if\n(operatorFound) {\n result += '-';\n }\n } while (operatorFound);\n return result.toString();\n};\n/**\n * @return {?}\n */\n_ParseAST.prototype.parseTemplateBindings = /**\n * @return {?}\n */\nfunction () {\n var /** @type {?} */ bindings = [];\n var /** @type {?} */ prefix = /** @type {?} */\n((null));\n var /** @type {?} */ warnings = [];\n while (this.index < this.tokens.length) {\n var /**\n * @type {?} */ start = this.inputIndex;\n var /** @type {?} */ keyIsVar = this.peekKeywordLet();\n if\n(keyIsVar) {\n this.advance();\n }\n var /** @type {?} */ rawKey =\nthis.expectTemplateBindingKey();\n var /** @type {?} */ key = rawKey;\n if (!keyIsVar) {\n if (prefix == null) {\n prefix = key;\n }\n else {\n key = prefix +\nkey[0].toUpperCase() + key.substring(1);\n }\n }\n this.optionalCharacter($COLON);\n var /** @type {?} */ name_2 = /** @type {?} */ ((null));\n var /** @type {?} */ expression = /** @type\n * {?} */ ((null));\n if (keyIsVar) {\n if (this.optionalOperator('=')) {\n name_2 =\nthis.expectTemplateBindingKey();\n }\n else {\n name_2 = '\\$Simplicit';\n }\n }\n else if (this.peekKeywordAs()) {\n var /** @type {?} */ letStart = this.inputIndex;\n this.advance(); // consume `as`\n name_2 = rawKey;\n key =\nthis.expectTemplateBindingKey(); // read local var name\n keyIsVar = true;\n }\n else if\n(this.next !== EOF && !this.peekKeywordLet()) {\n var /** @type {?} */ start_1 = this.inputIndex;\n var /** @type {?} */ ast = this.parsePipe();\n var /** @type {?} */ source = this.input.substring(start_1\n- this.offset, this.inputIndex - this.offset);\n expression = new ASTWithSource(ast, source, this.location,\n
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this.errors);\n }\n bindings.push(new TemplateBinding(this.span(start), key, keyIsVar, name_2,\nexpression));\n if (this.peekKeywordAs() && !keyIsVar) {\n var /** @type {?} */ letStart =\nthis.inputIndex;\n this.advance(); // consume `as`\n var /** @type {?} */ letName =\nthis.expectTemplateBindingKey(); // read local var name\n bindings.push(new\nTemplateBinding(this.span(letStart), letName, true, key, /** @type {?} */ ((null)));\n }\n if\n(!this.optionalCharacter($SEMICOLON)) {\n this.optionalCharacter($COMMA);\n }\n }\n return new TemplateBindingParseResult(bindings, warnings, this.errors);\n};\n/**\n * @param {?}\nmessage\n * @param {?=} index\n * @return {?}\n */\n_ParseAST.prototype.error = /**\n * @param\n{?} message\n * @param {?=} index\n * @return {?}\n */\n function (message, index) {\n if (index\n=== void 0) { index = null; }\n this.errors.push(new ParserError(message, this.input, this.locationText(index),\nthis.location));\n this.skip();\n};\n/**\n * @param {?=} index\n * @return {?}\n */\n_ParseAST.prototype.locationText = /**\n * @param {?=} index\n * @return {?}\n */\n function (index)\n{\n if (index === void 0) { index = null; }\n if (index == null)\n index = this.index;\n return\n(index < this.tokens.length) ? \"at column \" + (this.tokens[index].index + 1) + \" in\" +\n \"\\n\" + \"at the end of the\nexpression\";\n};\n/**\n * @return {?}\n */\n_ParseAST.prototype.skip = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ n = this.next;\n while (this.index < this.tokens.length &&\n!n.isCharacter($SEMICOLON) &&\n (this.rparensExpected <= 0 || !n.isCharacter($RPAREN)) &&\n(this.rbracesExpected <= 0 || !n.isCharacter($RBRACE)) &&\n (this.rbracketsExpected <= 0 ||\n!n.isCharacter($RBRACKET))) {\n if (this.next.isError()) {\n this.errors.push(new ParserError(/**\n@type {?} */ ((this.next.toString())), this.input, this.locationText(), this.location));\n }\n this.advance();\n n = this.next;\n }\n};\nreturn _ParseAST;\n})();\nvar SimpleExpressionChecker =\n/** @class */ (function () {\n function SimpleExpressionChecker() {\n this.errors = [];\n }\n /**\n * @param {?} ast\n * @return {?}\n */\n SimpleExpressionChecker.check = /**\n * @param {?} ast\n * @return {?}\n */\n function (ast) {\n var /** @type {?} */ s = new SimpleExpressionChecker();\n ast.visit(s);\n return s.errors;\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return\n{?}\n */\n SimpleExpressionChecker.prototype.visitImplicitReceiver = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitInterpolation = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitLiteralPrimitive = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitPropertyRead = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitPropertyWrite = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitSafePropertyRead = /**\n * @param {?} ast\n * @param {?}\ncontext\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?}\ncontext\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitMethodCall = /**\n * @param\n{?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param\n{?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitSafeMethodCall = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitFunctionCall = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) { }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n SimpleExpressionChecker.prototype.visitLiteralArray = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {

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this.visitAll(ast.expressions); };
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitLiteralMap = /**
 * @param {?} ast
 * @param {?}
context
 * @return {?}
 */
function (ast, context) { this.visitAll(ast.values); };
/**
 * @param {?}
ast
 * @param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitBinary =
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) { };
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitPrefixNot = /**
 * @param {?} ast
 * @param {?} context
 *
@return {?}
 */
function (ast, context) { };
/**
 * @param {?} ast
 * @param {?} context
 *
@return {?}
 */
SimpleExpressionChecker.prototype.visitNonNullAssert = /**
 * @param {?} ast
 *
@param {?} context
 * @return {?}
 */
function (ast, context) { };
/**
 * @param {?} ast
 *
@param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitConditional = /**
 *
@param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) { };
/**
 *
@param {?} ast
 * @param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitPipe = /**
 *
@param {?} ast
 * @param {?} context
 *
@return {?}
 */
function (ast, context) { this.errors.push('pipes'); };
/**
 *
@param {?} ast
 *
@param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitKeyedRead = /**
 *
@param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) { };
/**
 *
@param {?} ast
 * @param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitKeyedWrite = /**
 *
@param {?} ast
 * @param {?} context
 *
@return {?}
 */
function (ast, context) { };
/**
 *
@param {?} asts
 * @return {?}
 */
function
(asts) {
 var _this = this;
 return asts.map(function (node) { return node.visit(_this); });
};
/**
 *
@param {?} ast
 * @param {?} context
 * @return {?}
 */
SimpleExpressionChecker.prototype.visitChain = /**
 *
@param {?} ast
 * @param {?} context
 *
@return {?}
 */
function (ast, context) { };
/**
 *
@param {?} ast
 * @param {?} context
 *
@return {?}
 */
SimpleExpressionChecker.prototype.visitQuote = /**
 *
@param {?} ast
 * @param
{?} context
 * @return {?}
 */
function (ast, context) { };
return
SimpleExpressionChecker;
})();
/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked
by tsc
 */
var ParseLocation = /** @class */ (function () {
 function ParseLocation(file, offset, line, col) {
 this.file = file;
 this.offset = offset;
 this.line = line;
 this.col = col;
 }
 /**
 * @return {?}
 */
 ParseLocation.prototype.toString = /**
 * @return {?}
 */
 function () {
 return
this.offset != null ? this.file.url + "@" + this.line + ":" + this.col : this.file.url;
 };
 /**
 * @param {?}
delta
 * @return {?}
 */
 ParseLocation.prototype.moveBy = /**
 * @param {?} delta
 * @return
{?}
 */
 function (delta) {
 var /** @type {?} */ source = this.file.content;
 var /** @type {?} */ len = source.length;
 var /** @type {?} */ offset = this.offset;
 var /** @type {?} */ line = this.line;
 var /** @type {?} */ col = this.col;
 while (offset > 0 && delta < 0) {
 offset--;
 delta++;
 var /** @type {?} */ ch = source.charCodeAt(offset);
 if (ch == $LF) {
 line--;
 var
/** @type {?} */ priorLine = source.substr(0, offset - 1).lastIndexOf(String.fromCharCode($LF));
 col =
priorLine > 0 ? offset - priorLine : offset;
 }
 else {
 col--;
 }
 }
 while
(offset < len && delta > 0) {
 var /** @type {?} */ ch = source.charCodeAt(offset);
 offset++;
 delta--;
 if (ch == $LF) {
 line++;
 col = 0;
 }
 else {
 col++;
 }
 }
 return new ParseLocation(this.file, offset, line, col);
 };
 // Return the source
around the location
 // Up to `maxChars` or `maxLines` on each side of the location
 /**
 * @param {?}
maxChars
 * @param {?} maxLines
 * @return {?}
 */
 ParseLocation.prototype.getContext = /**
 *
@param {?} maxChars
 * @param {?} maxLines
 * @return {?}
 */
 function (maxChars,
maxLines) {
 var /** @type {?} */ content = this.file.content;
 var /** @type {?} */ startOffset =
this.offset;
 if (startOffset != null) {
 if (startOffset > content.length - 1) {
 startOffset =
content.length - 1;
 }
 var /** @type {?} */ endOffset = startOffset;
 var /** @type {?} */

```







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}\n
else {\n
 this._consumeDocType(start);\n
}\n
}\n
else if (this._attemptCharCode($SLASH)) {\n
 this._consumeTagClose(start);\n
}\n
else {\n
 this._consumeTagOpen(start);\n
}\n
}\n
else if
(!this._tokenizeIcu && this._tokenizeExpansionForm()) {\n
 this._consumeText();\n
}\n
}\n
catch (** @type {?} */ e) {\n
 if (e instanceof _ControlFlowError) {\n
this.errors.push(e.error);\n
}\n
else {\n
 throw e;\n
}\n
}\n
}\n
this._beginToken(TokenTypes.EOF);\n
this._endToken();\n
return new
TokenizeResult(mergeTextTokens(this.tokens), this.errors);\n
};\n
/**\n
 * \\@internal\n
 * @return {?}
whether an ICU token has been created\n
 *^\\n
 _Tokenizer.prototype._tokenizeExpansionForm = /**\n
 *
\\@internal\n
 * @return {?}
whether an ICU token has been created\n
 *^\\n
function () {\n
 if
(isExpansionFormStart(this._input, this._index, this._interpolationConfig)) {\n
this._consumeExpansionFormStart();\n
return true;\n
}\n
if (isExpansionCaseStart(this._peek) &&
this._isInExpansionForm()) {\n
 this._consumeExpansionCaseStart();\n
return true;\n
}\n
if
(this._peek === $RBRACE) {\n
 if (this._isInExpansionCase()) {\n
this._consumeExpansionCaseEnd();\n
return true;\n
}\n
if (this._isInExpansionForm()) {\n
 this._consumeExpansionFormEnd();\n
return true;\n
}\n
}\n
return false;\n
};\n
/**\n
 * @return {?}
^\\n
 _Tokenizer.prototype._getLocation = /**\n
 * @return {?}
^\\n
function ()
{\n
return new ParseLocation(this._file, this._index, this._line, this._column);\n
};\n
/**\n
 * @param
{?=} start\n
 * @param {?=} end\n
 * @return {?}
^\\n
 _Tokenizer.prototype._getSpan = /**\n
 *
@param {?=} start\n
 * @param {?=} end\n
 * @return {?}
^\\n
function (start, end) {\n
 if (start ===
void 0) { start = this._getLocation(); }\n
 if (end === void 0) { end = this._getLocation(); }\n
return new
ParseSourceSpan(start, end);\n
};\n
/**\n
 * @param {?} type\n
 * @param {?=} start\n
 * @return {?}
^\\n
 _Tokenizer.prototype._beginToken = /**\n
 * @param {?} type\n
 * @param {?=} start\n
 * @return
{?}
^\\n
function (type, start) {\n
 if (start === void 0) { start = this._getLocation(); }\n
this._currentTokenStart = start;\n
this._currentTokenType = type;\n
};\n
/**\n
 * @param {?} parts\n
 *
@param {?=} end\n
 * @return {?}
^\\n
 _Tokenizer.prototype._endToken = /**\n
 * @param {?} parts\n
 *
@param {?=} end\n
 * @return {?}
^\\n
function (parts, end) {\n
 if (end === void 0) { end =
this._getLocation(); }\n
var /** @type {?} */ token = new Token$1(this._currentTokenType, parts, new
ParseSourceSpan(this._currentTokenStart, end));\n
this.tokens.push(token);\n
this._currentTokenStart = /**
@type {?} */ ((null));\n
this._currentTokenType = /** @type {?} */ ((null));\n
return token;\n
};\n
/**\n
 * @param {?} msg\n
 * @param {?} span\n
 * @return {?}
^\\n
 _Tokenizer.prototype._createError =
/**\n
 * @param {?} msg\n
 * @param {?} span\n
 * @return {?}
^\\n
function (msg, span) {\n
 if
(this._isInExpansionForm()) {\n
 msg += \" (Do you have an unescaped '\\\\\"' in your template? Use '\\\\\"'{{
'{' }}\\\\\\\"') to escape it.);\";\n
}\n
var /** @type {?} */ error = new TokenError(msg, this._currentTokenType,
span);\n
this._currentTokenStart = /** @type {?} */ ((null));\n
this._currentTokenType = /** @type {?} */
((null));\n
return new _ControlFlowError(error);\n
};\n
/**\n
 * @return {?}
^\\n
 _Tokenizer.prototype._advance = /**\n
 * @return {?}
^\\n
function () {\n
 if (this._index >=
this._length) {\n
 throw this._createError(_unexpectedCharacterErrorMsg($EOF), this._getSpan());\n
}\n
if (this._peek === $LF) {\n
 this._line++;\n
 this._column = 0;\n
}\n
else if (this._peek !==
$LF && this._peek !== $CR) {\n
 this._column++;\n
}\n
this._index++;\n
this._peek =
this._index >= this._length ? $EOF : this._input.charCodeAtAt(this._index);\n
this._nextPeek =\n
this._index + 1 >= this._length ? $EOF : this._input.charCodeAtAt(this._index + 1);\n
};\n
/**\n
 * @param {?}
charCodeAt\n
 * @return {?}
^\\n
 _Tokenizer.prototype._attemptCharCode = /**\n
 * @param {?}
charCodeAt\n
 * @return {?}
^\\n
function (charCodeAt) {\n
 if (this._peek === charCodeAt) {\n
this._advance();\n
return true;\n
}\n
return false;\n
};\n
/**\n
 * @param {?} charCodeAt\n
 *
@return {?}
^\\n
 _Tokenizer.prototype._attemptCharCodeCaseInsensitive = /**\n
 * @param {?}
charCodeAt\n
 * @return {?}
^\\n
function (charCodeAt) {\n
 if
(compareCharCodeCaseInsensitive(this._peek, charCodeAt)) {\n
 this._advance();\n
return true;\n
}\n
}

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 return false;\n };\n /**\n * @param {?} charCode\n * @return {?}\n */\n _Tokenizer.prototype._requireCharCode = /**\n * @param {?} charCode\n * @return {?}\n */\n function (charCode) {\n var /** @type {?} */ location = this._getLocation();\n if (!this._attemptCharCode(charCode)) {\n throw this._createError(_unexpectedCharacterErrorMsg(this._peek),\n this._getSpan(location, location));\n }\n };\n /**\n * @param {?} chars\n * @return {?}\n */\n _Tokenizer.prototype._attemptStr = /**\n * @param {?} chars\n * @return {?}\n */\n function (chars) {\n var /** @type {?} */ len = chars.length;\n if (this._index + len > this._length) {\n return false;\n }\n var /** @type {?} */ startPosition = this._savePosition();\n for (var /** @type {?} */ i = 0; i < len;\n i++) {\n if (!this._attemptCharCode(chars.charCodeAt(i))) {\n // If attempting to parse the string\n // fails, we want to reset the parser\n // to where it was before the attempt\n this._restorePosition(startPosition);\n return false;\n }\n }\n return true;\n };\n /**\n * @param {?} chars\n * @return {?}\n */\n _Tokenizer.prototype._attemptStrCaseInsensitive = /**\n * @param {?} chars\n * @return {?}\n */\n function (chars) {\n for (var /** @type {?} */ i = 0; i <\n chars.length; i++) {\n if (!this._attemptCharCodeCaseInsensitive(chars.charCodeAt(i))) {\n return\n false;\n }\n }\n return true;\n };\n /**\n * @param {?} chars\n * @return {?}\n */\n _Tokenizer.prototype._requireStr = /**\n * @param {?} chars\n * @return {?}\n */\n function (chars) {\n var /** @type {?} */ location = this._getLocation();\n if (!this._attemptStr(chars)) {\n throw\n this._createError(_unexpectedCharacterErrorMsg(this._peek), this._getSpan(location));\n }\n };\n /**\n * @param {?} predicate\n * @return {?}\n */\n _Tokenizer.prototype._attemptCharCodeUntilFn = /**\n * @param {?} predicate\n * @return {?}\n */\n function (predicate) {\n while (!predicate(this._peek)) {\n this._advance();\n }\n };\n /**\n * @param {?} predicate\n * @param {?} len\n * @return\n {?}\n */\n _Tokenizer.prototype._requireCharCodeUntilFn = /**\n * @param {?} predicate\n * @param\n {?}\n len\n * @return {?}\n */\n function (predicate, len) {\n var /** @type {?} */ start =\n this._getLocation();\n this._attemptCharCodeUntilFn(predicate);\n if (this._index - start.offset < len) {\n throw this._createError(_unexpectedCharacterErrorMsg(this._peek), this._getSpan(start, start));\n }\n };\n /**\n * @param {?} char\n * @return {?}\n */\n _Tokenizer.prototype._attemptUntilChar = /**\n * @param {?} char\n * @return {?}\n */\n function (char) {\n while (this._peek !== char) {\n this._advance();\n }\n };\n /**\n * @param {?} decodeEntities\n * @return {?}\n */\n _Tokenizer.prototype._readChar = /**\n * @param {?} decodeEntities\n * @return {?}\n */\n function (decodeEntities) {\n if (decodeEntities && this._peek === $AMPERSAND) {\n return\n this._decodeEntity();\n }\n else {\n var /** @type {?} */ index = this._index;\n this._advance();\n return this._input[index];\n }\n };\n /**\n * @return {?}\n */\n _Tokenizer.prototype._decodeEntity = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */\n start = this._getLocation();\n this._advance();\n if (this._attemptCharCode($HASH)) {\n var /**\n @type {?} */ isHex = this._attemptCharCode($x) || this._attemptCharCode($X);\n var /** @type {?} */\n numberStart = this._getLocation().offset;\n this._attemptCharCodeUntilFn(isDigitEntityEnd);\n if\n (this._peek !== $SEMICOLON) {\n throw this._createError(_unexpectedCharacterErrorMsg(this._peek),\n this._getSpan());\n }\n this._advance();\n var /** @type {?} */ strNum =\n this._input.substring(numberStart, this._index - 1);\n try {\n var /** @type {?} */ charCode =\n parseInt(strNum, isHex ? 16 : 10);\n return String.fromCharCode(charCode);\n }\n catch (**\n @type {?} */ e) {\n var /** @type {?} */ entity = this._input.substring(start.offset + 1, this._index - 1);\n throw this._createError(_unknownEntityErrorMsg(entity), this._getSpan(start));\n }\n }\n else {\n var /** @type {?} */ startPosition = this._savePosition();\n this._attemptCharCodeUntilFn(isNamedEntityEnd);\n if (this._peek !== $SEMICOLON) {\n this._restorePosition(startPosition);\n return '&';\n }\n this._advance();\n var /**\n @type {?} */ name_1 = this._input.substring(start.offset + 1, this._index - 1);\n var /** @type {?} */ char =\n NAMED_ENTITIES[name_1];\n if (!char) {\n throw\n this._createError(_unknownEntityErrorMsg(name_1), this._getSpan(start));\n }\n return char;\n }\n };\n
```

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}\n }; \n /** \n * @param {?} decodeEntities \n * @param {?} firstCharOfEnd \n * @param {?}
attemptEndRest \n * @return {?} \n * \n _Tokenizer.prototype._consumeRawText = /** \n * @param {?}
decodeEntities \n * @param {?} firstCharOfEnd \n * @param {?} attemptEndRest \n * @return {?} \n * \n
function (decodeEntities, firstCharOfEnd, attemptEndRest) { \n var /** @type {?} */ tagCloseStart; \n var
/** @type {?} */ textStart = this._getLocation(); \n this._beginToken(decodeEntities ?
TokenType$1.ESCAPABLE_RAW_TEXT : TokenType$1.RAW_TEXT, textStart); \n var /** @type {?} */
parts = []; \n while (true) { \n tagCloseStart = this._getLocation(); \n if
(this._attemptCharCode(firstCharOfEnd) && attemptEndRest()) { \n break; \n } \n if
(this._index > tagCloseStart.offset) { \n // add the characters consumed by the previous if statement to the
output \n parts.push(this._input.substring(tagCloseStart.offset, this._index)); \n } \n while
(this._peek !== firstCharOfEnd) { \n parts.push(this._readChar(decodeEntities)); \n } \n } \n
return this._endToken([this._processCarriageReturns(parts.join(""))], tagCloseStart); \n }; \n /** \n * @param
 {?} start \n * @return {?} \n * \n _Tokenizer.prototype._consumeComment = /** \n * @param {?} start \n
* @return {?} \n * \n function (start) { \n var _this = this; \n
this._beginToken(TokenType$1.COMMENT_START, start); \n this._requireCharCode($MINUS); \n
this._endToken([]); \n var /** @type {?} */ textToken = this._consumeRawText(false, $MINUS, function () {
return _this._attemptStr('>'); }); \n this._beginToken(TokenType$1.COMMENT_END,
textToken.sourceSpan.end); \n this._endToken([]); \n }; \n /** \n * @param {?} start \n * @return {?} \n
* \n _Tokenizer.prototype._consumeCdata = /** \n * @param {?} start \n * @return {?} \n * \n function
(start) { \n var _this = this; \n this._beginToken(TokenType$1.CDATA_START, start); \n
this._requireStr('CDATA['); \n this._endToken([]); \n var /** @type {?} */ textToken =
this._consumeRawText(false, $RBACKET, function () { return _this._attemptStr('>'); }); \n
this._beginToken(TokenType$1.CDATA_END, textToken.sourceSpan.end); \n this._endToken([]); \n }; \n
/** \n * @param {?} start \n * @return {?} \n * \n _Tokenizer.prototype._consumeDocType = /** \n *
@param {?} start \n * @return {?} \n * \n function (start) { \n
this._beginToken(TokenType$1.DOC_TYPE, start); \n this._attemptUntilChar($GT); \n this._advance(); \n
this._endToken([this._input.substring(start.offset + 2, this._index - 1)]; \n }; \n /** \n * @return {?} \n * \n
_Tokenizer.prototype._consumePrefixAndName = /** \n * @return {?} \n * \n function () { \n var /**
@type {?} */ nameOrPrefixStart = this._index; \n var /** @type {?} */ prefix = /** @type {?} */ ((null)); \n
while (this._peek !== $COLON && !isPrefixEnd(this._peek)) { \n this._advance(); \n } \n var /**
@type {?} */ nameStart; \n if (this._peek === $COLON) { \n this._advance(); \n prefix =
this._input.substring(nameOrPrefixStart, this._index - 1); \n nameStart = this._index; \n } \n else { \n
nameStart = nameOrPrefixStart; \n } \n this._requireCharCodeUntilFn(isNameEnd, this._index ===
nameStart ? 1 : 0); \n var /** @type {?} */ name = this._input.substring(nameStart, this._index); \n return
[prefix, name]; \n }; \n /** \n * @param {?} start \n * @return {?} \n * \n
_Tokenizer.prototype._consumeTagOpen = /** \n * @param {?} start \n * @return {?} \n * \n function
(start) { \n var /** @type {?} */ savedPos = this._savePosition(); \n var /** @type {?} */ tagName; \n
var /** @type {?} */ lowercaseTagName; \n try { \n if (!isAsciiLetter(this._peek)) { \n throw
this._createError(_unexpectedCharacterErrorMsg(this._peek), this._getSpan()); \n } \n var /** @type
 {?} */ nameStart = this._index; \n this._consumeTagOpenStart(start); \n tagName =
this._input.substring(nameStart, this._index); \n lowercaseTagName = tagName.toLowerCase(); \n
this._attemptCharCodeUntilFn(isNotWhitespace); \n while (this._peek !== $SLASH && this._peek !== $GT)
{ \n this._consumeAttributeName(); \n this._attemptCharCodeUntilFn(isNotWhitespace); \n
if (this._attemptCharCode($EQ)) { \n this._attemptCharCodeUntilFn(isNotWhitespace); \n
this._consumeAttributeValue(); \n } \n this._attemptCharCodeUntilFn(isNotWhitespace); \n
} \n this._consumeTagOpenEnd(); \n } \n catch (** @type {?} */ e) { \n if (e instanceof
_ControlFlowError) { \n // When the start tag is invalid, assume we want a "<" \n
this._restorePosition(savedPos); \n // Back to back text tokens are merged at the end \n

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this._beginToken(TokenTypes.TEXT, start);\n this._endToken(['<']);\n return;\n }\n throw e;\n }\n var /** @type {?} */ contentTokenType = this._getTagDefinition(tagName).contentType;\n if (contentTokenType === TagContentType.RAW_TEXT) {\n this._consumeRawTextWithTagClose(lowercaseTagName, false);\n } else if (contentTokenType ===\n TagContentType.ESCAPABLE_RAW_TEXT) {\n this._consumeRawTextWithTagClose(lowercaseTagName, true);\n };\n /**\n * @param {?}\n * @param {?} decodeEntities\n * @return {?}\n */\n _Tokenizer.prototype._consumeRawTextWithTagClose = /**\n * @param {?} lowercaseTagName\n * @param {?} decodeEntities\n * @return {?}\n */\n function (lowercaseTagName, decodeEntities) {\n var _this = this;\n var /** @type {?} */ textToken = this._consumeRawText(decodeEntities, $LT, function ()\n {\n if (!_this._attemptCharCode($SLASH))\n return false;\n _this._attemptCharCodeUntilFn(isNotWhitespace);\n if\n (!_this._attemptStrCaseInsensitive(lowercaseTagName))\n return false;\n _this._attemptCharCodeUntilFn(isNotWhitespace);\n return _this._attemptCharCode($GT);\n });\n this._beginToken(TokenTypes.TAG_CLOSE, textToken.sourceSpan.end);\n this._endToken(/** @type {?} */\n /*/(null), lowercaseTagName)];\n };\n /**\n * @param {?} start\n * @return {?}\n */\n _Tokenizer.prototype._consumeTagOpenStart = /**\n * @param {?} start\n * @return {?}\n */\n function (start) {\n this._beginToken(TokenTypes.TAG_OPEN_START, start);\n var /** @type {?} */ parts =\n this._consumePrefixAndName();\n this._endToken(parts);\n };\n /**\n * @return {?}\n */\n _Tokenizer.prototype._consumeAttributeName = /**\n * @return {?}\n */\n function () {\n this._beginToken(TokenTypes.ATTR_NAME);\n var /** @type {?} */ prefixAndName =\n this._consumePrefixAndName();\n this._endToken(prefixAndName);\n };\n /**\n * @return {?}\n */\n _Tokenizer.prototype._consumeAttributeValue = /**\n * @return {?}\n */\n function () {\n this._beginToken(TokenTypes.ATTR_VALUE);\n var /** @type {?} */ value;\n if (this._peek === $SQ\n || this._peek === $DQ) {\n var /** @type {?} */ quoteChar = this._peek;\n this._advance();\n var /** @type {?} */ parts = [];\n while (this._peek !== quoteChar) {\n parts.push(this._readChar(true));\n }\n value = parts.join("");\n this._advance();\n } else {\n var /** @type {?} */ valueStart = this._index;\n this._requireCharCodeUntilFn(isNameEnd,\n 1);\n value = this._input.substring(valueStart, this._index);\n }\n this._endToken([this._processCarriageReturns(value)];\n };\n /**\n * @return {?}\n */\n _Tokenizer.prototype._consumeTagOpenEnd = /**\n * @return {?}\n */\n function () {\n var /** @type\n {?} */ tokenType = this._attemptCharCode($SLASH) ? TokenTypes.TAG_OPEN_END_VOID :\n TokenTypes.TAG_OPEN_END;\n this._beginToken(tokenType);\n this._requireCharCode($GT);\n this._endToken([]);\n };\n /**\n * @param {?} start\n * @return {?}\n */\n _Tokenizer.prototype._consumeTagClose = /**\n * @param {?} start\n * @return {?}\n */\n function (start) {\n this._beginToken(TokenTypes.TAG_CLOSE, start);\n this._attemptCharCodeUntilFn(isNotWhitespace);\n var /** @type {?} */ prefixAndName =\n this._consumePrefixAndName();\n this._attemptCharCodeUntilFn(isNotWhitespace);\n this._requireCharCode($GT);\n this._endToken(prefixAndName);\n };\n /**\n * @return {?}\n */\n _Tokenizer.prototype._consumeExpansionFormStart = /**\n * @return {?}\n */\n function () {\n this._beginToken(TokenTypes.EXPANSION_FORM_START, this._getLocation());\n this._requireCharCode($LBRACE);\n this._endToken([]);\n this._expansionCaseStack.push(TokenTypes.EXPANSION_FORM_START);\n this._beginToken(TokenTypes.RAW_TEXT, this._getLocation());\n var /** @type {?} */ condition =\n this._readUntil($COMMA);\n this._endToken([condition], this._getLocation());\n this._requireCharCode($COMMA);\n this._attemptCharCodeUntilFn(isNotWhitespace);\n this._beginToken(TokenTypes.RAW_TEXT, this._getLocation());\n var /** @type {?} */ type =\n this._readUntil($COMMA);\n this._endToken([type], this._getLocation());\n };\n
```

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this._requireCharCode($COMMA);\n this._attemptCharCodeUntilFn(isNotWhitespace);\n };\n /**\n *
@return {?}\n *\n _Tokenizer.prototype._consumeExpansionCaseStart = /**\n * @return {?}\n *\nfunction () {\n this._beginToken(TokenType$1.EXPANSION_CASE_VALUE, this._getLocation());\n var
/** @type {?} */ value = this._readUntil($LBRACE).trim();\n this._endToken([value], this._getLocation());\n
 this._attemptCharCodeUntilFn(isNotWhitespace);\n
this._beginToken(TokenType$1.EXPANSION_CASE_EXP_START, this._getLocation());\n
this._requireCharCode($LBRACE);\n this._endToken([], this._getLocation());\n
this._attemptCharCodeUntilFn(isNotWhitespace);\n
this._expansionCaseStack.push(TokenType$1.EXPANSION_CASE_EXP_START);\n };\n /**\n * @return
{?}\n *\n _Tokenizer.prototype._consumeExpansionCaseEnd = /**\n * @return {?}\n *\nfunction ()
{\n this._beginToken(TokenType$1.EXPANSION_CASE_EXP_END, this._getLocation());\n
this._requireCharCode($RBRACE);\n this._endToken([], this._getLocation());\n
this._attemptCharCodeUntilFn(isNotWhitespace);\n this._expansionCaseStack.pop();\n };\n /**\n *
@return {?}\n *\n _Tokenizer.prototype._consumeExpansionFormEnd = /**\n * @return {?}\n *\nfunction () {\n this._beginToken(TokenType$1.EXPANSION_FORM_END, this._getLocation());\n
this._requireCharCode($RBRACE);\n this._endToken([]);\n this._expansionCaseStack.pop();\n };\n
/**\n * @return {?}\n *\n _Tokenizer.prototype._consumeText = /**\n * @return {?}\n *\nfunction
() {\n var /** @type {?} */ start = this._getLocation();\n this._beginToken(TokenType$1.TEXT, start);\n
var /** @type {?} */ parts = [];\n do {\n if (this._interpolationConfig &&
this._attemptStr(this._interpolationConfig.start)) {\n parts.push(this._interpolationConfig.start);\n
this._inInterpolation = true;\n }\n else if (this._interpolationConfig && this._inInterpolation &&\n
this._attemptStr(this._interpolationConfig.end)) {\n parts.push(this._interpolationConfig.end);\n
this._inInterpolation = false;\n }\n else {\n parts.push(this._readChar(true);\n }\n
} while (!this._isTextEnd());\n this._endToken([this._processCarriageReturns(parts.join(""))]);\n };\n /**\n *
@return {?}\n *\n _Tokenizer.prototype._isTextEnd = /**\n * @return {?}\n *\nfunction () {\n
if (this._peek === $LT || this._peek === $EOF) {\n return true;\n }\n if (this._tokenizeIcu &&
!this._inInterpolation) {\n if (isExpansionFormStart(this._input, this._index, this._interpolationConfig)) {\n
// start of an expansion form\n return true;\n }\n if (this._peek === $RBRACE &&
this._isInExpansionCase()) {\n // end of and expansion case\n return true;\n }\n }\n
return false;\n };\n /**\n * @return {?}\n *\n _Tokenizer.prototype._savePosition = /**\n * @return
{?}\n *\nfunction () {\n return [this._peek, this._index, this._column, this._line, this.tokens.length];\n
};\n /**\n * @param {?} char\n * @return {?}\n *\n _Tokenizer.prototype._readUntil = /**\n *
@param {?} char\n * @return {?}\n *\nfunction (char) {\n var /** @type {?} */ start = this._index;\n
this._attemptUntilChar(char);\n return this._input.substring(start, this._index);\n };\n /**\n * @param
{?} position\n * @return {?}\n *\n _Tokenizer.prototype._restorePosition = /**\n * @param {?}
position\n * @return {?}\n *\nfunction (position) {\n this._peek = position[0];\n this._index =
position[1];\n this._column = position[2];\n this._line = position[3];\n var /** @type {?} */ nbTokens =
position[4];\n if (nbTokens < this.tokens.length) {\n // remove any extra tokens\n this.tokens =
this.tokens.slice(0, nbTokens);\n }\n };\n /**\n * @return {?}\n *\n _Tokenizer.prototype._isInExpansionCase = /**\n * @return {?}\n *\nfunction () {\n return
this._expansionCaseStack.length > 0 &&\n this._expansionCaseStack[this._expansionCaseStack.length - 1]
===\n TokenType$1.EXPANSION_CASE_EXP_START;\n };\n /**\n * @return {?}\n *\n _Tokenizer.prototype._isInExpansionForm = /**\n * @return {?}\n *\nfunction () {\n return
this._expansionCaseStack.length > 0 &&\n this._expansionCaseStack[this._expansionCaseStack.length - 1]
===\n TokenType$1.EXPANSION_FORM_START;\n };\n return _Tokenizer;\n}());\n\n/**\n *
@param {?} code\n * @return {?}\n *\nfunction isNotWhitespace(code) {\n return !isWhitespace(code) || code
=== $EOF;\n}\n\n/**\n * @param {?} code\n * @return {?}\n *\nfunction isNameEnd(code) {\n return
isWhitespace(code) || code === $GT || code === $SLASH ||\n code === $SQ || code === $DQ || code ===

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$EQ;\n}\n/**\n * @param {?} code\n * @return {?}\n */\nfunction isPrefixEnd(code) {\n return (code < $a || $z <
code) && (code < $A || $Z < code) &&\n (code < $0 || code > $9);\n}\n/**\n * @param {?} code\n * @return
{?}\n */\nfunction isDigitEntityEnd(code) {\n return code === $SEMICOLON || code === $EOF ||
!isAsciiHexDigit(code);\n}\n/**\n * @param {?} code\n * @return {?}\n */\nfunction isNamedEntityEnd(code) {\n
return code === $SEMICOLON || code === $EOF || !isAsciiLetter(code);\n}\n/**\n * @param {?} input\n * @param
{?} offset\n * @param {?} interpolationConfig\n * @return {?}\n */\nfunction isExpansionFormStart(input, offset,
interpolationConfig) {\n var /** @type {?} */ isInterpolationStart = interpolationConfig ?
input.indexOf(interpolationConfig.start, offset) === offset : false;\n return input.charCodeAtAt(offset) === $LBRACE
&& !isInterpolationStart;\n}\n/**\n * @param {?} peek\n * @return {?}\n */\nfunction isExpansionCaseStart(peek)
{\n return peek === $EQ || isAsciiLetter(peek) || isDigit(peek);\n}\n/**\n * @param {?} code1\n * @param {?}
code2\n * @return {?}\n */\nfunction compareCharCodeCaseInsensitive(code1, code2) {\n return
toUpperCaseCharCode(code1) === toUpperCaseCharCode(code2);\n}\n/**\n * @param {?} code\n * @return {?}\n */\n
function toUpperCaseCharCode(code) {\n return code >= $a && code <= $z ? code - $a + $A :
code;\n}\n/**\n * @param {?} srcTokens\n * @return {?}\n */\nfunction mergeTextTokens(srcTokens) {\n var
/** @type {?} */ dstTokens = [];\n var /** @type {?} */ lastDstToken = undefined;\n for (var /** @type {?} */ i
= 0; i < srcTokens.length; i++) {\n var /** @type {?} */ token = srcTokens[i];\n if (lastDstToken &&
lastDstToken.type === TokenType$1.TEXT && token.type === TokenType$1.TEXT) {\n
lastDstToken.parts[0] += token.parts[0];\n lastDstToken.sourceSpan.end = token.sourceSpan.end;\n }\n else {\n
lastDstToken = token;\n dstTokens.push(lastDstToken);\n }\n }\n return
dstTokens;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n *
@license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\nvar TreeError = /** @class
*/ (function (_super) {\n __extends(TreeError, _super);\n function TreeError(elementName, span, msg) {\n
var _this = _super.call(this, span, msg) || this;\n _this.elementName = elementName;\n return _this;\n }\n
/**\n * @param {?} elementName\n * @param {?} span\n * @param {?} msg\n * @return {?}\n */\n TreeError.create = /**\n * @param {?} elementName\n * @param {?} span\n * @param {?} msg\n *
@return {?}\n */\n function (elementName, span, msg) {\n return new TreeError(elementName, span,
msg);\n };\n return TreeError;\n})(ParseError);\n\nvar ParseTreeResult = /** @class */ (function () {\n function
ParseTreeResult(rootNodes, errors) {\n this.rootNodes = rootNodes;\n this.errors = errors;\n }\n return
ParseTreeResult;\n})();\n\nvar Parser$1 = /** @class */ (function () {\n function Parser(getTagDefinition) {\n
this.getTagDefinition = getTagDefinition;\n }\n /**\n * @param {?} source\n * @param {?} url\n *
@param {?=} parseExpansionForms\n * @param {?=} interpolationConfig\n * @return {?}\n */\n Parser.prototype.parse = /**\n * @param {?} source\n * @param {?} url\n * @param {?=}
parseExpansionForms\n * @param {?=} interpolationConfig\n * @return {?}\n */\n function (source, url,
parseExpansionForms, interpolationConfig) {\n if (parseExpansionForms === void 0) { parseExpansionForms
= false; }\n if (interpolationConfig === void 0) { interpolationConfig =
DEFAULT_INTERPOLATION_CONFIG; }\n var /** @type {?} */ tokensAndErrors = tokenize(source, url,
this.getTagDefinition, parseExpansionForms, interpolationConfig);\n var /** @type {?} */ treeAndErrors =
new _TreeBuilder(tokensAndErrors.tokens, this.getTagDefinition).build();\n return new
ParseTreeResult(treeAndErrors.rootNodes, (//** @type {?} */
(tokensAndErrors.errors)).concat(treeAndErrors.errors));\n };\n return Parser;\n})();\n\nvar _TreeBuilder = /**
@class */ (function () {\n function _TreeBuilder(tokens, getTagDefinition) {\n this.tokens = tokens;\n
this.getTagDefinition = getTagDefinition;\n this._index = -1;\n this._rootNodes = [];\n this._errors =
[];\n this._elementStack = [];\n this._advance();\n }\n /**\n * @return {?}\n */\n _TreeBuilder.prototype.build = /**\n * @return {?}\n */\n function () {\n while (this._peek.type !==
TokenType$1.EOF) {\n if (this._peek.type === TokenType$1.TAG_OPEN_START) {\n
this._consumeStartTag(this._advance());\n }\n else if (this._peek.type ===
TokenType$1.TAG_CLOSE) {\n this._consumeEndTag(this._advance());\n }\n else if

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(this._peek.type === TokenType$1.CDATA_START) {\n this._closeVoidElement();\n
this._consumeCdata(this._advance());\n }\n else if (this._peek.type ===
TokenType$1.COMMENT_START) {\n this._closeVoidElement();\n
this._consumeComment(this._advance());\n }\n else if (this._peek.type === TokenType$1.TEXT ||
this._peek.type === TokenType$1.RAW_TEXT ||\n this._peek.type ===
TokenType$1.ESCAPABLE_RAW_TEXT) {\n this._closeVoidElement();\n
this._consumeText(this._advance());\n }\n else if (this._peek.type ===
TokenType$1.EXPANSION_FORM_START) {\n this._consumeExpansion(this._advance());\n }\n
 else {\n // Skip all other tokens...\n this._advance();\n }\n }\n return new
ParseTreeResult(this._rootNodes, this._errors);\n };\n /**\n * @return {?}\n */\n _TreeBuilder.prototype._advance = /**\n * @return {?}\n */\n * ^\n function () {\n var /** @type {?} */ prev
= this._peek;\n if (this._index < this.tokens.length - 1) {\n // Note: there is always an EOF token at the
end\n this._index++;\n }\n this._peek = this.tokens[this._index];\n return prev;\n };\n /**\n * @param {?} type\n * @return {?}\n */\n * ^\n _TreeBuilder.prototype._advanceIf = /**\n * @param {?}
type\n * @return {?}\n */\n * ^\n function (type) {\n if (this._peek.type === type) {\n return
this._advance();\n }\n return null;\n };\n /**\n * @param {?} startToken\n * @return {?}\n */\n * ^\n _TreeBuilder.prototype._consumeCdata = /**\n * @param {?} startToken\n * @return {?}\n */\n * ^\n function
(startToken) {\n this._consumeText(this._advance());\n this._advanceIf(TokenType$1.CDATA_END);\n
 };\n /**\n * @param {?} token\n * @return {?}\n */\n * ^\n _TreeBuilder.prototype._consumeComment =
/**\n * @param {?} token\n * @return {?}\n */\n * ^\n function (token) {\n var /** @type {?} */ text =
this._advanceIf(TokenType$1.RAW_TEXT);\n this._advanceIf(TokenType$1.COMMENT_END);\n var
/** @type {?} */ value = text != null ? text.parts[0].trim() : null;\n this._addToParent(new Comment(value,
token.sourceSpan));\n };\n /**\n * @param {?} token\n * @return {?}\n */\n * ^\n _TreeBuilder.prototype._consumeExpansion = /**\n * @param {?} token\n * @return {?}\n */\n * ^\n function
(token) {\n var /** @type {?} */ switchValue = this._advance();\n var /** @type {?} */ type =
this._advance();\n var /** @type {?} */ cases = [];\n // read =\n while (this._peek.type ===
TokenType$1.EXPANSION_CASE_VALUE) {\n var /** @type {?} */ expCase =
this._parseExpansionCase();\n if (!expCase)\n return; // error\n cases.push(expCase);\n
 }\n // read the final }\n if (this._peek.type !== TokenType$1.EXPANSION_FORM_END) {\n
this._errors.push(TreeError.create(null, this._peek.sourceSpan, "Invalid ICU message. Missing '}'"));
 }\n return;\n }\n var /** @type {?} */ sourceSpan = new ParseSourceSpan(token.sourceSpan.start,
this._peek.sourceSpan.end);\n this._addToParent(new Expansion(switchValue.parts[0], type.parts[0], cases,
sourceSpan, switchValue.sourceSpan));\n this._advance();\n };\n /**\n * @return {?}\n */\n * ^\n _TreeBuilder.prototype._parseExpansionCase = /**\n * @return {?}\n */\n * ^\n function () {\n var /** @type
{?} */ value = this._advance();\n // read {\n if (this._peek.type !==
TokenType$1.EXPANSION_CASE_EXP_START) {\n this._errors.push(TreeError.create(null,
this._peek.sourceSpan, "Invalid ICU message. Missing '{'"));
 }\n return null;\n }\n // read until }\n var /** @type {?} */ start = this._advance();\n var /** @type {?} */ exp =
this._collectExpansionExpTokens(start);\n if (!exp)\n return null;\n var /** @type {?} */ end =
this._advance();\n exp.push(new Token$1(TokenType$1.EOF, [], end.sourceSpan));\n // parse everything
in between { and }\n var /** @type {?} */ parsedExp = new _TreeBuilder(exp, this.getTagDefinition()).build();\n if (parsedExp.errors.length > 0) {\n this._errors = this._errors.concat(** @type {?} */
(parsedExp.errors));\n return null;\n }\n var /** @type {?} */ sourceSpan = new
ParseSourceSpan(value.sourceSpan.start, end.sourceSpan.end);\n var /** @type {?} */ expSourceSpan = new
ParseSourceSpan(start.sourceSpan.start, end.sourceSpan.end);\n return new ExpansionCase(value.parts[0],
parsedExp.rootNodes, sourceSpan, value.sourceSpan, expSourceSpan);\n };\n /**\n * @param {?} start\n * @return {?}\n */\n * ^\n _TreeBuilder.prototype._collectExpansionExpTokens = /**\n * @param {?} start\n *
@return {?}\n */\n * ^\n function (start) {\n var /** @type {?} */ exp = [];\n var /** @type {?} */

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this._elementStack.splice(this._elementStack.indexOf(container), 0, node);\n }\n };\n /**\n * @param {?}
prefix\n * @param {?} localName\n * @param {?} parentElement\n * @return {?}\n */\n _TreeBuilder.prototype._getElementFullName = /**\n * @param {?} prefix\n * @param {?} localName\n *
@param {?} parentElement\n * @return {?}\n */\n function (prefix, localName, parentElement) {\n if
(prefix == null) {\n prefix = /** @type {?} */
((this.getTagDefinition(localName).implicitNamespacePrefix));\n if (prefix == null && parentElement !=
null) {\n prefix = getNsPrefix(parentElement.name);\n }\n return
mergeNsAndName(prefix, localName);\n };\n return _TreeBuilder;\n });\n /**\n * @param {?} stack\n *
@param {?} element\n * @return {?}\n */\n function lastOnStack(stack, element) {\n return stack.length > 0 &&
stack[stack.length - 1] === element;\n }\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes}
checked by tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source
code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n /**\n * @param {?} message\n * @return {?}\n */\n function digest(message) {\n return message.id ||
sha1(serializeNodes(message.nodes).join("") + ("[" + message.meaning + "]"));
 }\n /**\n * @param {?}
message\n * @return {?}\n */\n function decimalDigest(message) {\n if (message.id) {\n return message.id;\n
 }\n var /** @type {?} */ visitor = new _SerializerIgnoreIcuExpVisitor();\n var /** @type {?} */ parts =
message.nodes.map(function (a) { return a.visit(visitor, null); });\n return computeMsgId(parts.join(""),
message.meaning);\n }\n /**\n * Serialize the i18n ast to something xml-like in order to generate an UID.\n * The
visitor is also used in the i18n parser tests\n * @internal\n */\n nvar _SerializerVisitor = /** @class */ (function
() {\n function _SerializerVisitor() {\n }\n /**\n * @param {?} text\n *
@param {?} context\n *
@return {?}\n */\n _SerializerVisitor.prototype.visitText = /**\n * @param {?} text\n *
@param {?}
context\n * @return {?}\n */\n function (text, context) { return text.value; };\n /**\n * @param {?}
container\n * @param {?} context\n * @return {?}\n */\n _SerializerVisitor.prototype.visitContainer =
/**\n * @param {?} container\n * @param {?} context\n * @return {?}\n */\n function (container,
context) {\n var _this = this;\n return "[" + container.children.map(function (child) { return
child.visit(_this); }).join(', ') + "]";\n };\n /**\n * @param {?} icu\n * @param {?} context\n *
@return {?}\n */\n _SerializerVisitor.prototype.visitIcu = /**\n * @param {?} icu\n * @param {?} context\n *
@return {?}\n */\n function (icu, context) {\n var _this = this;\n var /** @type {?} */ strCases =
Object.keys(icu.cases).map(function (k) { return k + " {" + icu.cases[k].visit(_this) + "}"; });\n return "{" +
icu.expression + ", " + icu.type + ", " + strCases.join(', ') + "}";\n };\n /**\n * @param {?} ph\n *
@param {?} context\n * @return {?}\n */\n _SerializerVisitor.prototype.visitTagPlaceholder = /**\n *
@param {?} ph\n * @param {?} context\n * @return {?}\n */\n function (ph, context) {\n var _this =
this;\n return ph.isVoid ?\n "<ph tag name=\\\"\" + ph.startName + \"\\\"/>":\n "<ph tag
name=\\\"\" + ph.startName + \"\\\">" + ph.children.map(function (child) { return child.visit(_this); }).join(', ') +
 "</ph name=\\\"\" + ph.closeName + \"\\\">";\n };\n /**\n * @param {?} ph\n *
@param {?} context\n * @return {?}\n */\n _SerializerVisitor.prototype.visitPlaceholder = /**\n * @param {?} ph\n *
@param {?} context\n * @return {?}\n */\n function (ph, context) {\n return ph.value ? "<ph name=\\\"\" +
ph.name + \"\\\">" + ph.value + "</ph>":\n "<ph name=\\\"\" + ph.name + \"\\\"/>";\n };\n /**\n * @param {?} ph\n *
@param {?} context\n * @return {?}\n */\n _SerializerVisitor.prototype.visitIcuPlaceholder =
/**\n * @param {?} ph\n * @param {?} context\n * @return {?}\n */\n function (ph, context) {\n return "<ph icu name=\\\"\" + ph.name + \"\\\">" + ph.value.visit(this) + "</ph>";\n };\n return
_SerializerVisitor;\n }();\n nvar serializerVisitor = new _SerializerVisitor();\n /**\n * @param {?} nodes\n * @return
{?}\n */\n function serializeNodes(nodes) {\n return nodes.map(function (a) { return a.visit(serializerVisitor, null);
});\n }\n /**\n * Serialize the i18n ast to something xml-like in order to generate an UID.\n * Ignore the ICU
expressions so that message IDs stays identical if only the expression changes.\n * @internal\n */\n nvar
_SerializerIgnoreIcuExpVisitor = /** @class */ (function (_super) {\n __extends(_SerializerIgnoreIcuExpVisitor,
_super);\n function _SerializerIgnoreIcuExpVisitor() {\n return _super !== null && _super.apply(this,
arguments) || this;\n }\n /**\n * @param {?} icu\n * @param {?} context\n * @return {?}\n */\n }

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```

_serializerIgnoreIcuExpVisitor.prototype.visitIcu = /**\n * @param {?} icu\n * @param {?} context\n * @return {?}\n */\n function (icu, context) {\n var _this = this;\n var /** @type {?} */ strCases = Object.keys(icu.cases).map(function (k) { return k + \" {\n\" + icu.cases[k].visit(_this) + \"}\"; });\n // Do not take the expression into account\n return \"{\n\" + icu.type + \"\", \"\" + strCases.join(', ') + \"}\";\n }; \n return _serializerIgnoreIcuExpVisitor;\n})(_serializerVisitor);\n/**\n * Compute the SHA1 of the given string\n * see http://csrc.nist.gov/publications/fips/fips180-4/fips-180-4.pdf\n * \n * WARNING: this function has not been designed not tested with security in mind.\n * DO NOT USE IT IN A SECURITY SENSITIVE CONTEXT.\n * @param {?} str\n * @return {?}\n */\n function sha1(str) {\n var /** @type {?} */ utf8 = utf8Encode(str);\n var /** @type {?} */ words32 = stringToWords32(utf8, Endian.Big);\n var /** @type {?} */ len = utf8.length * 8;\n var /** @type {?} */ w = new Array(80);\n var _a = [0x67452301, 0xefc8dab89, 0x98badcfe, 0x10325476, 0xc3d2e1f0], a = _a[0], b = _a[1], c = _a[2], d = _a[3], e = _a[4];\n words32[len >> 5] |= 0x80 << (24 - len % 32);\n words32[(len + 64 >> 9) << 4] + 15 = len;\n for (var /** @type {?} */ i = 0; i < words32.length; i += 16) {\n var _b = [a, b, c, d, e], h0 = _b[0], h1 = _b[1], h2 = _b[2], h3 = _b[3], h4 = _b[4];\n for (var /** @type {?} */ j = 0; j < 80; j++) {\n if (j < 16) {\n w[j] = words32[i + j];\n } else {\n w[j] = rol32(w[j - 3] ^ w[j - 8] ^ w[j - 14] ^ w[j - 16], 1);\n }\n var _c = fk(j, b, c, d), f = _c[0], k = _c[1];\n var /** @type {?} */ temp = [rol32(a, 5), f, e, k, w[j]].reduce(add32);\n _d = [d, c, rol32(b, 30), a, temp], e = _d[0], d = _d[1], c = _d[2], b = _d[3], a = _d[4];\n _e = [add32(a, h0), add32(b, h1), add32(c, h2), add32(d, h3), add32(e, h4)], a = _e[0], b = _e[1], c = _e[2], d = _e[3], e = _e[4];\n }\n return byteStringToHexString(words32ToByteString([a, b, c, d, e]));\n var _d, _e;\n}\n/**\n * @param {?} index\n * @param {?} b\n * @param {?} c\n * @param {?} d\n * @return {?}\n */\n function fk(index, b, c, d) {\n if (index < 20) {\n return [(b & c) | (~b & d), 0x5a827999];\n }\n if (index < 40) {\n return [b ^ c ^ d, 0x6ed9eba1];\n }\n if (index < 60) {\n return [(b & c) | (b & d) | (c & d), 0x8f1bbcdc];\n }\n return [b ^ c ^ d, 0xca62c1d6];\n}\n/**\n * Compute the fingerprint of the given string\n * \n * The output is 64 bit number encoded as a decimal string\n * \n * based on:\n * https://github.com/google/closure-compiler/blob/master/src/com/google/javascript/jscomp/GoogleJsMessageIdGenerator.java\n * @param {?} str\n * @return {?}\n */\n function fingerprint(str) {\n var /** @type {?} */ utf8 = utf8Encode(str);\n var _a = [hash32(utf8, 0), hash32(utf8, 102072)], hi = _a[0], lo = _a[1];\n if (hi == 0 && (lo == 0 || lo == 1)) {\n hi = hi ^ 0x130f9bef;\n lo = lo ^ 0x6b5f56d8;\n }\n return [hi, lo];\n}\n/**\n * @param {?} msg\n * @param {?} meaning\n * @return {?}\n */\n function computeMsgId(msg, meaning) {\n var _a = fingerprint(msg), hi = _a[0], lo = _a[1];\n if (meaning) {\n var _b = fingerprint(meaning), him = _b[0], lom = _b[1];\n _c = add64(rol64([hi, lo], 1), [him, lom]), hi = _c[0], lo = _c[1];\n }\n return byteStringToDecString(words32ToByteString([hi & 0x7fffffff, lo]));\n var _c;\n}\n/**\n * @param {?} str\n * @param {?} c\n * @return {?}\n */\n function hash32(str, c) {\n var _a = [0x9e3779b9, 0x9e3779b9], a = _a[0], b = _a[1];\n var /** @type {?} */ i;\n var /** @type {?} */ len = str.length;\n for (i = 0; i + 12 <= len; i += 12) {\n a = add32(a, wordAt(str, i, Endian.Little));\n b = add32(b, wordAt(str, i + 4, Endian.Little));\n c = add32(c, wordAt(str, i + 8, Endian.Little));\n _b = mix([a, b, c]), a = _b[0], b = _b[1], c = _b[2];\n }\n a = add32(a, wordAt(str, i, Endian.Little));\n b = add32(b, wordAt(str, i + 4, Endian.Little));\n // the first byte of c is reserved for the length\n c = add32(c, len);\n c = add32(c, wordAt(str, i + 8, Endian.Little) << 8);\n return mix([a, b, c])[2];\n var _b;\n}\n/**\n * @param {?} _0\n * @return {?}\n */\n function mix(_a) {\n var a = _a[0], b = _a[1], c = _a[2];\n a = sub32(a, b);\n a = sub32(a, c);\n a ^= c >>> 13;\n b = sub32(b, c);\n b = sub32(b, a);\n b ^= a << 8;\n c = sub32(c, a);\n c = sub32(c, b);\n c ^= b >>> 13;\n a = sub32(a, b);\n a = sub32(a, c);\n a ^= c >>> 3;\n b = sub32(b, c);\n b = sub32(b, a);\n b ^= a << 16;\n c = sub32(c, a);\n c = sub32(c, b);\n c ^= b >>> 5;\n a = sub32(a, b);\n a = sub32(a, c);\n a ^= c >>> 3;\n b = sub32(b, c);\n b = sub32(b, a);\n b ^= a << 10;\n c = sub32(c, a);\n c = sub32(c, b);\n c ^= b >>> 15;\n return [a, b, c];\n}\n/**\n * @enum {number}\n */\n var Endian = {\n Little: 0,\n Big: 1,\n};\n Endian[Endian.Little] = \"Little\";\n Endian[Endian.Big] = \"Big\";\n/**\n * @param {?} a\n * @param {?} b\n * @return {?}\n */\n function add32(a, b) {\n return add32to64(a, b)[1];\n}\n/**\n * @param {?} a\n * @param {?} b\n * @return {?}\n */\n function add32to64(a, b) {\n var /** @type {?} */ low = (a & 0xffff) + (b & 0xffff);\n var /** @type {?} */

```

```

high = (a >>> 16) + (b >>> 16) + (low >>> 16);
return [high >>> 16, (high << 16) | (low & 0xffff)];
}

@param {?} __0
@param {?} __1
@return {?}
*/
function add64(_a, _b) {
 var ah = _a[0], al = _a[1];
 var bh = _b[0], bl = _b[1];
 var _c = add32to64(al, bl), carry = _c[0], l = _c[1];
 var /** @type {?} */ h = add32(add32(ah, bh), carry);
 return [h, l];
}

function sub32(a, b) {
 var /** @type {?} */ low = (a & 0xffff) - (b & 0xffff);
 var /** @type {?} */ high = (a >> 16) - (b >> 16) + (low >> 16);
 return (high << 16) | (low & 0xffff);
}

function rol32(a, count) {
 return (a << count) | (a >>> (32 - count));
}

function rol64(_a, count) {
 var hi = _a[0], lo = _a[1];
 var /** @type {?} */ h = (hi << count) | (lo >>> (32 - count));
 var /** @type {?} */ l = (lo << count) | (hi >>> (32 - count));
 return [h, l];
}

@param {?} str
@param {?} endian
@return {?}
*/
function stringToWords32(str, endian) {
 var /** @type {?} */ words32 = Array((str.length + 3) >>> 2);
 for (var /** @type {?} */ i = 0; i < words32.length; i++) {
 words32[i] = wordAt(str, i * 4, endian);
 }
 return words32;
}

@param {?} str
@param {?} index
@return {?}
*/
function byteAt(str, index) {
 return index >= str.length ? 0 : str.charCodeAt(index) & 0xff;
}

@param {?} str
@param {?} index
@param {?} endian
@return {?}
*/
function wordAt(str, index, endian) {
 var /** @type {?} */ word = 0;
 if (endian === Endian.Big) {
 for (var /** @type {?} */ i = 0; i < 4; i++) {
 word += byteAt(str, index + i) << (24 - 8 * i);
 }
 } else {
 for (var /** @type {?} */ i = 0; i < 4; i++) {
 word += byteAt(str, index + i) << 8 * i;
 }
 }
 return word;
}

@param {?} words32
@return {?}
*/
function words32ToByteString(words32) {
 return words32.reduce(function (str, word) {
 return str + word32ToByteString(word);
 }, "");
}

@param {?} word
@return {?}
*/
function word32ToByteString(word) {
 var /** @type {?} */ str = "";
 for (var /** @type {?} */ i = 0; i < 4; i++) {
 str += String.fromCharCode((word >>> 8 * (3 - i)) & 0xff);
 }
 return str;
}

@param {?} str
@return {?}
*/
function byteStringToHexString(str) {
 var /** @type {?} */ hex = "";
 for (var /** @type {?} */ i = 0; i < str.length; i++) {
 var /** @type {?} */ b = byteAt(str, i);
 hex += (b >>> 4).toString(16) + (b & 0x0f).toString(16);
 }
 return hex.toLowerCase();
}

@param {?} str
@return {?}
*/
function byteStringToDecString(str) {
 var /** @type {?} */ decimal = "";
 var /** @type {?} */ toThePower = '1';
 for (var /** @type {?} */ i = str.length - 1; i >= 0; i--) {
 decimal = addBigInt(decimal, numberTimesBigInt(byteAt(str, i), toThePower));
 toThePower = numberTimesBigInt(256, toThePower);
 }
 return decimal.split("").reverse().join("");
}

@param {?} x
@param {?} y
@return {?}
*/
function addBigInt(x, y) {
 var /** @type {?} */ sum = "";
 var /** @type {?} */ len = Math.max(x.length, y.length);
 for (var /** @type {?} */ i = 0, /** @type {?} */ carry = 0; i < len || carry; i++) {
 var /** @type {?} */ tmpSum = carry + +(x[i] || 0) + +(y[i] || 0);
 if (tmpSum >= 10) {
 carry = 1;
 sum += tmpSum - 10;
 } else {
 carry = 0;
 sum += tmpSum;
 }
 }
 return sum;
}

@param {?} num
@param {?} b
@return {?}
*/
function numberTimesBigInt(num, b) {
 var /** @type {?} */ product = "";
 var /** @type {?} */ bToThePower = b;
 for (; num !== 0; num = num >>> 1) {
 if (num & 1) {
 product = addBigInt(product, bToThePower);
 bToThePower = addBigInt(bToThePower, bToThePower);
 }
 }
 return product;
}
}

@fileoverview added by tsickle
@suppress {checkTypes} checked by tsc
*/
*/
@license
*/
Copyright Google Inc. All Rights Reserved.
*/
Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
*/
*/
@class */ (function () {
 /**
 * @param nodes message AST
 * @param placeholders maps placeholder names to static content
 * @param placeholderToMessage maps placeholder names to messages (used for nested ICU messages)
 * @param meaning
 * @param description
 * @param id
 */
 function Message(nodes, placeholders, placeholderToMessage, meaning, description, id) {
 this.nodes = nodes;
 this.placeholders = placeholders;
 this.placeholderToMessage = placeholderToMessage;
 this.meaning = meaning;
 this.description = description;
 this.id = id;
 if (nodes.length) {
 this.sources = [
 {
 filePath: nodes[0].sourceSpan.start.file.url,
 startLine: nodes[0].sourceSpan.start.line + 1,
 startCol: nodes[0].sourceSpan.start.col + 1,
 endLine: nodes[nodes.length -

```



```

* @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n
CloneVisitor.prototype.visitPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n return new Placeholder(ph.value, ph.name, ph.sourceSpan);\n };\n
/**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n
CloneVisitor.prototype.visitIcuPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n return new IcuPlaceholder(ph.value, ph.name, ph.sourceSpan);\n };\n
return CloneVisitor;\n})();\nvar RecurseVisitor = /** @class */ (function () {\n function RecurseVisitor() {\n }\n /**\n * @param {?} text\n * @param {?=} context\n * @return {?}\n */\n
RecurseVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?=} context\n * @return {?}\n */\n function (text, context) { };\n /**\n * @param {?} container\n * @param {?=} context\n * @return {?}\n */\n
RecurseVisitor.prototype.visitContainer = /**\n * @param {?} container\n * @param {?=} context\n * @return {?}\n */\n function (container, context) {\n var _this = this;\n container.children.forEach(function (child) { return child.visit(_this); });\n };\n /**\n * @param {?} icu\n * @param {?=} context\n * @return {?}\n */\n
RecurseVisitor.prototype.visitIcu = /**\n * @param {?} icu\n * @param {?=} context\n * @return {?}\n */\n function (icu, context) {\n var _this = this;\n Object.keys(icu.cases).forEach(function (k) { icu.cases[k].visit(_this); });\n };\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n
RecurseVisitor.prototype.visitTagPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n var _this = this;\n ph.children.forEach(function (child) { return child.visit(_this); });\n };\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n
RecurseVisitor.prototype.visitPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) { };\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n
RecurseVisitor.prototype.visitIcuPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) { };\n return RecurseVisitor;\n})();\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\nvar HtmlTagDefinition = /** @class */ (function () {\n function HtmlTagDefinition(_a) {\n var _b = _a === void 0 ? {} : _a, closedByChildren = _b.closedByChildren, requiredParents = _b.requiredParents, implicitNamespacePrefix = _b.implicitNamespacePrefix, _c = _b.contentType, contentType = _c === void 0 ? TagContentType.PARSABLE_DATA : _c, _d = _b.closedByParent, closedByParent = _d === void 0 ? false : _d, _e = _b.isVoid, isVoid = _e === void 0 ? false : _e, _f = _b.ignoreFirstLf, ignoreFirstLf = _f === void 0 ? false : _f;\n var _this = this;\n this.closedByChildren = {};\n this.closedByParent = false;\n this.canSelfClose = false;\n if (closedByChildren && closedByChildren.length > 0) {\n closedByChildren.forEach(function (tagName) {\n return _this.closedByChildren[tagName] = true; });\n }\n this.isVoid = isVoid;\n this.closedByParent = closedByParent || isVoid;\n if (requiredParents && requiredParents.length > 0) {\n this.requiredParents = {};\n // The first parent is the list is automatically when none of the listed parents are present\n this.parentToAdd = requiredParents[0];\n requiredParents.forEach(function (tagName) {\n return _this.requiredParents[tagName] = true; });\n }\n this.implicitNamespacePrefix = implicitNamespacePrefix || null;\n this.contentType = contentType;\n this.ignoreFirstLf = ignoreFirstLf;\n };\n /**\n * @param {?} currentParent\n * @return {?}\n */\n
HtmlTagDefinition.prototype.requireExtraParent = /**\n * @param {?} currentParent\n * @return {?}\n */\n function (currentParent) {\n if (!this.requiredParents) {\n return false;\n }\n if (!currentParent) {\n return true;\n }\n var /** @type {?} */ lcParent = currentParent.toLowerCase();\n var /** @type {?} */ isParentTemplate = lcParent === 'template' || currentParent === 'ng-template';\n return !isParentTemplate && this.requiredParents[lcParent] != true;\n };\n /**\n * @param {?} name\n * @return {?}\n */\n
HtmlTagDefinition.prototype.isClosedByChild = /**\n * @param {?} name\n * @return {?}\n */\n function (name) {\n return this.isVoid || name.toLowerCase() in this.closedByChildren;\n };\n return HtmlTagDefinition;\n})();\n// see

```

<http://www.w3.org/TR/html51/syntax.html#optional-tags> This implementation does not fully conform to the HTML5 spec.

```

nvar TAG_DEFINITIONS = {
 'base': new HtmlTagDefinition({ isVoid: true }),
 'meta': new HtmlTagDefinition({ isVoid: true }),
 'area': new HtmlTagDefinition({ isVoid: true }),
 'embed': new HtmlTagDefinition({ isVoid: true }),
 'link': new HtmlTagDefinition({ isVoid: true }),
 'img': new HtmlTagDefinition({ isVoid: true }),
 'input': new HtmlTagDefinition({ isVoid: true }),
 'param': new HtmlTagDefinition({ isVoid: true }),
 'hr': new HtmlTagDefinition({ isVoid: true }),
 'br': new HtmlTagDefinition({ isVoid: true }),
 'source': new HtmlTagDefinition({ isVoid: true }),
 'track': new HtmlTagDefinition({ isVoid: true }),
 'wbr': new HtmlTagDefinition({ isVoid: true }),
 'p': new HtmlTagDefinition({
 closedByChildren: [
 'address', 'article', 'aside', 'blockquote', 'div', 'dl', 'fieldset',
 'footer', 'form', 'h1', 'h2', 'h3', 'h4', 'h5', 'h6', 'header', 'hgroup', 'hr',
 'main', 'nav', 'ol', 'p', 'pre', 'section', 'table', 'ul'
],
 closedByParent: true
 }),
 'thead': new HtmlTagDefinition({
 closedByChildren: ['tbody', 'tfoot']
 }),
 'tbody': new HtmlTagDefinition({
 closedByChildren: ['tbody', 'tfoot'],
 closedByParent: true
 }),
 'tfoot': new HtmlTagDefinition({
 closedByChildren: ['tbody'],
 closedByParent: true
 }),
 'tr': new HtmlTagDefinition({
 closedByChildren: ['tr'],
 requiredParents: ['tbody', 'tfoot', 'thead']
 }),
 'td': new HtmlTagDefinition({
 closedByChildren: ['td', 'th'],
 closedByParent: true
 }),
 'th': new HtmlTagDefinition({
 closedByChildren: ['td', 'th'],
 closedByParent: true
 }),
 'col': new HtmlTagDefinition({
 requiredParents: ['colgroup'],
 isVoid: true
 }),
 'svg': new HtmlTagDefinition({
 implicitNamespacePrefix: 'svg'
 }),
 'math': new HtmlTagDefinition({
 implicitNamespacePrefix: 'math'
 }),
 'li': new HtmlTagDefinition({
 closedByChildren: ['li'],
 closedByParent: true
 }),
 'dt': new HtmlTagDefinition({
 closedByChildren: ['dt', 'dd']
 }),
 'dd': new HtmlTagDefinition({
 closedByChildren: ['dt', 'dd'],
 closedByParent: true
 }),
 'rb': new HtmlTagDefinition({
 closedByChildren: ['rb', 'rt', 'rtc', 'rp'],
 closedByParent: true
 }),
 'rt': new HtmlTagDefinition({
 closedByChildren: ['rb', 'rt', 'rtc', 'rp'],
 closedByParent: true
 }),
 'rtc': new HtmlTagDefinition({
 closedByChildren: ['rb', 'rtc', 'rp'],
 closedByParent: true
 }),
 'rp': new HtmlTagDefinition({
 closedByChildren: ['rb', 'rt', 'rtc', 'rp'],
 closedByParent: true
 }),
 'optgroup': new HtmlTagDefinition({
 closedByChildren: ['optgroup'],
 closedByParent: true
 }),
 'option': new HtmlTagDefinition({
 closedByChildren: ['option', 'optgroup'],
 closedByParent: true
 }),
 'pre': new HtmlTagDefinition({
 ignoreFirstLf: true
 }),
 'listing': new HtmlTagDefinition({
 ignoreFirstLf: true
 }),
 'style': new HtmlTagDefinition({
 contentType: TagContentType.RAW_TEXT
 }),
 'script': new HtmlTagDefinition({
 contentType: TagContentType.RAW_TEXT
 }),
 'title': new HtmlTagDefinition({
 contentType: TagContentType.ESCAPABLE_RAW_TEXT
 }),
 'textarea': new HtmlTagDefinition({
 contentType: TagContentType.ESCAPABLE_RAW_TEXT,
 ignoreFirstLf: true
 })
};

nvar _DEFAULT_TAG_DEFINITION = new HtmlTagDefinition();

/**
 * @param {string} tagName
 * @return {HtmlTagDefinition}
 */
function getHtmlTagDefinition(tagName) {
 return TAG_DEFINITIONS[tagName.toLowerCase()] ||
 _DEFAULT_TAG_DEFINITION;
}

/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes}
 * checked by tsc
 * @license
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license
 */

nvar TAG_TO_PLACEHOLDER_NAMES = {
 'A': 'LINK',
 'B': 'BOLD_TEXT',
 'BR': 'LINE_BREAK',
 'EM': 'EMPHASISED_TEXT',
 'H1': 'HEADING_LEVEL1',
 'H2': 'HEADING_LEVEL2',
 'H3': 'HEADING_LEVEL3',
 'H4': 'HEADING_LEVEL4',
 'H5': 'HEADING_LEVEL5',
 'H6': 'HEADING_LEVEL6',
 'HR': 'HORIZONTAL_RULE',
 'T': 'ITALIC_TEXT',
 'LI': 'LIST_ITEM',
 'LINK': 'MEDIA_LINK',
 'OL': 'ORDERED_LIST',
 'P': 'PARAGRAPH',
 'Q': 'QUOTATION',
 'S': 'STRIKETHROUGH_TEXT',
 'SMALL': 'SMALL_TEXT',
 'SUB': 'SUBSCRIPT',
 'SUP': 'SUPERSCRIPT',
 'TBODY': 'TABLE_BODY',
 'TD': 'TABLE_CELL',
 'TFOOT': 'TABLE_FOOTER',
 'TH': 'TABLE_HEADER_CELL',
 'THEAD': 'TABLE_HEADER',
 'TR': 'TABLE_ROW',
 'TT': 'MONOSPACED_TEXT',
 'U': 'UNDERLINED_TEXT',
 'UL': 'UNORDERED_LIST'
};

/**
 * Creates unique names for placeholder with different content.
 * Returns the same placeholder name when the content is identical.
 */
nvar PlaceholderRegistry = /** @class */ (function () {
 function PlaceholderRegistry() {
 this._placeholderNameCounts = {};
 this._signatureToName =

```



```

};\n }\n /**\n * @param {?} tag\n * @param {?} attrs\n * @param {?} isVoid\n * @return {?}\n *\n PlaceholderRegistry.prototype.getStartTagPlaceholderName = /**\n * @param {?} tag\n * @param {?} attrs\n * @param {?} isVoid\n * @return {?}\n *\n function (tag, attrs, isVoid) {\n var /** @type {?} */ signature = this._hashTag(tag, attrs, isVoid);\n if (this._signatureToName[signature]) {\n return this._signatureToName[signature];\n }\n var /** @type {?} */ upperTag = tag.toUpperCase();\n var /** @type {?} */ baseName = TAG_TO_PLACEHOLDER_NAMES[upperTag] || \"TAG_\" + upperTag;\n var /** @type {?} */ name = this._generateUniqueName(isVoid ? baseName : \"START_\" + baseName);\n this._signatureToName[signature] = name;\n return name;\n };\n /**\n * @param {?} tag\n * @return {?}\n *\n PlaceholderRegistry.prototype.getCloseTagPlaceholderName = /**\n * @param {?} tag\n * @return {?}\n *\n function (tag) {\n var /** @type {?} */ signature = this._hashClosingTag(tag);\n if (this._signatureToName[signature]) {\n return this._signatureToName[signature];\n }\n var /** @type {?} */ upperTag = tag.toUpperCase();\n var /** @type {?} */ baseName = TAG_TO_PLACEHOLDER_NAMES[upperTag] || \"TAG_\" + upperTag;\n var /** @type {?} */ name = this._generateUniqueName(\"CLOSE_\" + baseName);\n this._signatureToName[signature] = name;\n return name;\n };\n /**\n * @param {?} name\n * @param {?} content\n * @return {?}\n *\n PlaceholderRegistry.prototype.getPlaceholderName = /**\n * @param {?} name\n * @param {?} content\n * @return {?}\n *\n function (name, content) {\n var /** @type {?} */ upperName = name.toUpperCase();\n var /** @type {?} */ signature = \"PH: \" + upperName + \"=\" + content;\n if (this._signatureToName[signature]) {\n return this._signatureToName[signature];\n }\n var /** @type {?} */ uniqueName = this._generateUniqueName(upperName);\n this._signatureToName[signature] = uniqueName;\n return uniqueName;\n };\n /**\n * @param {?} name\n * @return {?}\n *\n PlaceholderRegistry.prototype.getUniquePlaceholder = /**\n * @param {?} name\n * @return {?}\n *\n function (name) {\n return this._generateUniqueName(name.toUpperCase());\n };\n /**\n * @param {?} tag\n * @param {?} attrs\n * @param {?} isVoid\n * @return {?}\n *\n PlaceholderRegistry.prototype._hashTag = /**\n * @param {?} tag\n * @param {?} attrs\n * @param {?} isVoid\n * @return {?}\n *\n function (tag, attrs, isVoid) {\n var /** @type {?} */ start = \"<\" + tag;\n var /** @type {?} */ strAttrs = Object.keys(attrs).sort().map(function (name) { return \" \" + name + \"=\" + attrs[name]; }).join(\"\");\n var /** @type {?} */ end = isVoid ? '>' : '><^\" + tag + '>';\n return start + strAttrs + end;\n };\n /**\n * @param {?} tag\n * @return {?}\n *\n PlaceholderRegistry.prototype._hashClosingTag = /**\n * @param {?} tag\n * @return {?}\n *\n function (tag) { return this._hashTag(\"^\" + tag, {}, false); };\n /**\n * @param {?} base\n * @return {?}\n *\n PlaceholderRegistry.prototype._generateUniqueName = /**\n * @param {?} base\n * @return {?}\n *\n function (base) {\n var /** @type {?} */ seen = this._placeholderNameCounts.hasOwnProperty(base);\n if (!seen) {\n this._placeholderNameCounts[base] = 1;\n return base;\n }\n var /** @type {?} */ id = this._placeholderNameCounts[base];\n this._placeholderNameCounts[base] = id + 1;\n return base + \"_\" + id;\n };\n return PlaceholderRegistry;\n})();\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n */\n\nvar _expParser = new Parser(new Lexer());\n\n/**\n * Returns a function converting html nodes to an i18n Message given an interpolationConfig\n * @param {?} interpolationConfig\n * @return {?}\n */\n\nfunction createI18nMessageFactory(interpolationConfig) {\n var /** @type {?} */ visitor = new _I18nVisitor(_expParser, interpolationConfig);\n return function (nodes, meaning, description, id) {\n return visitor.toI18nMessage(nodes, meaning, description, id);\n };\n}\n\nvar _I18nVisitor = /** @class */ (function () {\n function _I18nVisitor(_expressionParser, _interpolationConfig) {\n this._expressionParser = _expressionParser;\n this._interpolationConfig = _interpolationConfig;\n }\n\n /**\n * @param {?} nodes\n * @param {?} meaning\n * @param {?} description\n * @param {?} id\n * @return {?}\n */\n\n _I18nVisitor.prototype.toI18nMessage = /**\n * @param {?} nodes\n * @param {?} meaning\n * @param {?} description\n * @param {?} id\n * @return {?}\n */\n\n function (nodes, meaning, description, id) {\n

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 this._isIcu = nodes.length === 1 && nodes[0] instanceof Expansion;\n this._icuDepth = 0;\n
 this._placeholderRegistry = new PlaceholderRegistry();\n this._placeholderToContent = {};\n
 this._placeholderToMessage = {};\n var /** @type {?} */ i18nNodes = visitAll(this, nodes, {});\n return new\n
 Message(i18nNodes, this._placeholderToContent, this._placeholderToMessage, meaning, description, id);\n };\n
 /**\n * @param {?} el\n * @param {?} context\n * @return {?} \n */\n
 _I18nVisitor.prototype.visitElement = /**\n * @param {?} el\n * @param {?} context\n * @return {?} \n\n
 */\n function (el, context) {\n var /** @type {?} */ children = visitAll(this, el.children);\n var /** @type\n
 {?} */ attrs = {};\n el.attrs.forEach(function (attr) {\n // Do not visit the attributes, translatable ones are\n
 top-level ASTs\n attrs[attr.name] = attr.value;\n });\n var /** @type {?} */ isVoid =\n
 getHtmlTagDefinition(el.name).isVoid;\n var /** @type {?} */ startPhName =\n
 this._placeholderRegistry.getStartTagPlaceholderName(el.name, attrs, isVoid);\n
 this._placeholderToContent[startPhName] = /** @type {?} */ ((el.sourceSpan)).toString();\n var /** @type {?} */\n
 */ closePhName = ";\n if (!isVoid) {\n closePhName =\n
 this._placeholderRegistry.getCloseTagPlaceholderName(el.name);\n
 this._placeholderToContent[closePhName] = "<" + el.name + ">";\n }\n return new\n
 TagPlaceholder(el.name, attrs, startPhName, closePhName, children, isVoid, /** @type {?} */ ((el.sourceSpan)));\n
 };\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?} \n */\n
 _I18nVisitor.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return\n
 {?} \n */\n function (attribute, context) {\n return this._visitTextWithInterpolation(attribute.value,\n
 attribute.sourceSpan);\n };\n /**\n * @param {?} text\n * @param {?} context\n * @return {?} \n */\n
 _I18nVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return {?} \n\n
 */\n function (text, context) {\n return this._visitTextWithInterpolation(text.value, /** @type {?} */\n
 ((text.sourceSpan)));\n };\n /**\n * @param {?} comment\n * @param {?} context\n * @return {?} \n */\n
 _I18nVisitor.prototype.visitComment = /**\n * @param {?} comment\n * @param {?} context\n *\n
 @return {?} \n */\n function (comment, context) { return null; };\n /**\n * @param {?} icu\n * @param\n
 {?} context\n * @return {?} \n */\n _I18nVisitor.prototype.visitExpansion = /**\n * @param {?} icu\n *\n
 @param {?} context\n * @return {?} \n */\n function (icu, context) {\n var _this = this;\n
 this._icuDepth++;\n var /** @type {?} */ i18nIcuCases = {};\n var /** @type {?} */ i18nIcu = new\n
 Icu(icu.switchValue, icu.type, i18nIcuCases, icu.sourceSpan);\n icu.cases.forEach(function (caze) {\n
 i18nIcuCases[caze.value] = new Container(caze.expression.map(function (node) { return node.visit(_this, {}); }),\n
 caze.expSourceSpan);\n });\n this._icuDepth--;\n if (this._isIcu || this._icuDepth > 0) {\n //\n
 Returns an ICU node when:\n // - the message (vs a part of the message) is an ICU message, or\n // -\n
 the ICU message is nested.\n var /** @type {?} */ expPh =\n
 this._placeholderRegistry.getUniquePlaceholder("VAR_" + icu.type);\n i18nIcu.expressionPlaceholder =\n
 expPh;\n this._placeholderToContent[expPh] = icu.switchValue;\n return i18nIcu;\n }\n //\n
 Else returns a placeholder\n // ICU placeholders should not be replaced with their original content but with the\n
 their\n // translations. We need to create a new visitor (they are not re-entrant) to compute the\n // message\n
 id.\n // TODO(vicb): add a html.Node -> i18n.Message cache to avoid having to re-create the msg\n var /**\n
 @type {?} */ phName = this._placeholderRegistry.getPlaceholderName('ICU', icu.sourceSpan.toString());\n var /**\n
 @type {?} */ visitor = new _I18nVisitor(this._expressionParser, this._interpolationConfig);\n
 this._placeholderToMessage[phName] = visitor.toI18nMessage([icu, "", "]);\n return new\n
 IcuPlaceholder(i18nIcu, phName, icu.sourceSpan);\n };\n /**\n * @param {?} icuCase\n * @param {?} \n
 context\n * @return {?} \n */\n _I18nVisitor.prototype.visitExpansionCase = /**\n * @param {?} \n
 icuCase\n * @param {?} context\n * @return {?} \n */\n function (icuCase, context) {\n throw new\n
 Error('Unreachable code');\n };\n /**\n * @param {?} text\n * @param {?} sourceSpan\n * @return\n
 {?} \n */\n _I18nVisitor.prototype._visitTextWithInterpolation = /**\n * @param {?} text\n * @param {?} \n
 sourceSpan\n * @return {?} \n */\n function (text, sourceSpan) {\n var /** @type {?} */\n
 splitInterpolation = this._expressionParser.splitInterpolation(text, sourceSpan.start.toString(),

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new ExtractionResult(this._messages, this._errors);\n });\n /**\n * Returns a tree where all translatable nodes
are translated\n */\n /**\n * Returns a tree where all translatable nodes are translated\n * @param {?}
nodes\n * @param {?} translations\n * @param {?} interpolationConfig\n * @return {?}\n */\n _Visitor.prototype.merge = /**\n * Returns a tree where all translatable nodes are translated\n * @param {?}
nodes\n * @param {?} translations\n * @param {?} interpolationConfig\n * @return {?}\n */\n function
(nodes, translations, interpolationConfig) {\n this._init(_VisitorMode.Merge, interpolationConfig);\n
this._translations = translations;\n // Construct a single fake root element\n var /** @type {?} */ wrapper =
new Element('wrapper', [], nodes, /** @type {?} */ ((undefined)), undefined, undefined);\n var /** @type {?}
*/ translatedNode = wrapper.visit(this, null);\n if (this._inI18nBlock) {\n
this._reportError(nodes[nodes.length - 1], 'Unclosed block');\n }\n return new
ParseTreeResult(translatedNode.children, this._errors);\n });\n /**\n * @param {?} icuCase\n * @param
{?} context\n * @return {?}\n */\n _Visitor.prototype.visitExpansionCase = /**\n * @param {?}
icuCase\n * @param {?} context\n * @return {?}\n */\n function (icuCase, context) {\n // Parse cases
for translatable html attributes\n var /** @type {?} */ expression = visitAll(this, icuCase.expression, context);\n
 if (this._mode === _VisitorMode.Merge) {\n return new ExpansionCase(icuCase.value, expression,
icuCase.sourceSpan, icuCase.valueSourceSpan, icuCase.expSourceSpan);\n }\n });\n /**\n * @param {?}
icu\n * @param {?} context\n * @return {?}\n */\n _Visitor.prototype.visitExpansion = /**\n * @param
{?} icu\n * @param {?} context\n * @return {?}\n */\n function (icu, context) {\n
this._maybeAddBlockChildren(icu);\n var /** @type {?} */ wasInIcu = this._inIcu;\n if (!this._inIcu) {\n
// nested ICU messages should not be extracted but top-level translated as a whole\n if
(this._isInTranslatableSection) {\n this._addMessage([icu]);\n }\n this._inIcu = true;\n
}\n var /** @type {?} */ cases = visitAll(this, icu.cases, context);\n if (this._mode ===
_VisitorMode.Merge) {\n icu = new Expansion(icu.switchValue, icu.type, cases, icu.sourceSpan,
icu.switchValueSourceSpan);\n }\n this._inIcu = wasInIcu;\n return icu;\n });\n /**\n * @param
{?} comment\n * @param {?} context\n * @return {?}\n */\n _Visitor.prototype.visitComment = /**\n *
@param {?} comment\n * @param {?} context\n * @return {?}\n */\n function (comment, context) {\n
var /** @type {?} */ isOpening = _isOpeningComment(comment);\n if (isOpening &&
this._isInTranslatableSection) {\n this._reportError(comment, 'Could not start a block inside a translatable
section');\n return;\n }\n var /** @type {?} */ isClosing = _isClosingComment(comment);\n if
(isClosing && !this._inI18nBlock) {\n this._reportError(comment, 'Trying to close an unopened block');\n
return;\n }\n if (!this._inI18nNode && this._inIcu) {\n if (!this._inI18nBlock) {\n if
(isOpening) {\n // deprecated from v5 you should use <ng-container i18n> instead of i18n comments\n
 if (!i18nCommentsWarned && /** @type {?} */ (console) && /** @type {?} */ (console.warn)) {\n
 i18nCommentsWarned = true;\n var /** @type {?} */ details = comment.sourceSpan.details ?
'\n', '\n' + comment.sourceSpan.details : '';\n // TODO(ocombe): use a log service once there is a public
one available\n console.warn("\nI18n comments are deprecated, use an <ng-container> element instead
(\n" + comment.sourceSpan.start + details + "\n)");\n }\n this._inI18nBlock = true;\n
this._blockStartDepth = this._depth;\n this._blockChildren = [];\n
this._blockMeaningAndDesc = /** @type {?} */
((comment.value)).replace(_I18N_COMMENT_PREFIX_REGEXP, "").trim();\n
this._openTranslatableSection(comment);\n }\n }\n else {\n if (isClosing) {\n
 if (this._depth == this._blockStartDepth) {\n this._closeTranslatableSection(comment,
this._blockChildren);\n this._inI18nBlock = false;\n var /** @type {?} */ message =
/** @type {?} */ ((this._addMessage(this._blockChildren, this._blockMeaningAndDesc));\n // merge
attributes in sections\n var /** @type {?} */ nodes = this._translateMessage(comment, message);\n
 return visitAll(this, nodes);\n }\n }\n } else {\n
this._reportError(comment, 'I18N blocks should not cross element boundaries');\n return;\n
}\n }\n }\n }\n });\n /**\n * @param {?} text\n * @param {?} context\n * @return

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{?}\n *^n _Visitor.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return
{?}\n *^n function (text, context) {\n if (this._isInTranslatableSection) {\n
this._maybeAddBlockChildren(text);\n }\n return text;\n };\n /**\n * @param {?} el\n * @param
{?} context\n * @return {?}\n *^n _Visitor.prototype.visitElement = /**\n * @param {?} el\n *
@param {?} context\n * @return {?}\n *^n function (el, context) {\n var _this = this;\n
this._maybeAddBlockChildren(el);\n this._depth++; \n var /** @type {?} */ wasInI18nNode =
this._inI18nNode;\n var /** @type {?} */ wasInImplicitNode = this._inImplicitNode;\n var /** @type {?}
*/ childNodes = [];\n var /** @type {?} */ translatedChildNodes = /** @type {?} */ ((undefined));\n //
Extract:\n // - top level nodes with the (implicit) `i18n` attribute if not already in a section\n // - ICU
messages\n var /** @type {?} */ i18nAttr = _getI18nAttr(el);\n var /** @type {?} */ i18nMeta = i18nAttr
? i18nAttr.value : '';\n var /** @type {?} */ isImplicit = this._implicitTags.some(function (tag) { return el.name
=== tag; }) && !this._inIcu &&\n !this._isInTranslatableSection;\n var /** @type {?} */
isTopLevelImplicit = !wasInImplicitNode && isImplicit;\n this._inImplicitNode = wasInImplicitNode ||
isImplicit;\n if (!this._isInTranslatableSection && !this._inIcu) {\n if (i18nAttr || isTopLevelImplicit) {\n
 this._inI18nNode = true;\n var /** @type {?} */ message = /** @type {?} */
(((this._addMessage(el.children, i18nMeta)));\n translatedChildNodes = this._translateMessage(el,
message);\n }\n if (this._mode === _VisitorMode.Extract) {\n var /** @type {?} */
isTranslatable = i18nAttr || isTopLevelImplicit;\n if (isTranslatable)\n this._openTranslatableSection(el);\n visitAll(this, el.children);\n if (isTranslatable)\n
this._closeTranslatableSection(el, el.children);\n }\n }\n else {\n if (i18nAttr ||
isTopLevelImplicit) {\n this._reportError(el, 'Could not mark an element as translatable inside a
translatable section');\n }\n if (this._mode === _VisitorMode.Extract) {\n // Descend into child
nodes for extraction\n visitAll(this, el.children);\n }\n }\n if (this._mode ===
_VisitorMode.Merge) {\n var /** @type {?} */ visitNodes = translatedChildNodes || el.children;\n
visitNodes.forEach(function (child) {\n var /** @type {?} */ visited = child.visit(_this, context);\n
if (visited && !this._isInTranslatableSection) {\n // Do not add the children from translatable sections
(= i18n blocks here)\n // They will be added later in this loop when the block closes (i.e. on `<!-- /i18n --
>`)\n childNodes = childNodes.concat(visited);\n }\n });\n }\n
this._visitAttributesOf(el);\n this._depth--;\n this._inI18nNode = wasInI18nNode;\n
this._inImplicitNode = wasInImplicitNode;\n if (this._mode === _VisitorMode.Merge) {\n var /**
@type {?} */ translatedAttrs = this._translateAttributes(el);\n return new Element(el.name, translatedAttrs,
childNodes, el.sourceSpan, el.startSourceSpan, el.endSourceSpan);\n }\n return null;\n };\n /**\n *
@param {?} attribute\n * @param {?} context\n * @return {?}\n *^n _Visitor.prototype.visitAttribute =
/**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n *^n function (attribute,
context) {\n throw new Error('unreachable code');\n };\n /**\n * @param {?} mode\n * @param {?}
interpolationConfig\n * @return {?}\n *^n _Visitor.prototype._init = /**\n * @param {?} mode\n *
@param {?} interpolationConfig\n * @return {?}\n *^n function (mode, interpolationConfig) {\n
this._mode = mode;\n this._inI18nBlock = false;\n this._inI18nNode = false;\n this._depth = 0;\n
this._inIcu = false;\n this._msgCountAtSectionStart = undefined;\n this._errors = [];\n this._messages =
[];\n this._inImplicitNode = false;\n this._createI18nMessage =
createI18nMessageFactory(interpolationConfig);\n };\n /**\n * @param {?} el\n * @return {?}\n *^n
_Visitor.prototype._visitAttributesOf = /**\n * @param {?} el\n * @return {?}\n *^n function (el) {\n
var _this = this;\n var /** @type {?} */ explicitAttrNameToValue = {};\n var /** @type {?} */
implicitAttrNames = this._implicitAttrs[el.name] || [];\n el.attrs.filter(function (attr) { return
attr.name.startsWith(_I18N_ATTR_PREFIX); })\n .forEach(function (attr) {\n return
explicitAttrNameToValue[attr.name.slice(_I18N_ATTR_PREFIX.length)] =\n attr.value;\n });\n
el.attrs.forEach(function (attr) {\n if (attr.name in explicitAttrNameToValue) {\n
 _this._addMessage([attr], explicitAttrNameToValue[attr.name]);\n }\n else if

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(implicitAttrNames.some(function (name) { return attr.name === name; })) {\n
 _this._addMessage([attr]);\n
 }\n
 });\n
 /**\n
 * @param {?} ast\n
 * @param {?=} msgMeta\n
 * @return {?}\n
 */\n
 _Visitor.prototype._addMessage = /**\n
 * @param {?} ast\n
 * @param {?=} msgMeta\n
 * @return {?}\n
 */\n
 function (ast, msgMeta) {\n
 if (ast.length === 0 ||\n
 ast.length === 1\n
 && ast[0] instanceof Attribute$1 && !/** @type {?} */ (ast[0]).value) {\n
 // Do not create empty\n
 messages\n
 return null;\n
 }\n
 var _a = _parseMessageMeta(msgMeta), meaning = _a.meaning,\n
 description = _a.description, id = _a.id;\n
 var /** @type {?} */ message = this._createI18nMessage(ast,\n
 meaning, description, id);\n
 this._messages.push(message);\n
 return message;\n
 };\n
 /**\n
 * @param\n
 {?} el\n
 * @param {?} message\n
 * @return {?}\n
 */\n
 _Visitor.prototype._translateMessage = /**\n
 * @param {?} el\n
 * @param {?} message\n
 * @return {?}\n
 */\n
 function (el, message) {\n
 if\n
 (message && this._mode === _VisitorMode.Merge) {\n
 var /** @type {?} */ nodes =\n
 this._translations.get(message);\n
 if (nodes) {\n
 return nodes;\n
 }\n
 this._reportError(el, "Translation unavailable for message id=\\\\" + this._translations.digest(message) + "\\");\n
 }\n
 return [];\n
 };\n
 /**\n
 * @param {?} el\n
 * @return {?}\n
 */\n
 _Visitor.prototype._translateAttributes = /**\n
 * @param {?} el\n
 * @return {?}\n
 */\n
 function (el) {\n
 var _this = this;\n
 var /** @type {?} */ attributes = el.attrs;\n
 var /** @type {?} */\n
 i18nParsedMessageMeta = {};\n
 attributes.forEach(function (attr) {\n
 if\n
 (attr.name.startsWith(_I18N_ATTR_PREFIX)) {\n
 i18nParsedMessageMeta[attr.name.slice(_I18N_ATTR_PREFIX.length)] =\n
 _parseMessageMeta(attr.value);\n
 }\n
 var /** @type {?} */ translatedAttributes = [];\n
 attributes.forEach(function (attr) {\n
 if (attr.name === _I18N_ATTR ||\n
 attr.name.startsWith(_I18N_ATTR_PREFIX)) {\n
 // strip i18n specific attributes\n
 return;\n
 }\n
 if (attr.value && attr.value !== " && i18nParsedMessageMeta.hasOwnProperty(attr.name)) {\n
 var _a = i18nParsedMessageMeta[attr.name], meaning = _a.meaning, description = _a.description, id = _a.id;\n
 var /** @type {?} */ message = _this._createI18nMessage([attr], meaning, description, id);\n
 var /**\n
 @type {?} */ nodes = _this._translations.get(message);\n
 if (nodes) {\n
 if (nodes.length === 0)\n
 {\n
 translatedAttributes.push(new Attribute$1(attr.name, "", attr.sourceSpan));\n
 }\n
 else if (nodes[0] instanceof Text) {\n
 var /** @type {?} */ value = /** @type {?} */\n
 (nodes[0]).value;\n
 translatedAttributes.push(new Attribute$1(attr.name, value, attr.sourceSpan));\n
 }\n
 else {\n
 _this._reportError(el, "Unexpected translation for attribute \\\\" +\n
 attr.name + "\\\" (id=\\\\" + (id || _this._translations.digest(message)) + "\\");\n
 }\n
 }\n
 else {\n
 _this._reportError(el, "Translation unavailable for attribute \\\\" + attr.name + "\\\" (id=\\\\" + (id || _this._translations.digest(message)) + "\\");\n
 }\n
 }\n
 else {\n
 translatedAttributes.push(attr);\n
 }\n
 });\n
 return translatedAttributes;\n
 };\n
 /**\n
 * Add the\n
 node as a child of the block when:\n
 * - we are in a block,\n
 * - we are not inside a ICU message (those are\n
 handled separately),\n
 * - the node is a \"direct child\" of the block\n
 * @param {?} node\n
 * @return {?}\n
 */\n
 _Visitor.prototype._maybeAddBlockChildren = /**\n
 * Add the node as a child of the block when:\n
 * -\n
 we are in a block,\n
 * - we are not inside a ICU message (those are handled separately),\n
 * - the node is a\n
 \"direct child\" of the block\n
 * @param {?} node\n
 * @return {?}\n
 */\n
 function (node) {\n
 if\n
 (this._inI18nBlock && !this._inIcu && this._depth === this._blockStartDepth) {\n
 this._blockChildren.push(node);\n
 }\n
 });\n
 /**\n
 * Marks the start of a section, see\n
 `closeTranslatableSection`\n
 * @param {?} node\n
 * @return {?}\n
 */\n
 _Visitor.prototype._openTranslatableSection = /**\n
 * Marks the start of a section, see\n
 `closeTranslatableSection`\n
 * @param {?} node\n
 * @return {?}\n
 */\n
 function (node) {\n
 if\n
 (this._isInTranslatableSection) {\n
 this._reportError(node, 'Unexpected section start');\n
 }\n
 else {\n
 this._msgCountAtSectionStart = this._messages.length;\n
 }\n
 };\n
 Object.defineProperty(_Visitor.prototype, \"_isInTranslatableSection\", {\n
 get: /**\n
 * A translatable\n
 section could be:\n
 * - the content of translatable element,\n
 * - nodes between `<!-- i18n -->` and `<!--

```

```

/i18n -->` comments\n * @return {?}\n *\n function () {\n return
this._msgCountAtSectionStart !== void 0;\n },\n enumerable: true,\n configurable: true\n });\n /**\n * Terminates a section.\n * \n * If a section has only one significant children (comments not significant)
then we should not\n * keep the message from this children:\n * \n * `
```







```

found in the LICENSE file at https://angular.io/license\n *\nvar _VERSION = '1.2';\nvar _XMLNS =
'urn:oasis:names:tc:xliff:document:1.2';\n// TODO(vicb): make this a param (s/_/-)\nvar
_DEFAULT_SOURCE_LANG = 'en';\nvar _PLACEHOLDER_TAG = 'x';\nvar _FILE_TAG = 'file';\nvar
_SOURCE_TAG = 'source';\nvar _TARGET_TAG = 'target';\nvar _UNIT_TAG = 'trans-unit';\nvar
_CONTEXT_GROUP_TAG = 'context-group';\nvar _CONTEXT_TAG = 'context';\nvar Xliff = /** @class */
(function (_super) {\n __extends(Xliff, _super);\n function Xliff() {\n return _super !== null &&
_super.apply(this, arguments) || this;\n }\n /**\n * @param {?} messages\n * @param {?} locale\n *
@return {?}\n *\n Xliff.prototype.write = /**\n * @param {?} messages\n * @param {?} locale\n *
@return {?}\n *\n function (messages, locale) {\n var /** @type {?} */ visitor = new _WriteVisitor();\n var /** @type {?} */ transUnits = [];\n messages.forEach(function (message) {\n var /** @type {?} */
contextTags = [];\n message.sources.forEach(function (source) {\n var /** @type {?} */
contextGroupTag = new Tag(_CONTEXT_GROUP_TAG, { purpose: 'location' });\n contextGroupTag.children.push(new CR(10), new Tag(_CONTEXT_TAG, { 'context-type': 'sourcefile' }, [new
Text$2(source.filePath)]), new CR(10), new Tag(_CONTEXT_TAG, { 'context-type': 'linenumber' }, [new
Text$2("\n" + source.startLine)]), new CR(8));\n contextTags.push(new CR(8), contextGroupTag);\n });\n var /** @type {?} */ transUnit = new Tag(_UNIT_TAG, { id: message.id, datatype: 'html' });\n (_a = transUnit.children).push.apply(_a, [new CR(8), new Tag(_SOURCE_TAG, {},
visitor.serialize(message.nodes))].concat(contextTags));\n if (message.description) {\n transUnit.children.push(new CR(8), new Tag('note', { priority: '1', from: 'description' }, [new
Text$2(message.description)]));\n }\n if (message.meaning) {\n transUnit.children.push(new
CR(8), new Tag('note', { priority: '1', from: 'meaning' }, [new Text$2(message.meaning)]));\n }\n transUnit.children.push(new CR(6));\n transUnits.push(new CR(6), transUnit);\n var _a;\n });\n var /** @type {?} */ body = new Tag('body', {}, transUnits.concat([new CR(4)]));\n var /** @type {?} */ file
= new Tag('file', {\n 'source-language': locale || _DEFAULT_SOURCE_LANG,\n datatype:
'plaintext',\n original: 'ng2.template',\n }, [new CR(4), body, new CR(2)]);\n var /** @type {?} */
xliff = new Tag('xliff', { version: _VERSION, xmlns: _XMLNS }, [new CR(2), file, new CR(0)]);\n return
serialize([\n new Declaration({ version: '1.0', encoding: 'UTF-8' }),\n new CR(),\n xliff,\n new CR()\n]);\n };\n /**\n * @param {?} content\n * @param {?} url\n * @return {?}\n *\n Xliff.prototype.load =
/**\n * @param {?} content\n * @param {?} url\n * @return {?}\n *\n function (content, url) {\n //
xliff to xml nodes\n var /** @type {?} */ xliffParser = new XliffParser();\n var _a =
xliffParser.parse(content, url), locale = _a.locale, msgIdToHtml = _a.msgIdToHtml, errors = _a.errors;\n // xml
nodes to i18n nodes\n var /** @type {?} */ i18nNodesByMsgId = {};\n var /** @type {?} */ converter =
new XmlToI18n();\n Object.keys(msgIdToHtml).forEach(function (msgId) {\n var _a =
converter.convert(msgIdToHtml[msgId], url), i18nNodes = _a.i18nNodes, e = _a.errors;\n errors.push.apply(errors, e);\n i18nNodesByMsgId[msgId] = i18nNodes;\n });\n if (errors.length) {\n throw new Error("\n xliff parse errors:\n \n" + errors.join("\n \n"));
 }\n return { locale: /** @type {?} */
((locale)), i18nNodesByMsgId: i18nNodesByMsgId };
 };\n /**\n * @param {?} message\n * @return
{?}\n *\n Xliff.prototype.digest = /**\n * @param {?} message\n * @return {?}\n *\n function
(message) {\n return digest(message);\n };\n return Xliff;\n })(Serializer);\n var _WriteVisitor = /** @class */ (function
() {\n function _WriteVisitor() {\n }\n /**\n * @param {?} text\n * @param {?=} context\n * @return
{?}\n *\n _WriteVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?=} context\n *
@return {?}\n *\n function (text, context) {\n return [new Text$2(text.value)];\n };\n /**\n * @param {?}
container\n * @param {?=} context\n * @return {?}\n *\n _WriteVisitor.prototype.visitContainer = /**\n * @param {?} container\n * @param {?=} context\n * @return {?}\n *\n function (container, context)
{\n var _this = this;\n var /** @type {?} */ nodes = [];\n container.children.forEach(function (node) {\n return nodes.push.apply(nodes, node.visit(_this));\n });\n return nodes;\n };\n /**\n * @param {?} icu\n *
@return {?}\n *\n _WriteVisitor.prototype.visitIcu = /**\n * @param {?} icu\n * @param {?=} context\n * @return {?}\n *\n function (icu, context) {\n var _this = this;\n var /**

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@type {?} */ nodes = [new Text$2("\{" + icu.expressionPlaceholder + "\", \" + icu.type + "\", \");\n
Object.keys(icu.cases).forEach(function (c) {\n nodes.push.apply(nodes, [new Text$2(c + \"
{\").concat(icu.cases[c].visit(_this), [new Text$2(\" \")]);\n });\n nodes.push(new Text$2(\" \"));
return nodes;\n });\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?} \n * \n
_WriteVisitor.prototype.visitTagPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n *
@return {?} \n * \n function (ph, context) {\n var /** @type {?} */ ctype = getCTypeForTag(ph.tag);\n
if (ph.isVoid) {\n // void tags have no children nor closing tags\n return [new
Tag(_PLACEHOLDER_TAG, { id: ph.startName, ctype: ctype, 'equiv-text': \"<\" + ph.tag + \"/>\" });\n]\n
var /** @type {?} */ startTagPh = new Tag(_PLACEHOLDER_TAG, { id: ph.startName, ctype: ctype, 'equiv-
text': \"<\" + ph.tag + \"/>\" });\n var /** @type {?} */ closeTagPh = new Tag(_PLACEHOLDER_TAG, { id:
ph.closeName, ctype: ctype, 'equiv-text': \"<\" + ph.tag + \"/>\" });\n return
[startTagPh].concat(this.serialize(ph.children), [closeTagPh]);\n });\n /**\n * @param {?} ph\n * @param
{?=} context\n * @return {?} \n * \n _WriteVisitor.prototype.visitPlaceholder = /**\n * @param {?} ph\n
* @param {?=} context\n * @return {?} \n * \n function (ph, context) {\n return [new
Tag(_PLACEHOLDER_TAG, { id: ph.name, 'equiv-text': \"{\{\" + ph.value + \"}\" });\n });\n /**\n *
@param {?} ph\n * @param {?=} context\n * @return {?} \n * \n _WriteVisitor.prototype.visitIcuPlaceholder = /**\n
* @param {?} ph\n * @param {?=} context\n * @return
{?} \n * \n function (ph, context) {\n var /** @type {?} */ equivText = \"{\{\" + ph.value.expression +
\", \" +
ph.value.type + "\", \" + Object.keys(ph.value.cases).map(function (value) { return value + '...'; }).join(' ') +
}\"});\n return [new Tag(_PLACEHOLDER_TAG, { id: ph.name, 'equiv-text': equivText });\n];\n /**\n
* @param {?} nodes\n * @return {?} \n * \n _WriteVisitor.prototype.serialize = /**\n * @param {?}
nodes\n * @return {?} \n * \n function (nodes) {\n var _this = this;\n return [].concat.apply([],
nodes.map(function (node) { return node.visit(_this); }));\n });\n return _WriteVisitor;\n})(\nvar XliffParser =
/** @class */ (function () {\n function XliffParser() {\n this._locale = null;\n }\n /**\n * @param {?}
xliff\n * @param {?} url\n * @return {?} \n * \n XliffParser.prototype.parse = /**\n * @param {?}
xliff\n * @param {?} url\n * @return {?} \n * \n function (xliff, url) {\n this._unitMIString = null;\n
this._msgIdToHtml = {};\n var /** @type {?} */ xml = new XmlParser().parse(xliff, url, false);\n
this._errors = xml.errors;\n visitAll(this, xml.rootNodes, null);\n return {\n msgIdToHtml:
this._msgIdToHtml,\n errors: this._errors,\n locale: this._locale,\n }; \n }; \n /**\n * @param
{?} element\n * @param {?} context\n * @return {?} \n * \n XliffParser.prototype.visitElement = /**\n
* @param {?} element\n * @param {?} context\n * @return {?} \n * \n function (element, context) {\n
switch (element.name) {\n case _UNIT_TAG:\n this._unitMIString = /** @type {?} */ ((null));\n
var /** @type {?} */ idAttr = element.attrs.find(function (attr) { return attr.name === 'id'; });\n if
(!idAttr) {\n this._addError(element, \"<\" + _UNIT_TAG + \"/> misses the \"id\" attribute);\n
 }\n else {\n var /** @type {?} */ id = idAttr.value;\n if
(this._msgIdToHtml.hasOwnProperty(id)) {\n this._addError(element, \"Duplicated translations for
msg \" + id);\n }\n else {\n visitAll(this, element.children, null);\n
 if (typeof this._unitMIString === 'string') {\n this._msgIdToHtml[id] = this._unitMIString;\n
 }\n else {\n this._addError(element, \"Message \" + id + \" misses a
translation);\n }\n }\n break;\n case _SOURCE_TAG:\n // ignore source message\n
break;\n case _TARGET_TAG:\n var /** @type {?} */
innerTextStart = /** @type {?} */ ((element.startSourceSpan)).end.offset;\n var /** @type {?} */
innerTextEnd = /** @type {?} */ ((element.endSourceSpan)).start.offset;\n var /** @type {?} */ content =
/** @type {?} */ ((element.startSourceSpan)).start.file.content;\n var /** @type {?} */ innerText =
content.slice(innerTextStart, innerTextEnd);\n this._unitMIString = innerText;\n break;\n
 case _FILE_TAG:\n var /** @type {?} */ localeAttr = element.attrs.find(function (attr) { return attr.name
=== 'target-language'; });\n if (localeAttr) {\n this._locale = localeAttr.value;\n }\n
visitAll(this, element.children, null);\n break;\n default:\n // TODO(vic): assert file

```

```

structure, xlify version\n // For now only recurse on unhandled nodes\n visitAll(this,
element.children, null);\n }\n }\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n XlifyParser.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n function (attribute, context) { }\n /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n XlifyParser.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n function (text, context) { }\n /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n XlifyParser.prototype.visitComment = /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n function (comment, context) { }\n /**\n * @param {?} expansion\n * @param {?} context\n * @return {?}\n */\n XlifyParser.prototype.visitExpansion = /**\n * @param {?} expansion\n * @param {?} context\n * @return {?}\n */\n function (expansion, context) { }\n /**\n * @param {?} expansionCase\n * @param {?} context\n * @return {?}\n */\n XlifyParser.prototype.visitExpansionCase = /**\n * @param {?} expansionCase\n * @param {?} context\n * @return {?}\n */\n function (expansionCase, context) { }\n /**\n * @param {?} node\n * @param {?} message\n * @return {?}\n */\n XlifyParser.prototype._addError = /**\n * @param {?} node\n * @param {?} message\n * @return {?}\n */\n function (node, message) {\n this._errors.push(new I18nError(/** @type {?} */ ((node.sourceSpan)), message));\n }\n return XlifyParser;\n}());\n\nvar XmlToI18n = /** @class */ (function () {\n function XmlToI18n() {\n }\n /**\n * @param {?} message\n * @param {?} url\n * @return {?}\n */\n XmlToI18n.prototype.convert = /**\n * @param {?} message\n * @param {?} url\n * @return {?}\n */\n function (message, url) {\n var /** @type {?} */ xmlIcu = new XmlParser().parse(message, url, true);\n this._errors = xmlIcu.errors;\n var /** @type {?} */ i18nNodes = this._errors.length > 0 || xmlIcu.rootNodes.length == 0 ?\n [] :\n visitAll(this, xmlIcu.rootNodes);\n return {\n i18nNodes: i18nNodes,\n errors: this._errors,\n };\n }\n /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n function (text, context) {\n return new Text$(text.value, /** @type {?} */ ((text.sourceSpan))); }\n /**\n * @param {?} el\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitElement = /**\n * @param {?} el\n * @param {?} context\n * @return {?}\n */\n function (el, context) {\n if (el.name === _PLACEHOLDER_TAG) {\n var /** @type {?} */ nameAttr = el.attrs.find(function (attr) {\n return attr.name === 'id';\n });\n if (nameAttr) {\n return new Placeholder(" " + nameAttr.value, /** @type {?} */ ((el.sourceSpan))); }\n }\n this._addError(el, "\"<" + _PLACEHOLDER_TAG + "> misses the \"id\" attribute");\n }\n else {\n this._addError(el, "Unexpected tag");\n }\n return null;\n }\n /**\n * @param {?} icu\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitExpansion = /**\n * @param {?} icu\n * @param {?} context\n * @return {?}\n */\n function (icu, context) {\n var /** @type {?} */ caseMap = {};\n visitAll(this, icu.cases).forEach(function (c) {\n caseMap[c.value] = new Container(c.nodes, icu.sourceSpan);\n });\n return new Icu(icu.switchValue, icu.type, caseMap, icu.sourceSpan);\n }\n /**\n * @param {?} icuCase\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitExpansionCase = /**\n * @param {?} icuCase\n * @param {?} context\n * @return {?}\n */\n function (icuCase, context) {\n return {\n value: icuCase.value,\n nodes: visitAll(this, icuCase.expression),\n };\n }\n /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitComment = /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n function (comment, context) { }\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n function (attribute, context) { }\n /**\n * @param {?} node\n * @param {?} message\n * @return {?}\n */\n XmlToI18n.prototype._addError = /**\n * @param {?} node\n * @param {?} message\n * @return {?}\n */\n function (node, message) {\n this._errors.push(new I18nError(/** @type {?} */ ((node.sourceSpan)), message));\n }\n return\n XmlToI18n;\n}());\n\n/**\n * @param {?} tag\n * @return {?}\n */\nfunction getCtypeForTag(tag) {\n switch

```

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(tag.toLowerCase()) {\n case 'br':\n return 'lb';\n case 'img':\n return 'image';\n default:\n return \"x-\" + tag;\n }\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * \n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n * \n\n _VERSION$1 = '2.0';\n _XMLNS$1 = 'urn:oasis:names:tc:xliff:document:2.0';\n\n// TODO(vicb): make this a param (s/_/-/)\n _DEFAULT_SOURCE_LANG$1 = 'en';\n _PLACEHOLDER_TAG$1 = 'ph';\n _PLACEHOLDER_SPANNING_TAG = 'pc';\n _XLIFF_TAG = 'xliff';\n _SOURCE_TAG$1 = 'source';\n _TARGET_TAG$1 = 'target';\n _UNIT_TAG$1 = 'unit';\n\n Xliff2 = /** @class */ (function (_super) {\n __extends(Xliff2, _super);\n function Xliff2() {\n return _super !== null && _super.apply(this, arguments) || this;\n }\n\n /**\n * @param {?} messages\n * @param {?} locale\n * @return {?} \n *\n Xliff2.prototype.write = /**\n * @param {?} messages\n * @param {?} locale\n * @return {?} \n *\n function (messages, locale) {\n var /** @type {?} */ visitor = new _WriteVisitor$1();\n var /** @type {?} */ units = [];\n messages.forEach(function (message) {\n var /** @type {?} */ unit = new Tag(_UNIT_TAG$1, { id: message.id });\n var /** @type {?} */ notes = new Tag('notes');\n if (message.description || message.meaning) {\n if (message.description) {\n notes.children.push(new CR(8), new Tag('note', { category: 'description' }, [new Text$2(message.description)]));\n }\n if (message.meaning) {\n notes.children.push(new CR(8), new Tag('note', { category: 'meaning' }, [new Text$2(message.meaning)]));\n }\n }\n message.sources.forEach(function (source) {\n notes.children.push(new CR(8), new Tag('note', { category: 'location' }, [new Text$2(source.filePath + \"\": \"\" + source.startLine + (source.endLine !== source.startLine ? \": \" + source.endLine : \"\"))\n));\n });\n notes.children.push(new CR(6));\n unit.children.push(new CR(6), notes);\n var /** @type {?} */ segment = new Tag('segment');\n segment.children.push(new CR(8), new Tag(_SOURCE_TAG$1, {}, visitor.serialize(message.nodes), new CR(6));\n unit.children.push(new CR(6), segment, new CR(4));\n units.push(new CR(4), unit);\n });\n var /** @type {?} */ file = new Tag('file', { 'original': 'ng.template', id: 'ngi18n' }, units.concat([new CR(2)]));\n var /** @type {?} */ xliff = new Tag(_XLIFF_TAG, { version: _VERSION$1, xmlns: _XMLNS$1, srcLang: locale || _DEFAULT_SOURCE_LANG$1 }, [new CR(2), file, new CR()]);\n return serialize([\n new Declaration({ version: '1.0', encoding: 'UTF-8' }),\n new CR(),\n xliff,\n new CR()\n]);\n }\n\n /**\n * @param {?} content\n * @param {?} url\n * @return {?} \n *\n Xliff2.prototype.load = /**\n * @param {?} content\n * @param {?} url\n * @return {?} \n *\n function (content, url) {\n // xliff to xml nodes\n var /** @type {?} */ xliff2Parser = new Xliff2Parser();\n var _a = xliff2Parser.parse(content, url), locale = _a.locale, msgIdToHtml = _a.msgIdToHtml, errors = _a.errors;\n // xml nodes to i18n nodes\n var /** @type {?} */ i18nNodesByMsgId = {};\n var /** @type {?} */ converter = new XmlToI18n$1();\n Object.keys(msgIdToHtml).forEach(function (msgId) {\n var _a = converter.convert(msgIdToHtml[msgId], url), i18nNodes = _a.i18nNodes, e = _a.errors;\n errors.push.apply(errors, e);\n i18nNodesByMsgId[msgId] = i18nNodes;\n });\n if (errors.length) {\n throw new Error(\"xliff2 parse errors:\\n\" + errors.join(\"\\n\"));\n }\n return { locale: /** @type {?} */ ((locale)), i18nNodesByMsgId: i18nNodesByMsgId };\n }\n\n /**\n * @param {?} message\n * @return {?} \n *\n Xliff2.prototype.digest = /**\n * @param {?} message\n * @return {?} \n *\n function (message) {\n return decimalDigest(message);\n }\n\n return Xliff2;\n})(Serializer);\n\n _WriteVisitor$1 = /** @class */ (function () {\n function _WriteVisitor() {\n }\n\n /**\n * @param {?} text\n * @param {?} context\n * @return {?} \n *\n _WriteVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return {?} \n *\n function (text, context) {\n return [new Text$2(text.value)];\n }\n\n /**\n * @param {?} container\n * @param {?} context\n * @return {?} \n *\n _WriteVisitor.prototype.visitContainer = /**\n * @param {?} container\n * @param {?} context\n * @return {?} \n *\n function (container, context) {\n var _this = this;\n var /** @type {?} */ nodes = [];\n container.children.forEach(function (node) {\n return nodes.push.apply(nodes, node.visit(_this));\n });\n return nodes;\n };\n\n /**\n * @param {?} icu\n * @param {?} context\n * @return {?} \n *\n

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```

_WriteVisitor.prototype.visitIcu = /**\n
 * @param {?} icu\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
function (icu, context) {\n
 var _this = this;\n
 var /** @type {?} */ nodes = [new Text$(\"{" +
 icu.expressionPlaceholder + "\", \" + icu.type + "\", \"");\n
 Object.keys(icu.cases).forEach(function (c) {\n
 nodes.push.apply(nodes, [new Text$(c + \" \").concat(icu.cases[c].visit(_this), [new Text$(\" \")]);\n
 });\n
 nodes.push(new Text$(\"}));\n
 return nodes;\n
 });\n
/**\n
 * @param {?} ph\n
 * @param {?=}
context\n
 * @return {?}\n
 */\n
_WriteVisitor.prototype.visitTagPlaceholder = /**\n
 * @param {?} ph\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
function (ph, context) {\n
 var _this = this;\n
 var /**
@type {?} */ type = getTypeForTag(ph.tag);\n
 if (ph.isVoid) {\n
 var /** @type {?} */ tagPh = new
Tag(_PLACEHOLDER_TAG$1, {\n
 id: (this._nextPlaceholderId++).toString(),\n
 equiv:
ph.startName,\n
 type: type,\n
 disp: \"<\" + ph.tag + \"/>\",\n
 });\n
 return [tagPh];\n
 }\n
 var /** @type {?} */ tagPc = new Tag(_PLACEHOLDER_SPANNING_TAG, {\n
 id:
(this._nextPlaceholderId++).toString(),\n
 equivStart: ph.startName,\n
 equivEnd: ph.closeName,\n
 type: type,\n
 dispStart: \"<\" + ph.tag + \">\",\n
 dispEnd: \"<\" + ph.tag + \">\",\n
 });\n
 var
/** @type {?} */ nodes = [].concat.apply([], ph.children.map(function (node) { return node.visit(_this); }));\n
 if (
nodes.length) {\n
 nodes.forEach(function (node) { return tagPc.children.push(node); });\n
 }\n
 else
{\n
 tagPc.children.push(new Text$(\"));\n
 }\n
 return [tagPc];\n
 });\n
/**\n
 * @param {?} ph\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
_WriteVisitor.prototype.visitPlaceholder = /**\n
 *
@param {?} ph\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
function (ph, context) {\n
 var /**
@type {?} */ idStr = (this._nextPlaceholderId++).toString();\n
 return [new Tag(_PLACEHOLDER_TAG$1,
{\n
 id: idStr,\n
 equiv: ph.name,\n
 disp: \"{\" + ph.value + \"}\",\n
 });\n
 });\n
/**\n
 * @param {?} ph\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
_WriteVisitor.prototype.visitIcuPlaceholder = /**\n
 * @param {?} ph\n
 * @param {?=} context\n
 * @return
{?}\n
 */\n
function (ph, context) {\n
 var /** @type {?} */ cases =
Object.keys(ph.value.cases).map(function (value) { return value + ' ...'; }).join('');\n
 var /** @type {?} */
idStr = (this._nextPlaceholderId++).toString();\n
 return [new Tag(_PLACEHOLDER_TAG$1, { id: idStr,
equiv: ph.name, disp: \"{\" + ph.value.expression + "\", \" + ph.value.type + "\", \" + cases + \"}\"});\n
 });\n
/**\n
 * @param {?} nodes\n
 * @return {?}\n
 */\n
_WriteVisitor.prototype.serialize = /**\n
 * @param {?}
nodes\n
 * @return {?}\n
 */\n
function (nodes) {\n
 var _this = this;\n
 this._nextPlaceholderId = 0;\n
 return [].concat.apply([], nodes.map(function (node) { return node.visit(_this); }));\n
 });\n
return
_WriteVisitor;\n
})();\n
var Xliff2Parser = /** @class */ (function () {\n
 function Xliff2Parser() {\n
 this._locale
= null;\n
 }\n
 /**\n
 * @param {?} xlift\n
 * @param {?} url\n
 * @return {?}\n
 */\n
Xliff2Parser.prototype.parse = /**\n
 * @param {?} xlift\n
 * @param {?} url\n
 * @return {?}\n
 */\n
function (xliff, url) {\n
 this._unitMlString = null;\n
 this._msgIdToHtml = {};\n
 var /** @type {?} */
xml = new XmlParser().parse(xlift, url, false);\n
 this._errors = xml.errors;\n
 visitAll(this, xml.rootNodes,
null);\n
 return {\n
 msgIdToHtml: this._msgIdToHtml,\n
 errors: this._errors,\n
 locale:
this._locale,\n
 };
};\n
/**\n
 * @param {?} element\n
 * @param {?} context\n
 * @return {?}\n
 */\n
Xliff2Parser.prototype.visitElement = /**\n
 * @param {?} element\n
 * @param {?} context\n
 *
@return {?}\n
 */\n
function (element, context) {\n
 switch (element.name) {\n
 case
_UNIT_TAG$1:\n
 this._unitMlString = null;\n
 var /** @type {?} */ idAttr =
element.attrs.find(function (attr) { return attr.name === 'id'; });\n
 if (!idAttr) {\n
 this._addError(element, \"<\" + _UNIT_TAG$1 + \"> misses the \"id\" attribute\");\n
 }\n
 else
{\n
 var /** @type {?} */ id = idAttr.value;\n
 if (this._msgIdToHtml.hasOwnProperty(id))
{\n
 this._addError(element, \"Duplicated translations for msg \" + id);\n
 }\n
 }\n
 else {\n
 visitAll(this, element.children, null);\n
 if (typeof this._unitMlString ===
'string') {\n
 this._msgIdToHtml[id] = this._unitMlString;\n
 }\n
 else {\n
 this._addError(element, \"Message \" + id + \" misses a translation\");\n
 }\n
 }\n
 }\n
 break;\n
 case _SOURCE_TAG$1:\n
 // ignore source message\n
 break;\n
 case _TARGET_TAG$1:\n
 var /** @type {?} */ innerTextStart = /** @type {?} */

```

```

((element.startSourceSpan)).end.offset;\n var /** @type {?} */ innerTextEnd = /** @type {?} */\n
((element.endSourceSpan)).start.offset;\n var /** @type {?} */ content = /** @type {?} */\n
((element.startSourceSpan)).start.file.content;\n var /** @type {?} */ innerText =\n
content.slice(innerTextStart, innerTextEnd);\n this._unitMIString = innerText;\n break;\n
case _XLIFF_TAG:\n var /** @type {?} */ localeAttr = element.attrs.find(function (attr) { return\n
attr.name === 'trgLang'; });\n if (localeAttr) {\n this._locale = localeAttr.value;\n }\n
 var /** @type {?} */ versionAttr = element.attrs.find(function (attr) { return attr.name === 'version'; });\n
 if (versionAttr) {\n var /** @type {?} */ version = versionAttr.value;\n if (version !==\n
'2.0') {\n this._addError(element, \"The XLIFF file version \" + version + \" is not compatible with\n
XLIFF 2.0 serializer\");\n }\n else {\n visitAll(this, element.children, null);\n
 }\n }\n break;\n default:\n visitAll(this, element.children, null);\n
}\n };\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n
Xliff2Parser.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return\n
{?}\n */\n function (attribute, context) {;\n /**\n * @param {?} text\n * @param {?} context\n *\n
@return {?}\n */\n Xliff2Parser.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n\n
* @return {?}\n */\n function (text, context) {;\n /**\n * @param {?} comment\n * @param {?} context\n\n
* @return {?}\n */\n Xliff2Parser.prototype.visitComment = /**\n * @param {?} comment\n\n
* @param {?} context\n * @return {?}\n */\n function (comment, context) {;\n /**\n * @param {?} expansion\n\n
* @param {?} context\n * @return {?}\n */\n Xliff2Parser.prototype.visitExpansion = /**\n\n
* @param {?} expansion\n * @param {?} context\n * @return {?}\n */\n function (expansion, context) {\n
};\n /**\n * @param {?} expansionCase\n * @param {?} context\n * @return {?}\n */\n
Xliff2Parser.prototype.visitExpansionCase = /**\n * @param {?} expansionCase\n * @param {?} context\n\n
* @return {?}\n */\n function (expansionCase, context) {;\n /**\n * @param {?} node\n * @param {?} message\n\n
* @return {?}\n */\n Xliff2Parser.prototype._addError = /**\n * @param {?} node\n *\n
@param {?} message\n * @return {?}\n */\n function (node, message) {\n this._errors.push(new\n
I18nError(node.sourceSpan, message));\n };\n return Xliff2Parser;\n
})();\nvar XmlToI18n$1 = /** @class */\n
(function () {\n function XmlToI18n() {\n }\n /**\n * @param {?} message\n * @param {?} url\n *\n
@return {?}\n */\n XmlToI18n.prototype.convert = /**\n * @param {?} message\n * @param {?} url\n\n
* @return {?}\n */\n function (message, url) {\n var /** @type {?} */ xmlIcu = new\n
XmlParser().parse(message, url, true);\n this._errors = xmlIcu.errors;\n var /** @type {?} */ i18nNodes =\n
this._errors.length > 0 || xmlIcu.rootNodes.length === 0 ?\n [] : [].concat.apply([], visitAll(this,\n
xmlIcu.rootNodes));\n return {\n i18nNodes: i18nNodes,\n errors: this._errors,\n };\n };\n /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n
 XmlToI18n.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n\n
*/\n function (text, context) { return new Text$1(text.value, text.sourceSpan); };\n /**\n * @param {?} el\n\n
* @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitElement = /**\n * @param {?} el\n\n
* @param {?} context\n * @return {?}\n */\n function (el, context) {\n var _this = this;\n
 switch (el.name) {\n case _PLACEHOLDER_TAG$1:\n var /** @type {?} */ nameAttr =\n
el.attrs.find(function (attr) { return attr.name === 'equiv'; });\n if (nameAttr) {\n return [new\n
Placeholder(", nameAttr.value, el.sourceSpan)];\n }\n this._addError(el, \"<\" +\n
_PLACEHOLDER_TAG$1 + \"> misses the \"\"equiv\"\" attribute);\n break;\n case\n
_PLACEHOLDER_SPANNING_TAG:\n var /** @type {?} */ startAttr = el.attrs.find(function (attr) {\n
return attr.name === 'equivStart'; });\n var /** @type {?} */ endAttr = el.attrs.find(function (attr) {\n
return attr.name === 'equivEnd'; });\n if (!startAttr) {\n this._addError(el, \"<\" +\n
_PLACEHOLDER_TAG$1 + \"> misses the \"\"equivStart\"\" attribute);\n }\n else if (!endAttr)\n
{\n this._addError(el, \"<\" + _PLACEHOLDER_TAG$1 + \"> misses the \"\"equivEnd\"\" attribute);\n
}\n }\n else {\n var /** @type {?} */ startId = startAttr.value;\n var /** @type\n
{?} */ endId = endAttr.value;\n var /** @type {?} */ nodes = [];\n return

```

```

nodes.concat.apply(nodes, [new Placeholder("", startId, el.sourceSpan)].concat(el.children.map(function (node) {
return node.visit(_this, null); })), [new Placeholder("", endId, el.sourceSpan)]));\n }\n break;\n
default:\n this._addError(el, "Unexpected tag");\n }\n return null;\n });\n /**\n * @param
{?} icu\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitExpansion = /**\n *
@param {?} icu\n * @param {?} context\n * @return {?}\n */\n function (icu, context) {\n var /**
@type {?} */ caseMap = {};\n visitAll(this, icu.cases).forEach(function (c) {\n caseMap[c.value] = new
Container(c.nodes, icu.sourceSpan);\n });\n return new Icu(icu.switchValue, icu.type, caseMap,
icu.sourceSpan);\n });\n /**\n * @param {?} icuCase\n * @param {?} context\n * @return {?}\n */\n
XmlToI18n.prototype.visitExpansionCase = /**\n * @param {?} icuCase\n * @param {?} context\n *
@return {?}\n */\n function (icuCase, context) {\n return {\n value: icuCase.value,\n nodes:
[].concat.apply([], visitAll(this, icuCase.expression)),\n };\n });\n /**\n * @param {?} comment\n *
@param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitComment = /**\n * @param {?}
comment\n * @param {?} context\n * @return {?}\n */\n function (comment, context) {\n };
 /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n XmlToI18n.prototype.visitAttribute
= /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n function (attribute,
context) {\n };
 /**\n * @param {?} node\n * @param {?} message\n * @return {?}\n */\n
XmlToI18n.prototype._addError = /**\n * @param {?} node\n * @param {?} message\n * @return {?}\n
*/\n function (node, message) {\n this._errors.push(new I18nError(node.sourceSpan, message));\n };
return XmlToI18n;\n})();\n /**\n * @param {?} tag\n * @return {?}\n */\n function getTypeForTag(tag) {\n switch
(tag.toLowerCase()) {\n case 'br':\n case 'b':\n case 'i':\n case 'u':\n return 'fmt';\n case
'img':\n return 'image';\n case 'a':\n return 'link';\n default:\n return 'other';\n
 }\n }\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n
 @license\n Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n nvar _MESSAGES_TAG =
'messagebundle';\n nvar _MESSAGE_TAG = 'msg';\n nvar _PLACEHOLDER_TAG$2 = 'ph';\n nvar _EXEMPLE_TAG
= 'ex';\n nvar _SOURCE_TAG$2 = 'source';\n nvar _DOCTYPE = '<!ELEMENT messagebundle
(msg)*>';\n nvar _doctype = '<!ELEMENT msg
(#PCDATA|ph|source)*>';\n nvar _doctype2 = '<!ELEMENT msg seq CDATA
#IMPLIED>';\n nvar _doctype3 = '<!ELEMENT msg name CDATA #IMPLIED>';\n nvar _doctype4 = '<!ELEMENT msg desc CDATA
#IMPLIED>';\n nvar _doctype5 = '<!ELEMENT msg meaning CDATA #IMPLIED>';\n nvar _doctype6 = '<!ELEMENT msg obsolete (obsolete)
#IMPLIED>';\n nvar _doctype7 = '<!ELEMENT msg xml:space (default|preserve) \\'default\''>';\n nvar _doctype8 = '<!ELEMENT msg is_hidden CDATA
#IMPLIED>';\n nvar _doctype9 = '<!ELEMENT source (#PCDATA)>';\n nvar _doctype10 = '<!ELEMENT ph (#PCDATA|ex)*>';\n nvar _doctype11 = '<!ELEMENT ph
name CDATA #REQUIRED>';\n nvar _doctype12 = '<!ELEMENT ex (#PCDATA)>';\n nvar Xmb = /** @class */ (function (_super)
{\n __extends(Xmb, _super);\n function Xmb() {\n return _super !== null && _super.apply(this, arguments)
|| this;\n }\n /**\n * @param {?} messages\n * @param {?} locale\n * @return {?}\n */\n
Xmb.prototype.write = /**\n * @param {?} messages\n * @param {?} locale\n * @return {?}\n */\n
 function (messages, locale) {\n var /** @type {?} */ exampleVisitor = new ExampleVisitor();\n var /**
@type {?} */ visitor = new _Visitor$2();\n var /** @type {?} */ rootNode = new Tag(_MESSAGES_TAG);\n messages.forEach(function (message) {\n var /** @type {?} */ attrs = { id: message.id };
 if
 (message.description) {\n attrs['desc'] = message.description;\n }\n if (message.meaning) {\n
 attrs['meaning'] = message.meaning;\n }\n var /** @type {?} */ sourceTags = [];\n message.sources.forEach(function (source) {\n
 sourceTags.push(new Tag(_SOURCE_TAG$2, {}, [\n new Text$2(source.filePath + \':\' + source.startLine + (source.endLine !== source.startLine ? ',' +
source.endLine : ''))\n]));\n });\n rootNode.children.push(new CR(2), new
Tag(_MESSAGE_TAG, attrs, sourceTags.concat(visitor.serialize(message.nodes)));\n });\n rootNode.children.push(new CR());\n return serialize([\n new Declaration({ version: '1.0', encoding:
'UTF-8' }),\n new CR(),\n new Doctype(_MESSAGES_TAG, _DOCTYPE),\n new CR(),\n exampleVisitor.addDefaultExamples(rootNode),\n new CR(),\n]);\n }\n });\n /**\n * @param {?}

```



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content\n * @param {?} url\n * @return {?}\n */\n Xmb.prototype.load = /**\n * @param {?} content\n * @param {?} url\n * @return {?}\n */\n function (content, url) {\n throw new Error("Unsupported");\n };\n /**\n * @param {?} message\n * @return {?}\n */\n Xmb.prototype.digest = /**\n * @param {?} message\n * @return {?}\n */\n function (message) { return digest$1(message); };\n /**\n * @param {?} message\n * @return {?}\n */\n Xmb.prototype.createNameMapper = /**\n * @param {?} message\n * @return {?}\n */\n function (message) {\n return new SimplePlaceholderMapper(message, toPublicName);\n };\n return Xmb;\n})(Serializer);\nvar _Visitor$2 = /** @class */ (function () {\n function _Visitor() {\n }\n /**\n * @param {?} text\n * @param {?=} context\n * @return {?}\n */\n _Visitor.prototype.visitText = /**\n * @param {?} text\n * @param {?=} context\n * @return {?}\n */\n function (text, context) { return [new Text$2(text.value)]; };\n /**\n * @param {?} container\n * @param {?} context\n * @return {?}\n */\n _Visitor.prototype.visitContainer = /**\n * @param {?} container\n * @param {?} context\n * @return {?}\n */\n function (container, context) {\n var _this = this;\n var /** @type {?} */ nodes = [];\n container.children.forEach(function (node) { return nodes.push.apply(nodes, node.visit(_this)); });\n return nodes;\n };\n /**\n * @param {?} icu\n * @param {?=} context\n * @return {?}\n */\n _Visitor.prototype.visitIcu = /**\n * @param {?} icu\n * @param {?=} context\n * @return {?}\n */\n function (icu, context) {\n var _this = this;\n var /** @type {?} */ nodes = [new Text$2("\\{" + icu.expressionPlaceholder + "\\", "\\{" + icu.type + "\\", "\\}");\n Object.keys(icu.cases).forEach(function (c) {\n nodes.push.apply(nodes, [new Text$2(c + "\\{" + icu.type + "\\}").concat(icu.cases[c].visit(_this), [new Text$2("\\}"))]);\n });\n nodes.push(new Text$2("\\}")); \n return nodes;\n };\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n _Visitor.prototype.visitTagPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n var /** @type {?} */ startEx = new Tag(_EXEMPLE_TAG, {}, [new Text$2("<" + ph.tag + ">")]);\n var /** @type {?} */ startTagPh = new Tag(_PLACEHOLDER_TAG$2, { name: ph.startName }, [startEx]);\n if (ph.isVoid) {\n // void tags have no children nor closing tags\n return [startTagPh];\n }\n var /** @type {?} */ closeEx = new Tag(_EXEMPLE_TAG, {}, [new Text$2("<" + ph.tag + ">")]);\n var /** @type {?} */ closeTagPh = new Tag(_PLACEHOLDER_TAG$2, { name: ph.closeName }, [closeEx]);\n return [startTagPh].concat(this.serialize(ph.children), [closeTagPh]);\n };\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n _Visitor.prototype.visitPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n var /** @type {?} */ exTag = new Tag(_EXEMPLE_TAG, {}, [new Text$2("\\{" + ph.value + "\\}"))];\n return [new Tag(_PLACEHOLDER_TAG$2, { name: ph.name }, [exTag]);\n };\n /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n _Visitor.prototype.visitIcuPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n var /** @type {?} */ exTag = new Tag(_EXEMPLE_TAG, {}, [\n new Text$2("\\{" + ph.value.expression + "\\", "\\{" + ph.value.type + "\\", "\\} + Object.keys(ph.value.cases).map(function (value) { return value + '...'; }).join(' ' + '\\}"))\n]);\n return [new Tag(_PLACEHOLDER_TAG$2, { name: ph.name }, [exTag]);\n };\n /**\n * @param {?} nodes\n * @return {?}\n */\n _Visitor.prototype.serialize = /**\n * @param {?} nodes\n * @return {?}\n */\n function (nodes) {\n var _this = this;\n return [].concat.apply([], nodes.map(function (node) { return node.visit(_this); }));\n };\n return _Visitor;\n})();\n/**\n * @param {?} message\n * @return {?}\n */\nfunction digest$1(message) {\n return decimalDigest(message);\n}\nvar ExampleVisitor = /** @class */ (function () {\n function ExampleVisitor() {\n }\n /**\n * @param {?} node\n * @return {?}\n */\n ExampleVisitor.prototype.addDefaultExamples = /**\n * @param {?} node\n * @return {?}\n */\n function (node) {\n node.visit(this);\n return node;\n };\n /**\n * @param {?} tag\n * @return {?}\n */\n ExampleVisitor.prototype.visitTag = /**\n * @param {?} tag\n * @return {?}\n */\n function (tag) {\n var _this = this;\n if (tag.name === _PLACEHOLDER_TAG$2) {\n if (!tag.children || tag.children.length === 0) {\n var /** @type {?} */ exText = new Text$2(tag.attrs['name'] || '...');\n tag.children = [new Tag(_EXEMPLE_TAG, {}, [exText]);\n }\n }\n else if (tag.children) {\n tag.children.forEach(function (node) { return node.visit(_this); });\n }\n };\n /**\n
```

```

* @param {?} text\n * @return {?}\n *\n ExampleVisitor.prototype.visitText = /**\n * @param {?}
text\n * @return {?}\n *\n function (text) {;\n /**\n * @param {?} decl\n * @return {?}\n *\n
ExampleVisitor.prototype.visitDeclaration = /**\n * @param {?} decl\n * @return {?}\n *\n function
(decl) {;\n /**\n * @param {?} doctype\n * @return {?}\n *\n ExampleVisitor.prototype.visitDoctype
= /**\n * @param {?} doctype\n * @return {?}\n *\n function (doctype) {;\n return
ExampleVisitor;\n})();\n/**\n * @param {?} internalName\n * @return {?}\n *\nfunction
toPublicName(internalName) {\n return internalName.toUpperCase().replace(/[^A-Z0-9_]/g, '_);\n}\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n *\nvar _TRANSLATIONS_TAG =
'translationbundle';\nvar _TRANSLATION_TAG = 'translation';\nvar _PLACEHOLDER_TAG$3 = 'ph';\nvar Xtb =
/** @class */ (function (_super) {\n __extends(Xtb, _super);\n function Xtb() {\n return _super !== null &&
_super.apply(this, arguments) || this;\n }\n /**\n * @param {?} messages\n * @param {?} locale\n *
@return {?}\n *\n Xtb.prototype.write = /**\n * @param {?} messages\n * @param {?} locale\n *
@return {?}\n *\n function (messages, locale) { throw new Error('Unsupported');;\n /**\n * @param {?}
content\n * @param {?} url\n * @return {?}\n *\n Xtb.prototype.load = /**\n * @param {?} content\n
* @param {?} url\n * @return {?}\n *\n function (content, url) {\n // xtb to xml nodes\n var /**
@type {?} */ xtbParser = new XtbParser();\n var _a = xtbParser.parse(content, url), locale = _a.locale,
msgIdToHtml = _a.msgIdToHtml, errors = _a.errors;\n // xml nodes to i18n nodes\n var /** @type {?} */
i18nNodesByMsgId = {};\n var /** @type {?} */ converter = new XmlToI18n$2();\n // Because we should
be able to load xtb files that rely on features not supported by angular,\n // we need to delay the conversion of
html to i18n nodes so that non angular messages are not\n // converted\n
Object.keys(msgIdToHtml).forEach(function (msgId) {\n var /** @type {?} */ valueFn = function () {\n
var _a = converter.convert(msgIdToHtml[msgId], url), i18nNodes = _a.i18nNodes, errors = _a.errors;\n
if (errors.length) {\n throw new Error("\ntxb parse errors:\n" + errors.join("\n"));;\n }\n
return i18nNodes;\n });\n createLazyProperty(i18nNodesByMsgId, msgId, valueFn);\n });\n if
(errors.length) {\n throw new Error("\ntxb parse errors:\n" + errors.join("\n"));;\n return { locale:
/** @type {?} */ ((locale)), i18nNodesByMsgId: i18nNodesByMsgId };;\n });\n /**\n * @param {?}
message\n * @return {?}\n *\n Xtb.prototype.digest = /**\n * @param {?} message\n * @return {?}\n
*\n function (message) { return digest$1(message);;\n /**\n * @param {?} message\n * @return {?}\n
*\n Xtb.prototype.createNameMapper = /**\n * @param {?} message\n * @return {?}\n *\n function
(message) {\n return new SimplePlaceholderMapper(message, toPublicName);\n };;\n return
Xtb;\n})(Serializer);\n/**\n * @param {?} messages\n * @param {?} id\n * @param {?} valueFn\n * @return
{?}\n *\nfunction createLazyProperty(messages, id, valueFn) {\n Object.defineProperty(messages, id, {\n
configurable: true,\n enumerable: true,\n get: function () {\n var /** @type {?} */ value =
valueFn();;\n Object.defineProperty(messages, id, { enumerable: true, value: value });;\n return value;\n
},\n set: function (_) { throw new Error('Could not overwrite an XTB translation');;\n });;\n}\n\nvar
XtbParser = /** @class */ (function () {\n function XtbParser() {\n this._locale = null;\n }\n /**\n *
@param {?} xtb\n * @param {?} url\n * @return {?}\n *\n XtbParser.prototype.parse = /**\n *
@param {?} xtb\n * @param {?} url\n * @return {?}\n *\n function (xtb, url) {\n this._bundleDepth
= 0;\n this._msgIdToHtml = {};\n // We can not parse the ICU messages at this point as some messages
might not originate\n // from Angular that could not be lex'd.\n var /** @type {?} */ xml = new
XmlParser().parse(xtb, url, false);\n this._errors = xml.errors;\n visitAll(this, xml.rootNodes);\n return
{\n msgIdToHtml: this._msgIdToHtml,\n errors: this._errors,\n locale: this._locale,\n };\n
};;\n /**\n * @param {?} element\n * @param {?} context\n * @return {?}\n *\n
XtbParser.prototype.visitElement = /**\n * @param {?} element\n * @param {?} context\n * @return {?}\n
*\n function (element, context) {\n switch (element.name) {\n case _TRANSLATIONS_TAG:\n
this._bundleDepth++;\n if (this._bundleDepth > 1) {\n this._addError(element, "\n" +

```

```

_TRANSLATIONS_TAG + \> elements can not be nested\");\n }\n var /** @type {?} */\n langAttr = element.attrs.find(function (attr) { return attr.name === 'lang'; });\n if (langAttr) {\n this._locale = langAttr.value;\n }\n visitAll(this, element.children, null);\n this._bundleDepth--;\n break;\n case _TRANSLATION_TAG:\n var /** @type {?} */\n idAttr = element.attrs.find(function (attr) { return attr.name === 'id'; });\n if (!idAttr) {\n this._addError(element, \<" + _TRANSLATION_TAG + \> misses the \\\\"id\\\" attribute");\n }\n else {\n var /** @type {?} */ id = idAttr.value;\n if\n (this._msgIdToHtml.hasOwnProperty(id)) {\n this._addError(element, \\"Duplicated translations for\n msg \\" + id);\n }\n else {\n var /** @type {?} */ innerTextStart = /** @type\n {?} */ ((element.startSourceSpan).end.offset;\n var /** @type {?} */ innerTextEnd = /** @type {?} */\n * ((element.endSourceSpan).start.offset;\n var /** @type {?} */ content = /** @type {?} */\n ((element.startSourceSpan).start.file.content;\n var /** @type {?} */ innerText = content.slice(/**\n @type {?} */ ((innerTextStart), /** @type {?} */ ((innerTextEnd));\n this._msgIdToHtml[id] =\n innerText;\n }\n }\n break;\n default:\n this._addError(element,\n 'Unexpected tag');\n }\n }\n /**\n * @param {?} attribute\n * @param {?} context\n * @return\n {?}\n */\n XtbParser.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return\n {?}\n */\n function (attribute, context) { }\n /**\n * @param {?} text\n * @param {?} context\n * @return\n {?}\n */\n XtbParser.prototype.visitText = /**\n * @param {?} text\n * @param\n {?}\n context\n * @return\n {?}\n */\n function (text, context) { }\n /**\n * @param {?} comment\n * @param {?} context\n * @return\n {?}\n */\n XtbParser.prototype.visitComment = /**\n * @param {?} comment\n * @param {?} context\n * @return\n {?}\n */\n function (comment, context) { }\n /**\n * @param {?} expansion\n * @param {?} context\n * @return\n {?}\n */\n XtbParser.prototype.visitExpansion = /**\n * @param {?} expansion\n * @param {?} context\n * @return\n {?}\n */\n function (expansion, context) { }\n /**\n * @param {?} expansionCase\n * @param\n {?}\n context\n * @return\n {?}\n */\n XtbParser.prototype.visitExpansionCase = /**\n * @param\n {?}\n expansionCase\n * @param\n {?}\n context\n * @return\n {?}\n */\n function (expansionCase, context) { }\n /**\n * @param {?} node\n * @param {?} message\n * @return\n {?}\n */\n XtbParser.prototype._addError = /**\n * @param\n {?} node\n * @param\n {?} message\n * @return\n {?}\n */\n function (node, message) {\n this._errors.push(new I18nError(/** @type {?} */ ((node.sourceSpan),\n message));\n });\n return XtbParser;\n });\n var XmlToI18n$2 = /** @class */ (function () {\n function\n XmlToI18n() {\n }\n /**\n * @param\n {?} message\n * @param\n {?} url\n * @return\n {?}\n */\n XmlToI18n.prototype.convert = /**\n * @param\n {?} message\n * @param\n {?} url\n * @return\n {?}\n */\n function (message, url) {\n var /** @type {?} */ xmlIcu = new XmlParser().parse(message, url, true);\n this._errors = xmlIcu.errors;\n var /** @type {?} */ i18nNodes = this._errors.length > 0 ||\n xmlIcu.rootNodes.length == 0 ?\n [] : visitAll(this, xmlIcu.rootNodes);\n return {\n i18nNodes: i18nNodes,\n errors: this._errors,\n };\n };\n /**\n * @param\n {?} text\n * @param\n {?} context\n * @return\n {?}\n */\n XmlToI18n.prototype.visitText = /**\n * @param\n {?} text\n * @param\n {?} context\n * @return\n {?}\n */\n function (text, context) {\n return new Text$1(text.value, /**\n @type\n {?} */ ((text.sourceSpan)));;\n };\n /**\n * @param\n {?} icu\n * @param\n {?} context\n * @return\n {?}\n */\n XmlToI18n.prototype.visitExpansion = /**\n * @param\n {?} icu\n * @param\n {?} context\n * @return\n {?}\n */\n function (icu, context) {\n var /** @type\n {?} */ caseMap = {};\n visitAll(this,\n icu.cases).forEach(function (c) {\n caseMap[c.value] = new Container(c.nodes, icu.sourceSpan);\n });\n return new Icu(icu.switchValue, icu.type, caseMap, icu.sourceSpan);\n };\n /**\n * @param\n {?} icuCase\n * @param\n {?} context\n * @return\n {?}\n */\n XmlToI18n.prototype.visitExpansionCase = /**\n * @param\n {?} icuCase\n * @param\n {?} context\n * @return\n {?}\n */\n function (icuCase, context) {\n return {\n value: icuCase.value,\n nodes: visitAll(this, icuCase.expression),\n };\n };\n /**\n * @param\n {?} el\n * @param\n {?} context\n * @return\n {?}\n */\n XmlToI18n.prototype.visitElement =\n /**\n * @param\n {?} el\n * @param\n {?} context\n * @return\n {?}\n */\n function (el, context) {\n if

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*/\n function (srcMsg) { return this.digest(srcMsg) in this._i18nNodesByMsgId; }\n return
TranslationBundle;\n});\nvar I18nToHtmlVisitor = /** @class */ (function () {\n function
I18nToHtmlVisitor(_i18nNodesByMsgId, _locale, _digest, _mapperFactory, _missingTranslationStrategy,
_console) {\n if (_i18nNodesByMsgId === void 0) { _i18nNodesByMsgId = {}; }\n this._i18nNodesByMsgId = _i18nNodesByMsgId;\n this._locale = _locale;\n this._digest = _digest;\n this._mapperFactory = _mapperFactory;\n this._missingTranslationStrategy = _missingTranslationStrategy;\n this._console = _console;\n this._contextStack = [];\n this._errors = [];\n }\n /**\n * @param {?}
srcMsg\n * @return {?}\n */\n I18nToHtmlVisitor.prototype.convert = /**\n * @param {?} srcMsg\n *
@return {?}\n */\n function (srcMsg) {\n this._contextStack.length = 0;\n this._errors.length = 0;\n // i18n to text\n var /** @type {?} */ text = this._convertToText(srcMsg);\n // text to html\n var /**
@type {?} */ url = srcMsg.nodes[0].sourceSpan.start.file.url;\n var /** @type {?} */ html = new
HtmlParser().parse(text, url, true);\n return {\n nodes: html.rootNodes,\n errors:
this._errors.concat(html.errors),\n };\n };\n /**\n * @param {?} text\n * @param {?=} context\n *
@return {?}\n */\n I18nToHtmlVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?=}
context\n * @return {?}\n */\n function (text, context) { return text.value; };\n /**\n * @param {?}
container\n * @param {?=} context\n * @return {?}\n */\n I18nToHtmlVisitor.prototype.visitContainer =
/**\n * @param {?} container\n * @param {?=} context\n * @return {?}\n */\n function (container,
context) {\n var _this = this;\n return container.children.map(function (n) { return n.visit(_this); }).join("");\n };\n /**\n * @param {?} icu\n * @param {?=} context\n * @return {?}\n */\n I18nToHtmlVisitor.prototype.visitIcu = /**\n * @param {?} icu\n * @param {?=} context\n * @return
{?}\n */\n function (icu, context) {\n var _this = this;\n var /** @type {?} */ cases =
Object.keys(icu.cases).map(function (k) { return k + "|" + icu.cases[k].visit(_this) + "|"; });\n //
TODO(vicb): Once all format switch to using expression placeholders\n // we should throw when the
placeholder is not in the source message\n var /** @type {?} */ exp =
this._srcMsg.placeholders.hasOwnProperty(icu.expression) ?\n this._srcMsg.placeholders[icu.expression] :\n icu.expression;\n return "{" + exp + "|", "|" + icu.type + "|", "|" + cases.join(' ') + "|";\n };\n /**\n *
@param {?} ph\n * @param {?=} context\n * @return {?}\n */\n I18nToHtmlVisitor.prototype.visitPlaceholder = /**\n * @param {?} ph\n * @param {?=} context\n *
@return {?}\n */\n function (ph, context) {\n var /** @type {?} */ phName = this._mapper(ph.name);\n if (this._srcMsg.placeholders.hasOwnProperty(phName)) {\n return this._srcMsg.placeholders[phName];\n }\n if (this._srcMsg.placeholderToMessage.hasOwnProperty(phName)) {\n return
this._convertToText(this._srcMsg.placeholderToMessage[phName]);\n }\n this._addError(ph, "Unknown
placeholder \"" + ph.name + "\"");\n return ";\n };\n // Loaded message contains only placeholders (vs
tag and icu placeholders).\n // However when a translation can not be found, we need to serialize the source
message\n // which can contain tag placeholders\n /**\n * @param {?} ph\n * @param {?=} context\n *
@return {?}\n */\n I18nToHtmlVisitor.prototype.visitTagPlaceholder = /**\n * @param {?} ph\n *
@param {?=} context\n * @return {?}\n */\n function (ph, context) {\n var _this = this;\n var /**
@type {?} */ tag = "\" + ph.tag;\n var /** @type {?} */ attrs = Object.keys(ph.attrs).map(function (name) {\n
return name + "=" + ph.attrs[name] + "\"";\n }).join('');\n if (ph.isVoid) {\n return "<" + tag + "\"
+ attrs + \"/>";\n }\n var /** @type {?} */ children = ph.children.map(function (c) { return c.visit(_this);
}).join("");\n return "<" + tag + "\" + attrs + \"/>" + children + "<" + tag + "\"";\n };\n // Loaded
message contains only placeholders (vs tag and icu placeholders).\n // However when a translation can not be
found, we need to serialize the source message\n // which can contain tag placeholders\n /**\n * @param {?}
ph\n * @param {?=} context\n * @return {?}\n */\n I18nToHtmlVisitor.prototype.visitIcuPlaceholder =
/**\n * @param {?} ph\n * @param {?=} context\n * @return {?}\n */\n function (ph, context) {\n
// An ICU placeholder references the source message to be serialized\n return
this._convertToText(this._srcMsg.placeholderToMessage[ph.name]);\n };\n /**\n * Convert a source message
to a translated text string:\n * - text nodes are replaced with their translation,\n * - placeholders are replaced

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with their content,\n * - ICU nodes are converted to ICU expressions.\n * @param {?} srcMsg\n * @return\n {?}]\n *^\n I18nToHtmlVisitor.prototype._convertToText = /**\n * Convert a source message to a translated\n text string:\n * - text nodes are replaced with their translation,\n * - placeholders are replaced with their\n content,\n * - ICU nodes are converted to ICU expressions.\n * @param {?} srcMsg\n * @return {?}\n *^\n function (srcMsg) {\n var _this = this;\n var /** @type {?} */ id = this._digest(srcMsg);\n var\n /** @type {?} */ mapper = this._mapperFactory ? this._mapperFactory(srcMsg) : null;\n var /** @type {?} */\n nodes;\n this._contextStack.push({ msg: this._srcMsg, mapper: this._mapper });\n this._srcMsg =\n srcMsg;\n if (this._i18nNodesByMsgId.hasOwnProperty(id)) {\n // When there is a translation use its\n nodes as the source\n // And create a mapper to convert serialized placeholder names to internal names\n nodes = this._i18nNodesByMsgId[id];\n this._mapper = function (name) { return mapper ? /** @type {?} */\n ((mapper.toInternalName(name))) : name; };\n } else {\n // When no translation has been found\n // - report an error / a warning / nothing,\n // - use the nodes from the original message\n // -\n placeholders are already internal and need no mapper\n if (this._missingTranslationStrategy ===\n MissingTranslationStrategy.Error) {\n var /** @type {?} */ ctx = this._locale ? " for locale \"" +\n this._locale + "\" : "; \n this._addError(srcMsg.nodes[0], "Missing translation for message \"" + id +\n "\" + ctx);\n } else if (this._console &&\n this._missingTranslationStrategy ===\n MissingTranslationStrategy.Warning) {\n var /** @type {?} */ ctx = this._locale ? " for locale \"" +\n this._locale + "\" : "; \n this._console.warn("Missing translation for message \"" + id + "\" +\n ctx);\n } \n nodes = srcMsg.nodes;\n this._mapper = function (name) { return name; };\n } \n var /** @type {?} */ text = nodes.map(function (node) { return node.visit(_this); }).join(""); \n var /** @type\n {?} */ context = /** @type {?} */ ((this._contextStack.pop())); \n this._srcMsg = context.msg;\n this._mapper = context.mapper;\n return text;\n };\n /**\n * @param {?} el\n * @param {?} msg\n * @return {?}\n *^\n I18nToHtmlVisitor.prototype._addError = /**\n * @param {?} el\n * @param {?}\n msg\n * @return {?}\n *^\n function (el, msg) {\n this._errors.push(new I18nError(el.sourceSpan,\n msg));\n };\n return I18nToHtmlVisitor;\n});\n\n/**\n * @fileoverview added by tsickle\n * @suppress\n {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n */\n * Use of\n this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n https://angular.io/license\n */\nvar I18NHtmlParser = /** @class */ (function () {\n function\n I18NHtmlParser(_htmlParser, translations, translationsFormat, missingTranslation, console) {\n if\n (missingTranslation === void 0) { missingTranslation = MissingTranslationStrategy.Warning; }\n this._htmlParser = _htmlParser;\n if (translations) {\n var /** @type {?} */ serializer =\n createSerializer(translationsFormat);\n this._translationBundle =\n TranslationBundle.load(translations, 'i18n', serializer, missingTranslation, console);\n } else {\n this._translationBundle =\n new TranslationBundle({}, null, digest, undefined, missingTranslation,\n console);\n } \n } \n /**\n * @param {?} source\n * @param {?} url\n * @param {?}=\n parseExpansionForms\n * @param {?} interpolationConfig\n * @return {?}\n *^\n I18NHtmlParser.prototype.parse = /**\n * @param {?} source\n * @param {?} url\n * @param {?}=\n parseExpansionForms\n * @param {?} interpolationConfig\n * @return {?}\n *^\n function (source, url,\n parseExpansionForms, interpolationConfig) {\n if (parseExpansionForms === void 0) { parseExpansionForms\n = false; }\n if (interpolationConfig === void 0) { interpolationConfig =\n DEFAULT_INTERPOLATION_CONFIG; }\n var /** @type {?} */ parseResult =\n this._htmlParser.parse(source, url, parseExpansionForms, interpolationConfig);\n if (parseResult.errors.length)\n {\n return new ParseTreeResult(parseResult.rootNodes, parseResult.errors);\n } \n return\n mergeTranslations(parseResult.rootNodes, this._translationBundle, interpolationConfig, [], {});\n };\n return\n I18NHtmlParser;\n});\n\n * @param {?} format\n * @return {?}\n */\nfunction createSerializer(format) {\n format = (format || 'xlf').toLowerCase();\n switch (format) {\n case 'xmb':\n return new Xmb();\n case 'xtb':\n return new Xtb();\n case 'xliff2':\n case 'xlf2':\n return new Xliff2();\n case\n 'xliff':\n case 'xlf':\n default:\n return new Xliff();\n } \n}\n\n/**\n * @fileoverview added by

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tsickle\n * @suppress {checkTypes} checked by tsc\n */\n */\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n */\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\nvar STRIP_SRC_FILE_SUFFIXES =
/(\.ts|\.d\.ts|\.js|\.jsx|\.tsx)$/;\nvar GENERATED_FILE = /\nfactory\./;\nvar
JIT_SUMMARY_FILE = /\nsummary\./;\nvar JIT_SUMMARY_NAME = /NgSummary$/;\n */\n * @param
{?} filePath\n * @param {?=} forceSourceFile\n * @return {?}\n */\nfunction ngfactoryFilePath(filePath,
forceSourceFile) {\n if (forceSourceFile === void 0) { forceSourceFile = false; }\n var /** @type {?} */
urlWithSuffix = splitTypescriptSuffix(filePath, forceSourceFile);\n return urlWithSuffix[0] + "\nfactory" +
normalizeGenFileSuffix(urlWithSuffix[1]);\n}\n */\n * @param {?} filePath\n * @return {?}\n */\nfunction
stripGeneratedFileSuffix(filePath) {\n return filePath.replace(GENERATED_FILE, '.');\n}\n */\n * @param {?}
filePath\n * @return {?}\n */\nfunction isGeneratedFile(filePath) {\n return
GENERATED_FILE.test(filePath);\n}\n */\n * @param {?} path\n * @param {?=} forceSourceFile\n * @return
{?}\n */\nfunction splitTypescriptSuffix(path, forceSourceFile) {\n if (forceSourceFile === void 0) {\n
forceSourceFile = false; }\n if (path.endsWith('.d.ts')) {\n return [path.slice(0, -5), forceSourceFile ? '.ts' :
'.d.ts'];\n }\n var /** @type {?} */ lastDot = path.lastIndexOf('.');\n if (lastDot !== -1) {\n return
[path.substring(0, lastDot), path.substring(lastDot)];\n }\n return [path, ''];\n}\n */\n * @param {?}
srcFileSuffix\n * @return {?}\n */\nfunction normalizeGenFileSuffix(srcFileSuffix) {\n return srcFileSuffix ===
'.tsx' ? '.ts' : srcFileSuffix;\n}\n */\n * @param {?} fileName\n * @return {?}\n */\nfunction
summaryFileName(fileName) {\n var /** @type {?} */ fileNameWithoutSuffix =
fileName.replace(STRIP_SRC_FILE_SUFFIXES, '');\n return fileNameWithoutSuffix +
"\nsummary.json";\n}\n */\n * @param {?} fileName\n * @param {?=} forceSourceFile\n * @return {?}\n
*/\nfunction summaryForJitFileName(fileName, forceSourceFile) {\n if (forceSourceFile === void 0) {\n
forceSourceFile = false; }\n var /** @type {?} */ urlWithSuffix =
splitTypescriptSuffix(stripGeneratedFileSuffix(fileName), forceSourceFile);\n return urlWithSuffix[0] +
"\nsummary" + urlWithSuffix[1];\n}\n */\n * @param {?} filePath\n * @return {?}\n */\nfunction
stripSummaryForJitFileSuffix(filePath) {\n return filePath.replace(JIT_SUMMARY_FILE, '.');\n}\n */\n * @param {?}
symbolName\n * @return {?}\n */\nfunction summaryForJitName(symbolName) {\n return
symbolName + "\nNgSummary";\n}\n */\n * @param {?} symbolName\n * @return {?}\n */\nfunction
stripSummaryForJitNameSuffix(symbolName) {\n return symbolName.replace(JIT_SUMMARY_NAME,
'');\n}\nvar LOWERED_SYMBOL = /\u0275\d+;/;\n */\n * @param {?} name\n * @return {?}\n */\nfunction
isLoweredSymbol(name) {\n return LOWERED_SYMBOL.test(name);\n}\n */\n * @param {?} id\n * @return
{?}\n */\nfunction createLoweredSymbol(id) {\n return "\u0275" + id;\n}\n */\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n */\n */\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n */\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\nvar CORE = '@angular/core';\nvar Identifiers = /** @class */
(function () {\n function Identifiers() {\n }\n Identifiers.ANALYZE_FOR_ENTRY_COMPONENTS = {\n
name: 'ANALYZE_FOR_ENTRY_COMPONENTS',\n moduleName: CORE,\n }; \n Identifiers.ElementRef =
{\n name: 'ElementRef',\n moduleName: CORE\n }; \n Identifiers.NgModuleRef = {\n name: 'NgModuleRef',\n
moduleName: CORE\n }; \n Identifiers.ViewContainerRef = {\n name: 'ViewContainerRef',\n moduleName: CORE\n }; \n
 Identifiers.ChangeDetectorRef = {\n name: 'ChangeDetectorRef',\n moduleName: CORE,\n }; \n
 Identifiers.QueryList = {\n name: 'QueryList',\n moduleName: CORE\n }; \n Identifiers.TemplateRef = {\n
name: 'TemplateRef',\n moduleName: CORE\n }; \n Identifiers.CodegenComponentFactoryResolver = {\n name:
'CodegenComponentFactoryResolver',\n moduleName: CORE,\n }; \n
 Identifiers.ComponentFactoryResolver = {\n name: 'ComponentFactoryResolver',\n moduleName:
CORE,\n }; \n Identifiers.ComponentFactory = {\n name: 'ComponentFactory',\n moduleName: CORE\n }; \n
 Identifiers.ComponentRef = {\n name: 'ComponentRef',\n moduleName: CORE\n }; \n Identifiers.NgModuleFactory =
{\n name: 'NgModuleFactory',\n moduleName: CORE\n }; \n Identifiers.createModuleFactory = {\n name: 'cmf',\n
moduleName: CORE,\n }; \n Identifiers.moduleDef = {\n name: 'mod',\n moduleName: CORE,\n }; \n
}());

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value\n * @return {?}\n *\n function (name, value) {\n if (value === void 0) { value = ""; }\n this.attrs.push(name, value && value.toLowerCase() || "");\n }\n /**\n * @param {?} name\n * @return {?}\n *\n * CssSelector.prototype.addClassName = /**\n * @param {?} name\n * @return {?}\n *\n * function (name) { this.classNames.push(name.toLowerCase()); }\n *\n * /**\n * @return {?}\n *\n * CssSelector.prototype.toString = /**\n * @return {?}\n *\n * function () {\n * var /** @type {?} */ res = this.element || "";\n * if (this.classNames) {\n * this.classNames.forEach(function (klass) { return res += "\".\"" + klass; });\n * }\n * if (this.attrs) {\n * for (var /** @type {?} */ i = 0; i < this.attrs.length; i += 2) {\n * var /** @type {?} */ name_1 = this.attrs[i];\n * var /** @type {?} */ value = this.attrs[i + 1];\n * res += "\"[" + name_1 + (value ? '=' + value : '') + \"]\"";\n * }\n * }\n * this.notSelectors.forEach(function (notSelector) { return res += \":not(\" + notSelector + \")\"; });\n * return res;\n * });\n * return\n * CssSelector;\n *());\n */\n * Reads a list of CssSelectors and allows to calculate which ones\n * are contained in a given CssSelector.\n */\n * nvar SelectorMatcher = /** @class */ (function () {\n * function SelectorMatcher() {\n * this._elementMap = new Map();\n * this._elementPartialMap = new Map();\n * this._classMap = new Map();\n * this._classPartialMap = new Map();\n * this._attrValueMap = new Map();\n * this._attrValuePartialMap = new Map();\n * this._listContexts = [];\n * }\n * /**\n * * @param {?} notSelectors\n * * @return {?}\n * *\n * * SelectorMatcher.createNotMatcher = /**\n * * @param {?} notSelectors\n * * @return {?}\n * *\n * * function (notSelectors) {\n * * var /** @type {?} */ notMatcher = new SelectorMatcher();\n * * notMatcher.addSelectable(notSelectors, null);\n * * return notMatcher;\n * * });\n * * /**\n * * @param {?} cssSelectors\n * * @param {?=} callbackCtxt\n * * @return {?}\n * *\n * * SelectorMatcher.prototype.addSelectable = /**\n * * @param {?} cssSelectors\n * * @param {?=} callbackCtxt\n * * @return {?}\n * *\n * * function (cssSelectors, callbackCtxt) {\n * * var /** @type {?} */ listContext = /** @type {?} */ ((null));\n * * if (cssSelectors.length > 1) {\n * * listContext = new SelectorListContext(cssSelectors);\n * * this._listContexts.push(listContext);\n * * }\n * * for (var /** @type {?} */ i = 0; i < cssSelectors.length; i++) {\n * * this._addSelectable(cssSelectors[i], callbackCtxt, listContext);\n * * }\n * * /**\n * * * Add an object that can be found later on by calling `match`.\n * * * @param {?} cssSelector A css selector\n * * * @param {?} callbackCtxt An opaque object that will be given to the callback of the `match` function\n * * * @param {?} listContext\n * * * @return {?}\n * * *\n * * SelectorMatcher.prototype._addSelectable = /**\n * * * Add an object that can be found later on by calling `match`.\n * * * @param {?} cssSelector A css selector\n * * * @param {?} callbackCtxt An opaque object that will be given to the callback of the `match` function\n * * * @param {?} listContext\n * * * @return {?}\n * * *\n * * function (cssSelector, callbackCtxt, listContext) {\n * * var /** @type {?} */ matcher = this;\n * * var /** @type {?} */ element = cssSelector.element;\n * * var /** @type {?} */ classNames = cssSelector.classNames;\n * * var /** @type {?} */ attrs = cssSelector.attrs;\n * * var /** @type {?} */ selectable = new SelectorContext(cssSelector, callbackCtxt, listContext);\n * * if (element) {\n * * var /** @type {?} */ isTerminal = attrs.length === 0 && classNames.length === 0;\n * * if (isTerminal) {\n * * this._addTerminal(matcher._elementMap, element, selectable);\n * * }\n * * else {\n * * matcher = this._addPartial(matcher._elementPartialMap, element);\n * * }\n * * if (classNames) {\n * * for (var /** @type {?} */ i = 0; i < classNames.length; i++) {\n * * var /** @type {?} */ isTerminal = attrs.length === 0 && i === classNames.length - 1;\n * * var /** @type {?} */ className = classNames[i];\n * * if (isTerminal) {\n * * this._addTerminal(matcher._classMap, className, selectable);\n * * }\n * * else {\n * * matcher = this._addPartial(matcher._classPartialMap, className);\n * * }\n * * }\n * * }\n * * if (attrs) {\n * * for (var /** @type {?} */ i = 0; i < attrs.length; i += 2) {\n * * var /** @type {?} */ isTerminal = i === attrs.length - 2;\n * * var /** @type {?} */ name_2 = attrs[i];\n * * var /** @type {?} */ value = attrs[i + 1];\n * * if (isTerminal) {\n * * var /** @type {?} */ terminalMap = matcher._attrValueMap;\n * * var /** @type {?} */ terminalValuesMap = terminalMap.get(name_2);\n * * if (!terminalValuesMap) {\n * * terminalValuesMap = new Map();\n * * terminalMap.set(name_2, terminalValuesMap);\n * * }\n * * this._addTerminal(terminalValuesMap, value, selectable);\n * * }\n * * else {\n * * var /** @type {?} */ partialMap = matcher._attrValuePartialMap;\n *

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var /** @type {?} */ partialValuesMap = partialMap.get(name_2);\n if (!partialValuesMap) {\n
 partialValuesMap = new Map();\n partialMap.set(name_2, partialValuesMap);\n }\n
 matcher = this._addPartial(partialValuesMap, value);\n }\n }\n };\n /**\n
@param {?} map\n * @param {?} name\n * @param {?} selectable\n * @return {?}\n */\n
SelectorMatcher.prototype._addTerminal = /**\n * @param {?} map\n * @param {?} name\n * @param
 {?} selectable\n * @return {?}\n */\n function (map, name, selectable) {\n var /** @type {?} */
terminalList = map.get(name);\n if (!terminalList) {\n terminalList = [];\n map.set(name,
terminalList);\n }\n terminalList.push(selectable);\n };\n /**\n * @param {?} map\n * @param {?}
name\n * @return {?}\n */\n SelectorMatcher.prototype._addPartial = /**\n * @param {?} map\n *
@param {?} name\n * @return {?}\n */\n function (map, name) {\n var /** @type {?} */ matcher =
map.get(name);\n if (!matcher) {\n matcher = new SelectorMatcher();\n map.set(name,
matcher);\n }\n return matcher;\n };\n /**\n * Find the objects that have been added via
`addSelectable`\n * whose css selector is contained in the given css selector.\n * @param cssSelector A css
selector\n * @param matchedCallback This callback will be called with the object handed into `addSelectable`\n
* @return boolean true if a match was found\n */\n /**\n * Find the objects that have been added via
`addSelectable`\n * whose css selector is contained in the given css selector.\n * @param {?} cssSelector A css
selector\n * @param {?} matchedCallback This callback will be called with the object handed into
`addSelectable`\n * @return {?} boolean true if a match was found\n */\n SelectorMatcher.prototype.match =
/**\n * Find the objects that have been added via `addSelectable`\n * whose css selector is contained in the
given css selector.\n * @param {?} cssSelector A css selector\n * @param {?} matchedCallback This callback
will be called with the object handed into `addSelectable`\n * @return {?} boolean true if a match was found\n
*/\n function (cssSelector, matchedCallback) {\n var /** @type {?} */ result = false;\n var /** @type {?}
*/ element = /** @type {?} */ ((cssSelector.element));\n var /** @type {?} */ classNames =
cssSelector.classNames;\n var /** @type {?} */ attrs = cssSelector.attrs;\n for (var /** @type {?} */ i = 0; i
< this._listContexts.length; i++) {\n this._listContexts[i].alreadyMatched = false;\n }\n result =
this._matchTerminal(this._elementMap, element, cssSelector, matchedCallback) || result;\n result =
this._matchPartial(this._elementPartialMap, element, cssSelector, matchedCallback) ||\n result;\n if
(classNames) {\n for (var /** @type {?} */ i = 0; i < classNames.length; i++) {\n var /** @type {?}
*/ className = classNames[i];\n result =\n this._matchTerminal(this._classMap, className,
cssSelector, matchedCallback) || result;\n result =\n this._matchPartial(this._classPartialMap,
className, cssSelector, matchedCallback) ||\n result;\n }\n }\n if (attrs) {\n for
(var /** @type {?} */ i = 0; i < attrs.length; i += 2) {\n var /** @type {?} */ name_3 = attrs[i];\n var /** @type {?} */ value = attrs[i + 1];\n var /** @type {?} */ terminalValuesMap = /** @type {?} */
((this._attrValueMap.get(name_3)));\n if (value) {\n result =\n this._matchTerminal(terminalValuesMap, value, cssSelector, matchedCallback) || result;\n }\n result
=\n this._matchTerminal(terminalValuesMap, value, cssSelector, matchedCallback) || result;\n var /** @type {?} */ partialValuesMap = /** @type {?} */ ((this._attrValuePartialMap.get(name_3)));\n if
(value) {\n result = this._matchPartial(partialValuesMap, value, cssSelector, matchedCallback) || result;\n }\n result =\n this._matchPartial(partialValuesMap, value, cssSelector, matchedCallback)
|| result;\n }\n }\n return result;\n };\n /** @internal */\n /**\n * \\@internal\n * @param
 {?} map\n * @param {?} name\n * @param {?} cssSelector\n * @param {?} matchedCallback\n *
@return {?}\n */\n SelectorMatcher.prototype._matchTerminal = /**\n * \\@internal\n * @param {?}
map\n * @param {?} name\n * @param {?} cssSelector\n * @param {?} matchedCallback\n * @return
 {?} */\n function (map, name, cssSelector, matchedCallback) {\n if (!map || typeof name !== 'string') {\n
 return false;\n }\n var /** @type {?} */ selectables = map.get(name) || [];\n var /** @type {?} */
starSelectables = /** @type {?} */ ((map.get('*')));\n if (starSelectables) {\n selectables =
selectables.concat(starSelectables);\n }\n if (selectables.length === 0) {\n return false;\n }\n var /** @type {?} */ selectable;\n var /** @type {?} */ result = false;\n for (var /** @type {?} */ i = 0; i <

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this._directiveNormalizer.clearCache();\n });\n /**\n * @param {?} baseType\n * @param {?} name\n * @return {?}\n */\n CompileMetadataResolver.prototype._createProxyClass = /**\n * @param {?} baseType\n * @param {?} name\n * @return {?}\n */\n function (baseType, name) {\n var /** @type {?} */ delegate = null;\n var /** @type {?} */ proxyClass = /** @type {?} */ (function () {\n if (!delegate) {\n throw new Error("Illegal state: Class '" + name + "' for type '" + stringify(baseType) + "' is not compiled yet!");\n }\n return delegate.apply(this, arguments);\n });\n proxyClass.setDelegate = function (d) {\n delegate = d;\n (/** @type {?} */ (proxyClass)).prototype = d.prototype;\n };\n // Make stringify work correctly\n (/** @type {?} */ (proxyClass)).overriddenName = name;\n return proxyClass;\n });\n /**\n * @param {?} dirType\n * @param {?} name\n * @return {?}\n */\n CompileMetadataResolver.prototype.getGeneratedClass = /**\n * @param {?} dirType\n * @param {?} name\n * @return {?}\n */\n function (dirType, name) {\n if (dirType instanceof StaticSymbol) {\n return this._staticSymbolCache.get(ngfactoryFilePath(dirType.filePath), name);\n } else {\n return this._createProxyClass(dirType, name);\n }\n });\n /**\n * @param {?} dirType\n * @return {?}\n */\n CompileMetadataResolver.prototype.getComponentViewClass = /**\n * @param {?} dirType\n * @return {?}\n */\n function (dirType) {\n return this.getGeneratedClass(dirType, viewClassName(dirType, 0));\n });\n /**\n * @param {?} dirType\n * @return {?}\n */\n CompileMetadataResolver.prototype.getHostComponentViewClass = /**\n * @param {?} dirType\n * @return {?}\n */\n function (dirType) {\n return this.getGeneratedClass(dirType, hostViewClassName(dirType));\n });\n /**\n * @param {?} dirType\n * @return {?}\n */\n CompileMetadataResolver.prototype.getHostComponentType = /**\n * @param {?} dirType\n * @return {?}\n */\n function (dirType) {\n var /** @type {?} */ name = identifierName({ reference: dirType }) + "_Host";\n if (dirType instanceof StaticSymbol) {\n return this._staticSymbolCache.get(dirType.filePath, name);\n } else {\n var /** @type {?} */ HostClass = /** @type {?} */ (function HostClass() {});\n HostClass.overriddenName = name;\n return HostClass;\n }\n });\n /**\n * @param {?} dirType\n * @return {?}\n */\n CompileMetadataResolver.prototype.getRendererType = /**\n * @param {?} dirType\n * @return {?}\n */\n function (dirType) {\n if (dirType instanceof StaticSymbol) {\n return this._staticSymbolCache.get(ngfactoryFilePath(dirType.filePath), rendererTypeName(dirType));\n } else {\n // returning an object as proxy,\n // that we fill later during runtime compilation.\n return /** @type {?} */ ({});\n }\n });\n /**\n * @param {?} selector\n * @param {?} dirType\n * @param {?} inputs\n * @param {?} outputs\n * @return {?}\n */\n CompileMetadataResolver.prototype.getComponentFactory = /**\n * @param {?} selector\n * @param {?} dirType\n * @param {?} inputs\n * @param {?} outputs\n * @return {?}\n */\n function (selector, dirType, inputs, outputs) {\n if (dirType instanceof StaticSymbol) {\n return this._staticSymbolCache.get(ngfactoryFilePath(dirType.filePath), componentFactoryName(dirType));\n } else {\n var /** @type {?} */ hostView = this.getHostComponentViewClass(dirType);\n // Note: ngContentSelectors will be filled later once the template is\n // loaded.\n var /** @type {?} */ createComponentFactory = this._reflector.resolveExternalReference(Identifiers.createComponentFactory);\n return createComponentFactory(selector, dirType, /** @type {?} */ (hostView), inputs, outputs, []);\n }\n });\n /**\n * @param {?} factory\n * @param {?} ngContentSelectors\n * @return {?}\n */\n CompileMetadataResolver.prototype.initComponentFactory = /**\n * @param {?} factory\n * @param {?} ngContentSelectors\n * @return {?}\n */\n function (factory, ngContentSelectors) {\n if (!(factory instanceof StaticSymbol)) {\n (_a = (/** @type {?} */ (factory)).ngContentSelectors).push.apply(_a, ngContentSelectors);\n }\n var _a;\n });\n /**\n * @param {?} type\n * @param {?} kind\n * @return {?}\n */\n CompileMetadataResolver.prototype._loadSummary = /**\n * @param {?} type\n * @param {?} kind\n * @return {?}\n */\n function (type, kind) {\n var /** @type {?} */ typeSummary = this._summaryCache.get(type);\n if (!typeSummary) {\n var /** @type {?} */ summary = this._summaryResolver.resolveSummary(type);\n typeSummary = summary ? summary.type : null;\n }\n });

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this._summaryCache.set(type, typeSummary || null);\n }\n return typeSummary &&
typeSummary.summaryKind === kind ? typeSummary : null;\n });\n /**\n * @param {?} compMeta\n * @param {?=} hostViewType\n * @return {?}\n */\n CompileMetadataResolver.prototype.getHostComponentMetadata = /**\n * @param {?} compMeta\n * @param {?=} hostViewType\n * @return {?}\n */\n function (compMeta, hostViewType) {\n var /**\n * @type {?} */ hostType = this.getHostComponentType(compMeta.type.reference);\n if (!hostViewType) {\n hostViewType = this.getHostComponentViewClass(hostType);\n }\n // Note: ! is ok here as this method\n should only be called with normalized directive\n // metadata, which always fills in the selector.\n var /**\n * @type {?} */ template = CssSelector.parse(/** @type {?} */\n ((compMeta.selector))[0].getMatchingElementTemplate());\n var /** @type {?} */ templateUrl = "";\n var /**\n * @type {?} */ htmlAst = this._htmlParser.parse(template, templateUrl);\n return\n CompileDirectiveMetadata.create({\n isHost: true,\n type: { reference: hostType, diDeps: [],\n lifecycleHooks: [] },\n template: new CompileTemplateMetadata({\n encapsulation:\n ViewEncapsulation.None,\n template: template,\n templateUrl: templateUrl,\n htmlAst:\n htmlAst,\n styles: [],\n styleUrls: [],\n ngContentSelectors: [],\n animations:\n [],\n isInline: true,\n externalStylesheets: [],\n interpolation: null,\n preserveWhitespaces: false,\n }),\n exportAs: null,\n changeDetection:\n ChangeDetectionStrategy.Default,\n inputs: [],\n outputs: [],\n host: {},\n isComponent:\n true,\n selector: '*',\n providers: [],\n viewProviders: [],\n queries: [],\n guards:\n {},\n viewQueries: [],\n componentViewType: hostViewType,\n rendererType: /** @type {?} */\n */ ({ id: '__Host__', encapsulation: ViewEncapsulation.None, styles: [], data: {} })),\n entryComponents: [],\n componentFactory: null\n });\n });\n /**\n * @param {?} ngModuleType\n * @param {?} directiveType\n * @param {?} isSync\n * @return {?}\n */\n CompileMetadataResolver.prototype.loadDirectiveMetadata = /**\n * @param {?} ngModuleType\n * @param {?} directiveType\n * @param {?} isSync\n * @return {?}\n */\n function (ngModuleType, directiveType, isSync) {\n var _this = this;\n if (this._directiveCache.has(directiveType)) {\n return\n null;\n }\n directiveType = resolveForwardRef(directiveType);\n var _a = /** @type {?} */\n ((this.getNonNormalizedDirectiveMetadata(directiveType))), annotation = _a.annotation, metadata = _a.metadata;\n var /** @type {?} */ createDirectiveMetadata = function (templateMetadata) {\n var /** @type {?} */\n normalizedDirMeta = new CompileDirectiveMetadata({\n isHost: false,\n type: metadata.type,\n isComponent: metadata.isComponent,\n selector: metadata.selector,\n exportAs:\n metadata.exportAs,\n changeDetection: metadata.changeDetection,\n inputs: metadata.inputs,\n outputs: metadata.outputs,\n hostListeners: metadata.hostListeners,\n hostProperties:\n metadata.hostProperties,\n hostAttributes: metadata.hostAttributes,\n providers:\n metadata.providers,\n viewProviders: metadata.viewProviders,\n queries: metadata.queries,\n guards: metadata.guards,\n viewQueries: metadata.viewQueries,\n entryComponents:\n metadata.entryComponents,\n componentViewType: metadata.componentViewType,\n rendererType: metadata.rendererType,\n componentFactory: metadata.componentFactory,\n template: templateMetadata\n });\n if (templateMetadata) {\n _this.initComponentFactory(/** @type {?} */ ((metadata.componentFactory)),\n templateMetadata.ngContentSelectors);\n }\n _this._directiveCache.set(directiveType,\n normalizedDirMeta);\n return null;\n });\n if (metadata.isComponent) {\n var /** @type {?} */ template = /** @type {?} */\n ((metadata.template));\n var /** @type {?} */ templateMeta =\n this._directiveNormalizer.normalizeTemplate({\n ngModuleType: ngModuleType,\n componentType: directiveType,\n moduleName: this._reflector.componentModuleName(directiveType,\n annotation),\n encapsulation: template.encapsulation,\n template: template.template,\n templateUrl: template.templateUrl,\n styles: template.styles,\n styleUrls: template.styleUrls,\n }

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 animations: template.animations,\n interpolation: template.interpolation,\n preserveWhitespaces: template.preserveWhitespaces\n });\n if (isPromise(templateMeta) && isSync)\n {\n this._reportError(componentStillLoadingError.directiveType), directiveType);\n return null;\n }\n return SyncAsync.then(templateMeta, createDirectiveMetadadata);\n }\n else {\n //\n directive\n createDirectiveMetadadata(null);\n return null;\n }\n };\n /**\n * @param {?}\n directiveType\n * @return {?}\n */\n CompileMetadadataResolver.prototype.getNonNormalizedDirectiveMetadadata = /**\n * @param {?}\n directiveType\n * @return {?}\n */\n function (directiveType) {\n var _this = this;\n directiveType =\n resolveForwardRef(directiveType);\n if (!directiveType) {\n return null;\n }\n var /** @type {?}\n */ cacheEntry = this._nonNormalizedDirectiveCache.get(directiveType);\n if (cacheEntry) {\n return\n cacheEntry;\n }\n var /** @type {?}\n */ dirMeta = this._directiveResolver.resolve(directiveType, false);\n if (!dirMeta) {\n return null;\n }\n var /** @type {?}\n */ nonNormalizedTemplateMetadadata = /**\n @type {?}\n */ ((undefined));\n if (createComponent.isTypeOf(dirMeta)) {\n // component\n var /**\n @type {?}\n */ compMeta = /**\n @type {?}\n */ (dirMeta);\n assertArrayOfStrings('styles', compMeta.styles);\n assertArrayOfStrings('styleUrls', compMeta.styleUrls);\n assertInterpolationSymbols('interpolation',\n compMeta.interpolation);\n var /** @type {?}\n */ animations = compMeta.animations;\n nonNormalizedTemplateMetadadata = new CompileTemplateMetadadata({\n encapsulation:\n noUndefined(compMeta.encapsulation),\n template: noUndefined(compMeta.template),\n templateUrl: noUndefined(compMeta.templateUrl),\n htmlAst: null,\n styles: compMeta.styles ||\n [],\n styleUrls: compMeta.styleUrls || [],\n animations: animations || [],\n interpolation:\n noUndefined(compMeta.interpolation),\n isInline: !!compMeta.template,\n externalStylesheets:\n [],\n ngContentSelectors: [],\n preserveWhitespaces:\n noUndefined(dirMeta.preserveWhitespaces),\n });\n }\n var /** @type {?}\n */\n changeDetectionStrategy = /** @type {?}\n */ ((null));\n var /** @type {?}\n */ viewProviders = [];\n var /**\n @type {?}\n */ entryComponentMetadadata = [];\n var /** @type {?}\n */ selector = dirMeta.selector;\n if\n (createComponent.isTypeOf(dirMeta)) {\n // Component\n var /** @type {?}\n */ compMeta = /**\n @type {?}\n */ (dirMeta);\n changeDetectionStrategy = /** @type {?}\n */ ((compMeta.changeDetection));\n if (compMeta.viewProviders) {\n viewProviders =\n this._getProvidersMetadadata(compMeta.viewProviders, entryComponentMetadadata, \"viewProviders for \" +\n stringifyType(directiveType) + \"\", [], directiveType);\n }\n if (compMeta.entryComponents) {\n entryComponentMetadadata = flattenAndDedupeArray(compMeta.entryComponents)\n .map(function (type) { return ((_this._getEntryComponentMetadadata(type))); });\n }\n .concat(entryComponentMetadadata);\n }\n if (!selector) {\n selector =\n this._schemaRegistry.getDefaultComponentElementName();\n }\n }\n else {\n // Directive\n if (!selector) {\n this._reportError(syntaxError(\"Directive \" + stringifyType(directiveType) + \" has\n no selector, please add it!\"), directiveType);\n selector = 'error';\n }\n }\n }\n var /** @type\n */\n providers = [];\n if (dirMeta.providers != null) {\n providers =\n this._getProvidersMetadadata(dirMeta.providers, entryComponentMetadadata, \"providers for \" +\n stringifyType(directiveType) + \"\", [], directiveType);\n }\n var /** @type {?}\n */ queries = [];\n var\n /** @type {?}\n */\n viewQueries = [];\n if (dirMeta.queries != null) {\n queries =\n this._getQueriesMetadadata(dirMeta.queries, false, directiveType);\n viewQueries =\n this._getQueriesMetadadata(dirMeta.queries, true, directiveType);\n }\n var /** @type {?}\n */\n metadadata =\n CompileDirectiveMetadadata.create({\n isHost: false,\n selector: selector,\n exportAs:\n noUndefined(dirMeta.exportAs),\n isComponent: !!nonNormalizedTemplateMetadadata,\n type:\n this._getTypeMetadadata(directiveType),\n template: nonNormalizedTemplateMetadadata,\n changeDetection: changeDetectionStrategy,\n inputs: dirMeta.inputs || [],\n outputs: dirMeta.outputs ||\n [],\n host: dirMeta.host || {},\n providers: providers || [],\n viewProviders: viewProviders || [],\n queries: queries || [],\n guards: dirMeta.guards || {},\n viewQueries: viewQueries || [],\n });\n }\n }\n }\n}

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entryComponents: entryComponentMetadata,\n componentViewType: nonNormalizedTemplateMetadata ?
this.getComponentViewClass(directiveType) : \n null,\n rendererType:
nonNormalizedTemplateMetadata ? this.getRendererType(directiveType) : null,\n componentFactory: null\n });\n if (nonNormalizedTemplateMetadata) {\n metadata.componentFactory = \n
this.getComponentFactory(selector, directiveType, metadata.inputs, metadata.outputs);\n }\n cacheEntry =
{ metadata: metadata, annotation: dirMeta };\n this._nonNormalizedDirectiveCache.set(directiveType,
cacheEntry);\n return cacheEntry;\n };\n /**\n * Gets the metadata for the given directive.\n * This
assumes `loadNgModuleDirectiveAndPipeMetadata` has been called first.\n *\n * Gets the metadata
for the given directive.\n * This assumes `loadNgModuleDirectiveAndPipeMetadata` has been called first.\n *
@param {?} directiveType\n * @return {?} */\n CompileMetadataResolver.prototype.getDirectiveMetadata = /**\n * Gets the metadata for the given directive.\n *
This assumes `loadNgModuleDirectiveAndPipeMetadata` has been called first.\n * @param {?}
directiveType\n * @return {?} */\n function (directiveType) {\n var /** @type {?} */ dirMeta = /**
@type {?} */ ((this._directiveCache.get(directiveType)));\n if (!dirMeta) {\n
this._reportError(syntaxError(`Illegal state: getDirectiveMetadata can only be called after
loadNgModuleDirectiveAndPipeMetadata for a module that declares it. Directive ` + stringifyType(directiveType)
+ `.`), directiveType);\n }\n return dirMeta;\n };\n /**\n * @param {?} dirType\n * @return
{?}\n *\n * CompileMetadataResolver.prototype.getDirectiveSummary = /**\n * @param {?} dirType\n *
@return {?} */\n *\n * function (dirType) {\n var /** @type {?} */ dirSummary = /** @type {?} */
(this._loadSummary(dirType, CompileSummaryKind.Directive));\n if (!dirSummary) {\n
this._reportError(syntaxError(`Illegal state: Could not load the summary for directive ` + stringifyType(dirType) +
`.`), dirType);\n }\n return dirSummary;\n };\n /**\n * @param {?} type\n * @return {?} */\n
CompileMetadataResolver.prototype.isDirective = /**\n * @param {?} type\n * @return {?} */\n *\n * function (type) {\n return !!this._loadSummary(type, CompileSummaryKind.Directive) ||\n
this._directiveResolver.isDirective(type);\n };\n /**\n * @param {?} type\n * @return {?} */\n *\n
CompileMetadataResolver.prototype.isPipe = /**\n * @param {?} type\n * @return {?} */\n *\n * function
(type) {\n return !!this._loadSummary(type, CompileSummaryKind.Pipe) ||\n
this._pipeResolver.isPipe(type);\n };\n /**\n * @param {?} type\n * @return {?} */\n *\n
CompileMetadataResolver.prototype.isNgModule = /**\n * @param {?} type\n * @return {?} */\n *\n * function (type) {\n return !!this._loadSummary(type, CompileSummaryKind.NgModule) ||\n
this._ngModuleResolver.isNgModule(type);\n };\n /**\n * @param {?} moduleType\n * @param {?=}
alreadyCollecting\n * @return {?} */\n *\n * CompileMetadataResolver.prototype.getNgModuleSummary =
/**\n * @param {?} moduleType\n * @param {?=} alreadyCollecting\n * @return {?}\n *\n * function
(moduleType, alreadyCollecting) {\n if (alreadyCollecting === void 0) { alreadyCollecting = null; }\n var
/** @type {?} */ moduleSummary = /** @type {?} */ (this._loadSummary(moduleType,
CompileSummaryKind.NgModule));\n if (!moduleSummary) {\n var /** @type {?} */ moduleMeta =
this.getNgModuleMetadata(moduleType, false, alreadyCollecting);\n moduleSummary = moduleMeta ?
moduleMeta.toSummary() : null;\n if (moduleSummary) {\n this._summaryCache.set(moduleType,
moduleSummary);\n }\n }\n return moduleSummary;\n };\n /**\n * Loads the declared
directives and pipes of an NgModule.\n *\n * Loads the declared directives and pipes of an
NgModule.\n * @param {?} moduleType\n * @param {?} isSync\n * @param {?=} throwIfNotFound\n *
@return {?} */\n *\n * CompileMetadataResolver.prototype.loadNgModuleDirectiveAndPipeMetadata = /**\n *
Loads the declared directives and pipes of an NgModule.\n * @param {?} moduleType\n * @param {?}
isSync\n * @param {?=} throwIfNotFound\n * @return {?}\n *\n * function (moduleType, isSync,
throwIfNotFound) {\n var _this = this;\n if (throwIfNotFound === void 0) { throwIfNotFound = true; }\n
var /** @type {?} */ ngModule = this.getNgModuleMetadata(moduleType, throwIfNotFound);\n var /**
@type {?} */ loading = [];\n if (ngModule) {\n ngModule.declaredDirectives.forEach(function (id) {\n
var /** @type {?} */ promise = _this.loadDirectiveMetadata(moduleType, id.reference, isSync);\n if

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 (promise) {\n
 loading.push(promise);\n
 });\n
 NgModule.declaredPipes.forEach(function (id) { return _this._loadPipeMetadata(id.reference); });\n
 return Promise.all(loading);\n
};\n
/**\n
 * @param {?} moduleType\n
 * @param {?=} throwIfNotFound\n
 * @param {?=} alreadyCollecting\n
 * @return {?}\n
 */\n
CompileMetadataResolver.prototype.getNgModuleMetadata = /**\n
 * @param {?} moduleType\n
 * @param {?=} throwIfNotFound\n
 * @param {?=} alreadyCollecting\n
 * @return {?}\n
 */\n
function (moduleType,\n
throwIfNotFound, alreadyCollecting) {\n
 var _this = this;\n
 if (throwIfNotFound === void 0) {\n
 throwIfNotFound = true;\n
 }\n
 if (alreadyCollecting === void 0) {\n
 alreadyCollecting = null;\n
 }\n
 moduleType = resolveForwardRef(moduleType);\n
 var /** @type {?} */ compileMeta = this._ngModuleCache.get(moduleType);\n
 if (compileMeta) {\n
 return compileMeta;\n
 }\n
 var /** @type {?} */ meta = this._ngModuleResolver.resolve(moduleType, throwIfNotFound);\n
 if (!meta) {\n
 return null;\n
 }\n
 var /** @type {?} */ declaredDirectives = [];\n
 var /** @type {?} */ exportedNonModuleIdentifiers = [];\n
 var /** @type {?} */ declaredPipes = [];\n
 var /** @type {?} */ importedModules = [];\n
 var /** @type {?} */ exportedModules = [];\n
 var /** @type {?} */ providers = [];\n
 var /** @type {?} */ entryComponents = [];\n
 var /** @type {?} */ bootstrapComponents = [];\n
 var /** @type {?} */ schemas = [];\n
 if (meta.imports) {\n
 flattenAndDedupeArray(meta.imports).forEach(function (importedType) {\n
 var /** @type {?} */ importedModuleType = /** @type {?} */ ((undefined));\n
 if (isValidType(importedType)) {\n
 importedModuleType = importedType;\n
 }\n
 else if (importedType && importedType.ngModule) {\n
 var /** @type {?} */ moduleWithProviders = importedType;\n
 importedModuleType = moduleWithProviders.ngModule;\n
 if (moduleWithProviders.providers) {\n
 providers.push.apply(providers, _this._getProvidersMetadata(moduleWithProviders.providers, entryComponents, \"provider for the NgModule \" + stringifyType(importedModuleType) + \"\", [], importedType));\n
 }\n
 if (importedModuleType) {\n
 if (_this._checkSelfImport(moduleType, importedModuleType))\n
 return;\n
 if (!alreadyCollecting)\n
 alreadyCollecting = new Set();\n
 if (alreadyCollecting.has(importedModuleType)) {\n
 _this._reportError(syntaxError(_this._getTypeDescriptor(importedModuleType) + \" \" + stringifyType(importedType) + \" is imported recursively by the module \" + stringifyType(moduleType) + \"\"), moduleType);\n
 return;\n
 }\n
 alreadyCollecting.add(importedModuleType);\n
 var /** @type {?} */ importedModuleSummary = _this.getNgModuleSummary(importedModuleType, alreadyCollecting);\n
 alreadyCollecting.delete(importedModuleType);\n
 if (!importedModuleSummary) {\n
 _this._reportError(syntaxError(\"Unexpected \" + _this._getTypeDescriptor(importedType) + \" \" + stringifyType(importedType) + \" imported by the module \" + stringifyType(moduleType) + \"\". Please add a @NgModule annotation.\", moduleType);\n
 return;\n
 }\n
 importedModules.push(importedModuleSummary);\n
 }\n
 else {\n
 _this._reportError(syntaxError(\"Unexpected value \" + stringifyType(importedType) + \" imported by the module \" + stringifyType(moduleType) + \"\"), moduleType);\n
 return;\n
 }\n
 });\n
 }\n
 if (meta.exports) {\n
 flattenAndDedupeArray(meta.exports).forEach(function (exportedType) {\n
 if (!isValidType(exportedType)) {\n
 _this._reportError(syntaxError(\"Unexpected value \" + stringifyType(exportedType) + \" exported by the module \" + stringifyType(moduleType) + \"\"), moduleType);\n
 return;\n
 }\n
 if (!alreadyCollecting)\n
 alreadyCollecting = new Set();\n
 if (alreadyCollecting.has(exportedType)) {\n
 _this._reportError(syntaxError(_this._getTypeDescriptor(exportedType) + \" \" + stringify(exportedType) + \" is exported recursively by the module \" + stringifyType(moduleType) + \"\"), moduleType);\n
 return;\n
 }\n
 alreadyCollecting.add(exportedType);\n
 var /** @type {?} */ exportedModuleSummary = _this.getNgModuleSummary(exportedType, alreadyCollecting);\n
 alreadyCollecting.delete(exportedType);\n
 if (exportedModuleSummary) {\n

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exportedModules.push(exportedModuleSummary);\n }\n else {\n
exportedNonModuleIdentifiers.push(_this._getIdentifierMetadata(exportedType));\n }\n });\n
}\n // Note: This will be modified later, so we rely on\n // getting a new instance every time!\n var /**
@type {?} */ transitiveModule = this._getTransitiveNgModuleMetadata(importedModules, exportedModules);\n
if (meta.declarations) {\n flattenAndDedupeArray(meta.declarations).forEach(function (declaredType) {\n
 if (!isValidType(declaredType)) {\n _this._reportError(syntaxError("\Unexpected value \"" +
stringifyType(declaredType) + "\" declared by the module \"" + stringifyType(moduleType) + "\""), moduleType);\n
 return;\n }\n var /** @type {?} */ declaredIdentifier =
_this._getIdentifierMetadata(declaredType);\n if (_this.isDirective(declaredType)) {\n
transitiveModule.addDirective(declaredIdentifier);\n declaredDirectives.push(declaredIdentifier);\n
 _this._addTypeToModule(declaredType, moduleType);\n }\n else if
(_this.isPipe(declaredType)) {\n transitiveModule.addPipe(declaredIdentifier);\n
transitiveModule.pipes.push(declaredIdentifier);\n declaredPipes.push(declaredIdentifier);\n
 _this._addTypeToModule(declaredType, moduleType);\n }\n else {\n
 _this._reportError(syntaxError("\Unexpected \"" + _this._getTypeDescriptor(declaredType) + "\" "\n +
stringifyType(declaredType) + "\" declared by the module \"" + stringifyType(moduleType) + "\". Please add a
@Pipe/@Directive/@Component annotation.\""), moduleType);\n return;\n }\n });\n
}\n var /** @type {?} */ exportedDirectives = [];\n var /** @type {?} */ exportedPipes = [];\n
exportedNonModuleIdentifiers.forEach(function (exportedId) {\n if
(transitiveModule.directivesSet.has(exportedId.reference)) {\n exportedDirectives.push(exportedId);\n
 transitiveModule.addExportedDirective(exportedId);\n }\n else if
(transitiveModule.pipesSet.has(exportedId.reference)) {\n exportedPipes.push(exportedId);\n
 transitiveModule.addExportedPipe(exportedId);\n }\n else {\n
 _this._reportError(syntaxError("\Can't export \"" + _this._getTypeDescriptor(exportedId.reference) + "\" "\n +
stringifyType(exportedId.reference) + "\" from \"" + stringifyType(moduleType) + "\" as it was neither declared nor
imported!\""), moduleType);\n return;\n }\n });\n // The providers of the module have to go
last\n // so that they overwrite any other provider we already added.\n if (meta.providers) {\n
providers.push.apply(providers, this._getProvidersMetadata(meta.providers, entryComponents, "provider for the
NgModule \"" + stringifyType(moduleType) + "\"", [], moduleType));\n }\n if (meta.entryComponents) {\n
entryComponents.push.apply(entryComponents, flattenAndDedupeArray(meta.entryComponents)\n
.map(function (type) { return ((_this._getEntryComponentMetadata(type)); }));\n });\n if (meta.bootstrap)
{\n flattenAndDedupeArray(meta.bootstrap).forEach(function (type) {\n if (!isValidType(type)) {\n
 _this._reportError(syntaxError("\Unexpected value \"" + stringifyType(type) + "\" used in the bootstrap
property of module \"" + stringifyType(moduleType) + "\""), moduleType);\n return;\n }\n
 bootstrapComponents.push(_this._getIdentifierMetadata(type));\n });\n }\n
entryComponents.push.apply(entryComponents, bootstrapComponents.map(function (type) { return
((_this._getEntryComponentMetadata(type.reference)); }));\n });\n if (meta.schemas) {\n
schemas.push.apply(schemas, flattenAndDedupeArray(meta.schemas));\n }\n compileMeta = new
CompileNgModuleMetadata({\n type: this._getTypeMetadata(moduleType),\n providers: providers,\n
 entryComponents: entryComponents,\n bootstrapComponents: bootstrapComponents,\n
 schemas: schemas,\n declaredDirectives: declaredDirectives,\n exportedDirectives:
exportedDirectives,\n declaredPipes: declaredPipes,\n exportedPipes: exportedPipes,\n
 importedModules: importedModules,\n exportedModules: exportedModules,\n transitiveModule:
transitiveModule,\n id: meta.id || null,\n });\n entryComponents.forEach(function (id) { return
transitiveModule.addEntryComponent(id); });\n providers.forEach(function (provider) { return
transitiveModule.addProvider(provider, /** @type {?} */ ((compileMeta).type)); });\n
transitiveModule.addModule(compileMeta.type);\n this._ngModuleCache.set(moduleType, compileMeta);\n
return compileMeta;\n });\n /**\n * @param {?} moduleType\n * @param {?} importedModuleType\n *

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@return {?} \n * \n CompileMetadataResolver.prototype._checkSelfImport = /** \n * @param {?}
moduleType \n * @param {?} importedModuleType \n * @return {?} \n * \n function (moduleType,
importedModuleType) { \n if (moduleType === importedModuleType) { \n
this._reportError(syntaxError("'" + stringifyType(moduleType) + "'" module can't import itself"), moduleType); \n
return true; \n } \n return false; \n }; \n /** \n * @param {?} type \n * @return {?} \n * \n
CompileMetadataResolver.prototype._getTypeDescriptor = /** \n * @param {?} type \n * @return {?} \n * \n
function (type) { \n if (isValidType(type)) { \n if (this.isDirective(type)) { \n return 'directive'; \n
} \n if (this.isPipe(type)) { \n return 'pipe'; \n } \n if (this.isNgModule(type)) { \n
return 'module'; \n } \n } \n if ((/** @type {?} */ (type)).provide) { \n return 'provider'; \n
} \n return 'value'; \n }; \n /** \n * @param {?} type \n * @param {?} moduleType \n * @return {?} \n
* \n CompileMetadataResolver.prototype._addTypeToModule = /** \n * @param {?} type \n * @param {?}
moduleType \n * @return {?} \n * \n function (type, moduleType) { \n var /** @type {?} */ oldModule =
this._ngModuleOfTypes.get(type); \n if (oldModule && oldModule !== moduleType) { \n
this._reportError(syntaxError('"Type \'' + stringifyType(type) + '\'' is part of the declarations of 2 modules: \'' +
stringifyType(oldModule) + '\'' and \'' + stringifyType(moduleType) + '\''! \n + \n ("Please consider moving
\'' + stringifyType(type) + '\'' to a higher module that imports \'' + stringifyType(oldModule) + '\'' and \'' +
stringifyType(moduleType) + '\''.' \n + \n ("You can also create a new NgModule that exports and includes
\'' + stringifyType(type) + '\'' then import that NgModule in \'' + stringifyType(oldModule) + '\'' and \'' +
stringifyType(moduleType) + '\''.' \n + \n), moduleType); \n return; \n } \n this._ngModuleOfTypes.set(type,
moduleType); \n }; \n /** \n * @param {?} importedModules \n * @param {?} exportedModules \n *
@return {?} \n * \n CompileMetadataResolver.prototype._getTransitiveNgModuleMetadata = /** \n *
@param {?} importedModules \n * @param {?} exportedModules \n * @return {?} \n * \n function
(importedModules, exportedModules) { \n // collect `providers` `entryComponents` from all imported and all
exported modules \n var /** @type {?} */ result = new TransitiveCompileNgModuleMetadata(); \n var /**
@type {?} */ modulesByToken = new Map(); \n importedModules.concat(exportedModules).forEach(function
(modSummary) { \n modSummary.modules.forEach(function (mod) { return result.addModule(mod); }); \n
modSummary.entryComponents.forEach(function (comp) { return result.addEntryComponent(comp); }); \n
var /** @type {?} */ addedTokens = new Set(); \n modSummary.providers.forEach(function (entry) { \n
var /** @type {?} */ tokenRef = tokenReference(entry.provider.token); \n var /** @type {?} */
prevModules = modulesByToken.get(tokenRef); \n if (!prevModules) { \n prevModules = new
Set(); \n modulesByToken.set(tokenRef, prevModules); \n } \n var /** @type {?} */
moduleRef = entry.module.reference; \n // Note: the providers of one module may still contain multiple
providers \n // per token (e.g. for multi providers), and we need to preserve these. \n if
(addedTokens.has(tokenRef) || !prevModules.has(moduleRef)) { \n prevModules.add(moduleRef); \n
addedTokens.add(tokenRef); \n result.addProvider(entry.provider, entry.module); \n } \n
}); \n }); \n exportedModules.forEach(function (modSummary) { \n
modSummary.exportedDirectives.forEach(function (id) { return result.addExportedDirective(id); }); \n
modSummary.exportedPipes.forEach(function (id) { return result.addExportedPipe(id); }); \n }); \n
importedModules.forEach(function (modSummary) { \n modSummary.exportedDirectives.forEach(function
(id) { return result.addDirective(id); }); \n modSummary.exportedPipes.forEach(function (id) { return
result.addPipe(id); }); \n }); \n return result; \n }; \n /** \n * @param {?} type \n * @return {?} \n
* \n CompileMetadataResolver.prototype._getIdentifierMetadata = /** \n * @param {?} type \n * @return
{?} \n * \n function (type) { \n type = resolveForwardRef(type); \n return { reference: type }; \n }; \n
/** \n * @param {?} type \n * @return {?} \n * \n CompileMetadataResolver.prototype.isInjectable = /** \n
* @param {?} type \n * @return {?} \n * \n function (type) { \n var /** @type {?} */ annotations =
this._reflector.annotations(type); \n return annotations.some(function (ann) { return
createInjectable.isTypeOf(ann); }); \n }; \n /** \n * @param {?} type \n * @return {?} \n * \n
CompileMetadataResolver.prototype.getInjectableSummary = /** \n * @param {?} type \n * @return {?} \n

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*\n function (type) {\n return {\n summaryKind: CompileSummaryKind.Injectable,\n type:
this._getTypeMetadata(type, null, false)\n }; \n }; \n /**\n * @param {?} type\n * @param {?=}
dependencies\n * @return {?}\n */\n *^ CompileMetadataResolver.prototype._getInjectableMetadata = /**\n
* @param {?} type\n * @param {?=} dependencies\n * @return {?}\n */\n *^ function (type, dependencies)
{\n if (dependencies === void 0) { dependencies = null; }\n var /** @type {?} */ typeSummary =
this._loadSummary(type, CompileSummaryKind.Injectable);\n if (typeSummary) {\n return
typeSummary.type;\n }\n return this._getTypeMetadata(type, dependencies);\n }; \n /**\n * @param
{?} type\n * @param {?=} dependencies\n * @param {?=} throwOnUnknownDeps\n * @return {?}\n
*^ CompileMetadataResolver.prototype._getTypeMetadata = /**\n
* @param {?} type\n * @param {?=}
dependencies\n * @param {?=} throwOnUnknownDeps\n * @return {?}\n */\n *^ function (type,
dependencies, throwOnUnknownDeps) {\n if (dependencies === void 0) { dependencies = null; }\n if
(throwOnUnknownDeps === void 0) { throwOnUnknownDeps = true; }\n var /** @type {?} */ identifier =
this._getIdentifierMetadata(type);\n return {\n reference: identifier.reference,\n diDeps:
this._getDependenciesMetadata(identifier.reference, dependencies, throwOnUnknownDeps),\n
lifecycleHooks: getAllLifecycleHooks(this._reflector, identifier.reference),\n }; \n }; \n /**\n * @param
{?} factory\n * @param {?=} dependencies\n * @return {?}\n */\n *^
CompileMetadataResolver.prototype._getFactoryMetadata = /**\n
* @param {?} factory\n * @param {?=}
dependencies\n * @return {?}\n */\n *^ function (factory, dependencies) {\n if (dependencies === void 0) {
dependencies = null; }\n factory = resolveForwardRef(factory);\n return { reference: factory, diDeps:
this._getDependenciesMetadata(factory, dependencies) }; \n }; \n /**\n * Gets the metadata for the given
pipe.\n * This assumes `loadNgModuleDirectiveAndPipeMetadata` has been called first.\n */\n /**\n *
Gets the metadata for the given pipe.\n * This assumes `loadNgModuleDirectiveAndPipeMetadata` has been
called first.\n * @param {?} pipeType\n * @return {?}\n */\n
CompileMetadataResolver.prototype.getPipeMetadata = /**\n
* Gets the metadata for the given pipe.\n * This
assumes `loadNgModuleDirectiveAndPipeMetadata` has been called first.\n * @param {?} pipeType\n *
@return {?}\n */\n *^ function (pipeType) {\n var /** @type {?} */ pipeMeta =
this._pipeCache.get(pipeType);\n if (!pipeMeta) {\n this._reportError(syntaxError("Illegal state:
getPipeMetadata can only be called after loadNgModuleDirectiveAndPipeMetadata for a module that declares it.
Pipe \"" + stringifyType(pipeType) + "\"."), pipeType);\n }\n return pipeMeta || null;\n }; \n /**\n
* @param {?} pipeType\n * @return {?}\n */\n *^
CompileMetadataResolver.prototype.getPipeSummary = /**\n
* @param {?} pipeType\n * @return {?}\n */\n *^ function (pipeType) {\n var /** @type {?} */
pipeSummary = /** @type {?} */ (this._loadSummary(pipeType, CompileSummaryKind.Pipe));\n if
(!pipeSummary) {\n this._reportError(syntaxError("Illegal state: Could not load the summary for pipe \"" +
stringifyType(pipeType) + "\"."), pipeType);\n }\n return pipeSummary;\n }; \n /**\n * @param {?}
pipeType\n * @return {?}\n */\n *^
CompileMetadataResolver.prototype.getOrLoadPipeMetadata = /**\n
* @param {?} pipeType\n * @return {?}\n */\n *^ function (pipeType) {\n var /** @type {?} */ pipeMeta =
this._pipeCache.get(pipeType);\n if (!pipeMeta) {\n pipeMeta = this._loadPipeMetadata(pipeType);\n
 }\n return pipeMeta;\n }; \n /**\n * @param {?} pipeType\n * @return {?}\n */\n
CompileMetadataResolver.prototype._loadPipeMetadata = /**\n
* @param {?} pipeType\n * @return {?}\n
*/\n *^ function (pipeType) {\n pipeType = resolveForwardRef(pipeType);\n var /** @type {?} */
pipeAnnotation = /** @type {?} */ ((this._pipeResolver.resolve(pipeType)));\n var /** @type {?} */ pipeMeta
= new CompilePipeMetadata({\n type: this._getTypeMetadata(pipeType),\n name:
pipeAnnotation.name,\n pure: !!pipeAnnotation.pure\n });\n this._pipeCache.set(pipeType,
pipeMeta);\n this._summaryCache.set(pipeType, pipeMeta.toSummary());\n return pipeMeta;\n }; \n
/**\n * @param {?} typeOrFunc\n * @param {?} dependencies\n * @param {?=} throwOnUnknownDeps\n
* @return {?}\n */\n *^
CompileMetadataResolver.prototype._getDependenciesMetadata = /**\n
* @param
{?} typeOrFunc\n * @param {?} dependencies\n * @param {?=} throwOnUnknownDeps\n * @return {?}\n
*/\n *^ function (typeOrFunc, dependencies, throwOnUnknownDeps) {\n var _this = this;\n if

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(throwOnUnknownDeps === void 0) { throwOnUnknownDeps = true; }\n var /** @type {?} */ /
hasUnknownDeps = false;\n var /** @type {?} */ / params = dependencies ||
this._reflector.parameters(typeOrFunc) || [];\n var /** @type {?} */ / dependenciesMetadata =
params.map(function (param) {\n var /** @type {?} */ / isAttribute = false;\n var /** @type {?} */ /
isHost = false;\n var /** @type {?} */ / isSelf = false;\n var /** @type {?} */ / isSkipSelf = false;\n var /** @type {?} */ / isOptional = false;\n var /** @type {?} */ / token = null;\n if
(Array.isArray(param)) {\n param.forEach(function (paramEntry) {\n if
(createHost.isTypeOf(paramEntry)) {\n isHost = true;\n }\n else if
(createSelf.isTypeOf(paramEntry)) {\n isSelf = true;\n }\n else if
(createSkipSelf.isTypeOf(paramEntry)) {\n isSkipSelf = true;\n }\n else if
(createOptional.isTypeOf(paramEntry)) {\n isOptional = true;\n }\n else if
(createAttribute.isTypeOf(paramEntry)) {\n isAttribute = true;\n token =
paramEntry.attributeName;\n }\n else if (createInject.isTypeOf(paramEntry)) {\n
token = paramEntry.token;\n }\n else if (createInjectionToken.isTypeOf(paramEntry) ||
paramEntry instanceof StaticSymbol) {\n token = paramEntry;\n }\n else if
(isValidType(paramEntry) && token === null) {\n token = paramEntry;\n }\n });\n }\n else {\n token = param;\n }\n if (token === null) {\n
hasUnknownDeps = true;\n return /** @type {?} */ / ((null));\n }\n return {\n
isAttribute: isAttribute,\n isHost: isHost,\n isSelf: isSelf,\n isSkipSelf: isSkipSelf,\n
isOptional: isOptional,\n token: this._getTokenMetadata(token)\n }; }\n });\n if
(hasUnknownDeps) {\n var /** @type {?} */ / depsTokens = dependenciesMetadata.map(function (dep) {\n
return dep ? stringifyType(dep.token) : '?'; }).join(', ');\n var /** @type {?} */ / message = "Can't resolve all
parameters for '" + stringifyType(typeOrFunc) + "': (" + depsTokens + ").";\n if (throwOnUnknownDeps ||
this._config.strictInjectionParameters) {\n this._reportError(syntaxError(message), typeOrFunc);\n }\n else {\n this._console.warn("Warning: '" + message + "' This will become an error in Angular
v6.x");\n }\n }\n return dependenciesMetadata; }\n /**\n * @param {?} token\n *
@return {?} }\n * ^\n * CompileMetadataResolver.prototype._getTokenMetadata = /**\n * @param {?} token\n *
@return {?} }\n * ^\n * function (token) {\n * token = resolveForwardRef(token);\n * var /** @type {?} */ /
compileToken;\n * if (typeof token === 'string') {\n * compileToken = { value: token }; }\n * else
{\n * compileToken = { identifier: { reference: token } }; }\n * return compileToken; }\n * /**\n *
@param {?} providers\n * @param {?} targetEntryComponents\n * @param {?=} debugInfo\n * @param
{?=} compileProviders\n * @param {?=} type\n * @return {?} }\n * ^\n * CompileMetadataResolver.prototype._getProvidersMetadata = /**\n * @param {?} providers\n * @param {?}
targetEntryComponents\n * @param {?=} debugInfo\n * @param {?=} compileProviders\n * @param {?=}
type\n * @return {?} }\n * ^\n * function (providers, targetEntryComponents, debugInfo, compileProviders, type)
{\n * var _this = this;\n * if (compileProviders === void 0) { compileProviders = []; }\n * providers.forEach(function (provider, providerIdx) {\n * if (Array.isArray(provider)) {\n *
_this._getProvidersMetadata(provider, targetEntryComponents, debugInfo, compileProviders);\n * }\n * else {\n * provider = resolveForwardRef(provider);\n * var /** @type {?} */ / providerMeta = /**
@param {?} */ / ((undefined));\n * if (provider && typeof provider === 'object' &&
provider.hasOwnProperty('provide')) {\n * _this._validateProvider(provider);\n * providerMeta
= new ProviderMeta(provider.provide, provider);\n * }\n * else if (isValidType(provider)) {\n *
providerMeta = new ProviderMeta(provider, { useClass: provider });\n * }\n * else if (provider
=== void 0) {\n * _this._reportError(syntaxError("Encountered undefined provider! Usually this means
you have a circular dependencies (might be caused by using 'barrel' index.ts files."));\n * return;\n * }\n * else {\n * var /** @type {?} */ / providersInfo = (** @type {?} */ /
(providers.reduce(function (soFar, seenProvider, seenProviderIdx) {\n * if (seenProviderIdx <
providerIdx) {\n * soFar.push("'" + stringifyType(seenProvider));\n * }\n

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else if (seenProviderIdx == providerIdx) {\n
 soFar.push("\"?" + stringifyType(seenProvider) +
\"?\");\n
} else if (seenProviderIdx == providerIdx + 1) {\n
soFar.push('...');\n
return soFar;\n
}, []))\n
.join(', ');\n
_this._reportError(syntaxError(\"Invalid \" + (debugInfo ? debugInfo : 'provider') + \" - only instances of
Provider and Type are allowed, got: [\" + providersInfo + \"]\"), type);\n
return;\n
}\n
if (providerMeta.token ===\n
_this._reflector.resolveExternalReference(Identifiers.ANALYZE_FOR_ENTRY_COMPONENTS)) {\n
targetEntryComponents.push.apply(targetEntryComponents,
_this._getEntryComponentsFromProvider(providerMeta, type));\n
} else {\n
compileProviders.push(_this.getProviderMetadata(providerMeta));\n
}\n
};\n
return
compileProviders;\n
};\n
/**\n
 * @param {?} provider\n
 * @return {?}\n
 */\n
CompileMetadataResolver.prototype._validateProvider = /**\n
 * @param {?} provider\n
 * @return {?}\n
 */\n
function (provider) {\n
 if (provider.hasOwnProperty('useClass') && provider.useClass == null) {\n
this._reportError(syntaxError(\"Invalid provider for \" + stringifyType(provider.provide) + \". useClass cannot be \"
+ provider.useClass + \".\n
Usually it happens when:\n
1. There's a circular dependency (might be
caused by using index.ts (barrel) files).\n
2. Class was used before it was declared. Use forwardRef in this
case.\");\n
}\n
};\n
/**\n
 * @param {?} provider\n
 * @param {?=} type\n
 * @return {?}\n
 */\n
CompileMetadataResolver.prototype._getEntryComponentsFromProvider = /**\n
 * @param {?} provider\n
 * @param {?=} type\n
 * @return {?}\n
 */\n
function (provider, type) {\n
 var _this = this;\n
 var /**
@type {?} */ components = [];\n
 var /**
@type {?} */ collectedIdentifiers = [];\n
 if (provider.useFactory ||
provider.useExisting || provider.useClass) {\n
 this._reportError(syntaxError(\"The
ANALYZE_FOR_ENTRY_COMPONENTS token only supports useValue!\"), type);\n
 return [];\n
 }\n
 if (!provider.multi) {\n
 this._reportError(syntaxError(\"The ANALYZE_FOR_ENTRY_COMPONENTS
token only supports 'multi = true!'\"), type);\n
 return [];\n
 }\n
 extractIdentifiers(provider.useValue,
collectedIdentifiers);\n
 collectedIdentifiers.forEach(function (identifier) {\n
 var /**
@type {?} */ entry =
_this._getEntryComponentMetadata(identifier.reference, false);\n
 if (entry) {\n
components.push(entry);\n
}\n
});\n
return components;\n
};\n
/**\n
 * @param {?} dirType\n
 * @param {?=} throwIfNotFound\n
 * @return {?}\n
 */\n
CompileMetadataResolver.prototype._getEntryComponentMetadata = /**\n
 * @param {?} dirType\n
 * @param {?=} throwIfNotFound\n
 * @return {?}\n
 */\n
function (dirType, throwIfNotFound) {\n
 if
(throwIfNotFound === void 0) { throwIfNotFound = true; }\n
 var /**
@type {?} */ dirMeta =
this.getNonNormalizedDirectiveMetadata(dirType);\n
 if (dirMeta && dirMeta.metadata.isComponent) {\n
return { componentType: dirType, componentFactory: /**
@type {?} */ ((dirMeta.metadata.componentFactory))
};\n
}\n
 var /**
@type {?} */ dirSummary = /**
@type {?} */ (this._loadSummary(dirType,
CompileSummaryKind.Directive));\n
 if (dirSummary && dirSummary.isComponent) {\n
return {
componentType: dirType, componentFactory: /**
@type {?} */ ((dirSummary.componentFactory))
};\n
}\n
 if (throwIfNotFound) {\n
 throw syntaxError(dirType.name + \" cannot be used as an entry component.\");\n
 }\n
 return null;\n
};\n
/**\n
 * @param {?} provider\n
 * @return {?}\n
 */\n
CompileMetadataResolver.prototype.getProviderMetadata = /**\n
 * @param {?} provider\n
 * @return {?}\n
 */\n
function (provider) {\n
 var /**
@type {?} */ compileDeps = /**
@type {?} */ ((undefined));\n
 var
/**
@type {?} */ compileTypeMetadata = /**
@type {?} */ ((null));\n
 var /**
@type {?} */
compileFactoryMetadata = /**
@type {?} */ ((null));\n
 var /**
@type {?} */ token =
this._getTokenMetadata(provider.token);\n
 if (provider.useClass) {\n
 compileTypeMetadata =
this._getInjectableMetadata(provider.useClass, provider.dependencies);\n
 compileDeps =
compileTypeMetadata.diDeps;\n
 if (provider.token === provider.useClass) {\n
 // use the
compileTypeMetadata as it contains information about lifecycleHooks...\n
 token = { identifier:
compileTypeMetadata
};\n
}\n
} else if (provider.useFactory) {\n
 compileFactoryMetadata
= this._getFactoryMetadata(provider.useFactory, provider.dependencies);\n
 compileDeps =

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compileFactoryMetadata.diDeps;\n }\n return {\n token: token,\n useClass:
compileTypeMetadata,\n useValue: provider.useValue,\n useFactory: compileFactoryMetadata,\n useExisting: provider.useExisting ? this._getTokenMetadata(provider.useExisting) : undefined,\n deps:
compileDeps,\n multi: provider.multi\n };\n};\n/**\n * @param {?} queries\n * @param {?}
isViewQuery\n * @param {?} directiveType\n * @return {?}\n */\n
CompileMetadataResolver.prototype._getQueriesMetadata = /**\n * @param {?} queries\n * @param {?}
isViewQuery\n * @param {?} directiveType\n * @return {?}\n */\n function (queries, isViewQuery,
directiveType) {\n var _this = this;\n var /** @type {?} */ res = [];\n
Object.keys(queries).forEach(function (propertyName) {\n var /** @type {?} */ query =
queries[propertyName];\n if (query.isViewQuery === isViewQuery) {\n
res.push(_this._getQueryMetadata(query, propertyName, directiveType));\n }\n });\n return res;\n
};\n /**\n * @param {?} selector\n * @return {?}\n */\n
CompileMetadataResolver.prototype._queryVarBindings = /**\n * @param {?} selector\n * @return {?}\n
/\n function (selector) {\n return selector.split(/\\s,\\s*/); }\n /**\n * @param {?} q\n * @param {?}
propertyName\n * @param {?} typeOrFunc\n * @return {?}\n */\n
CompileMetadataResolver.prototype._getQueryMetadata = /**\n * @param {?} q\n * @param {?}
propertyName\n * @param {?} typeOrFunc\n * @return {?}\n */\n function (q, propertyName,
typeOrFunc) {\n var _this = this;\n var /** @type {?} */ selectors;\n if (typeof q.selector === 'string')
{\n selectors =\n this._queryVarBindings(q.selector).map(function (varName) {\n
return
_this._getTokenMetadata(varName); });\n } else {\n if (!q.selector) {\n
this._reportError(syntaxError("Can't construct a query for the property '\\\\\\" + propertyName + "\\\\" of '\\\\" +
stringifyType(typeOrFunc) + "\\\\" since the query selector wasn't defined."), typeOrFunc);\n }
selectors =
[];\n } else {\n selectors = [this._getTokenMetadata(q.selector)];\n }\n }\n
return {\n selectors: selectors,\n first: q.first,\n descendants: q.descendants, propertyName:
propertyName,\n read: q.read ? this._getTokenMetadata(q.read) : /** @type {?} */ ((null))\n };\n};\n
/**\n * @param {?} error\n * @param {?=} type\n * @param {?=} otherType\n * @return {?}\n */\n
CompileMetadataResolver.prototype._reportError = /**\n * @param {?} error\n * @param {?=} type\n *
@param {?=} otherType\n * @return {?}\n */\n function (error, type, otherType) {\n if
(this._errorCollector) {\n this._errorCollector(error, type);\n if (otherType) {\n
this._errorCollector(error, otherType);\n }\n } else {\n throw error;\n }\n};\n
return
CompileMetadataResolver;\n})();\n/**\n * @param {?} tree\n * @param {?=} out\n * @return {?}\n */\n
function
flattenArray(tree, out) {\n if (out === void 0) {\n out = [];\n }\n if (tree) {\n for (var /** @type {?} */ i = 0; i <
tree.length; i++) {\n var /** @type {?} */ item = resolveForwardRef(tree[i]);\n if
(Array.isArray(item)) {\n flattenArray(item, out);\n } else {\n out.push(item);\n
 }\n }\n }\n return out;\n}\n/**\n * @param {?} array\n * @return {?}\n */\n
function dedupeArray(array) {\n if (array) {\n return Array.from(new Set(array));\n }\n return [];\n}\n/**\n * @param {?} tree\n *
@return {?}\n */\n
function flattenAndDedupeArray(tree) {\n return dedupeArray(flattenArray(tree));\n}\n/**\n *
@param {?} value\n * @return {?}\n */\n
function isValidType(value) {\n return (value instanceof StaticSymbol)
|| (value instanceof Type);\n}\n/**\n * @param {?} value\n * @param {?} targetIdentifiers\n * @return {?}\n
*/\n
function extractIdentifiers(value, targetIdentifiers) {\n visitValue(value, new _CompileValueConverter(),
targetIdentifiers);\n}\n\nvar _CompileValueConverter = /** @class */ (function (_super) {\n
__extends(_CompileValueConverter, _super);\n function _CompileValueConverter() {\n return _super !==
null && _super.apply(this, arguments) || this;\n }\n /**\n * @param {?} value\n * @param {?}
targetIdentifiers\n * @return {?}\n */\n
_compileValueConverter.prototype.visitOther = /**\n * @param
{?} value\n * @param {?} targetIdentifiers\n * @return {?}\n */\n function (value, targetIdentifiers) {\n
targetIdentifiers.push({ reference: value });\n }\n return
_compileValueConverter;\n})(ValueTransformer);\n/**\n * @param {?} type\n * @return {?}\n */\n
function
stringifyType(type) {\n if (type instanceof StaticSymbol) {\n return type.name + " in " + type.filePath;\n
 }\n}

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}\n else {\n return stringify(type);\n }\n}\n\n/**\n * Indicates that a component is still being loaded in a
synchronous compile.\n * @param {?} compType\n * @return {?}\n */\nfunction
componentStillLoadingError(compType) {\n var /** @type {?} */ error = Error("Can't compile synchronously as
\" + stringify(compType) + \" is still being loaded!\");\n (/** @type {?} */
(error))[ERROR_COMPONENT_TYPE] = compType;\n return error;\n }\n}\n\n/**\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\n/**\n * @enum {number} *\n */\nvar TypeModifier = {\n Const:
0,\n};\n\nTypeModifier[TypeModifier.Const] = \"Const\";\n\n/**\n * @abstract\n */\nvar Type$1 = /** @class */
(function () {\n function Type(modifiers) {\n if (modifiers === void 0) { modifiers = null; }\n
this.modifiers = modifiers;\n if (!modifiers) {\n this.modifiers = [];\n }\n }\n
/**\n * @param
{?} modifier\n * @return {?}\n */\n Type.prototype.hasModifier = /**\n * @param {?} modifier\n *
@return {?}\n */\n function (modifier) { return /** @type {?} */ ((this.modifiers).indexOf(modifier) !== -1;
);\n return Type;\n }());\n\n/**\n * @enum {number} *\n */\nvar BuiltinTypeName = {\n Dynamic: 0,\n Bool: 1,\n
String: 2,\n Int: 3,\n Number: 4,\n Function: 5,\n Inferred:
6,\n};\n\nBuiltinTypeName[BuiltinTypeName.Dynamic] = \"Dynamic\";\n\nBuiltinTypeName[BuiltinTypeName.Bool]
= \"Bool\";\n\nBuiltinTypeName[BuiltinTypeName.String] = \"String\";\n\nBuiltinTypeName[BuiltinTypeName.Int] =
\"Int\";\n\nBuiltinTypeName[BuiltinTypeName.Number] =
\"Number\";\n\nBuiltinTypeName[BuiltinTypeName.Function] =
\"Function\";\n\nBuiltinTypeName[BuiltinTypeName.Inferred] = \"Inferred\";\n\nvar BuiltinType = /** @class */
(function (_super) {\n __extends(BuiltinType, _super);\n function BuiltinType(name, modifiers) {\n if
(modifiers === void 0) { modifiers = null; }\n var _this = _super.call(this, modifiers) || this;\n _this.name =
name;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n
 BuiltinType.prototype.visitType = /**\n * @param {?} visitor\n * @param {?} context\n * @return
{?}\n */\n function (visitor, context) {\n return visitor.visitBuiltinType(this, context);\n };\n return
BuiltinType;\n })(Type$1);\n\nvar ExpressionType = /** @class */ (function (_super) {\n __extends(ExpressionType,
_super);\n function ExpressionType(value, modifiers) {\n if (modifiers === void 0) { modifiers = null; }\n
 var _this = _super.call(this, modifiers) || this;\n _this.value = value;\n return
_this;\n }\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n ExpressionType.prototype.visitType = /**\n * @param {?} visitor\n * @param {?} context\n * @return
{?}\n */\n function (visitor, context) {\n return visitor.visitExpressionType(this, context);\n };\n return
ExpressionType;\n })(Type$1);\n\nvar ArrayType = /** @class */ (function (_super) {\n __extends(ArrayType,
_super);\n function ArrayType(of, modifiers) {\n if (modifiers === void 0) { modifiers = null; }\n var
_this = _super.call(this, modifiers) || this;\n _this.of = of;\n return _this;\n }\n /**\n * @param {?}
visitor\n * @param {?} context\n * @return {?}\n */\n ArrayType.prototype.visitType = /**\n * @param {?}
visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return
visitor.visitArrayType(this, context);\n };\n return ArrayType;\n })(Type$1);\n\nvar MapType = /** @class
*/ (function (_super) {\n __extends(MapType, _super);\n function MapType(valueType, modifiers) {\n if
(modifiers === void 0) { modifiers = null; }\n var _this = _super.call(this, modifiers) || this;\n _this.valueType =
valueType || null;\n return _this;\n }\n /**\n * @param {?} visitor\n * @param {?}
context\n * @return {?}\n */\n MapType.prototype.visitType = /**\n * @param {?} visitor\n * @param {?}
context\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitMapType(this, context);\n
 };\n return MapType;\n })(Type$1);\n\nvar DYNAMIC_TYPE = new
BuiltinType(BuiltinTypeName.Dynamic);\n\nvar INFERRED_TYPE = new
BuiltinType(BuiltinTypeName.Inferred);\n\nvar BOOL_TYPE = new BuiltinType(BuiltinTypeName.Bool);\n\nvar INT_TYPE =
new BuiltinType(BuiltinTypeName.Int);\n\nvar NUMBER_TYPE = new
BuiltinType(BuiltinTypeName.Number);\n\nvar STRING_TYPE = new BuiltinType(BuiltinTypeName.String);\n\nvar
FUNCTION_TYPE = new BuiltinType(BuiltinTypeName.Function);\n\n/**\n * @record\n */\n\n/**\n * @enum

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*^\\n function (rhs, sourceSpan) {\\n return new BinaryOperatorExpr(BinaryOperator.Identical, this, rhs, null,
sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n
Expression.prototype.notIdentical = /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n * @return
{?}\\n *^\\n function (rhs, sourceSpan) {\\n return new BinaryOperatorExpr(BinaryOperator.NotIdentical,
this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n * @return
{?}\\n *^\\n Expression.prototype.minus = /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n *
@return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new BinaryOperatorExpr(BinaryOperator.Minus,
this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n * @return
{?}\\n *^\\n Expression.prototype.plus = /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n *
@return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new BinaryOperatorExpr(BinaryOperator.Plus,
this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n * @return
{?}\\n *^\\n Expression.prototype.divide = /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n *
@return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new BinaryOperatorExpr(BinaryOperator.Divide,
this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n * @return
{?}\\n *^\\n Expression.prototype.multiply = /**\\n * @param {?} rhs\\n * @param {?=} sourceSpan\\n *
@return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new
BinaryOperatorExpr(BinaryOperator.Multiply, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.modulo = /**\\n * @param {?}
rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new
BinaryOperatorExpr(BinaryOperator.Modulo, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.and = /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new
BinaryOperatorExpr(BinaryOperator.And, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.or = /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new
BinaryOperatorExpr(BinaryOperator.Or, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.lower = /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new
BinaryOperatorExpr(BinaryOperator.Lower, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?} rhs\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.lowerEquals = /**\\n * @param {?}
rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return new
BinaryOperatorExpr(BinaryOperator.LowerEquals, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?}
rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.bigger = /**\\n * @param
{?} rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n return
new BinaryOperatorExpr(BinaryOperator.Bigger, this, rhs, null, sourceSpan);\\n };\\n /**\\n * @param {?}
rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.biggerEquals = /**\\n *
@param {?} rhs\\n * @param {?=} sourceSpan\\n * @return {?}\\n *^\\n function (rhs, sourceSpan) {\\n
return new BinaryOperatorExpr(BinaryOperator.BiggerEquals, this, rhs, null, sourceSpan);\\n };\\n /**\\n
* @param {?=} sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.isBlank = /**\\n * @param {?=}
sourceSpan\\n * @return {?}\\n *^\\n function (sourceSpan) {\\n // Note: We use equals by purpose here to
compare to null and undefined in JS.\\n // We use the typed null to allow strictNullChecks to narrow types.\\n
return this.equals(TYPED_NULL_EXPR, sourceSpan);\\n };\\n /**\\n * @param {?} type\\n * @param {?=}
sourceSpan\\n * @return {?}\\n *^\\n Expression.prototype.cast = /**\\n * @param {?} type\\n * @param
{?=} sourceSpan\\n * @return {?}\\n *^\\n function (type, sourceSpan) {\\n return new CastExpr(this, type,
sourceSpan);\\n };\\n /**\\n * @return {?}\\n *^\\n Expression.prototype.toStmt = /**\\n * @return {?}\\n
*^\\n function () { return new ExpressionStatement(this, null); };\\n return Expression;\\n }();\\n /** @enum
{number} *^\\nvar BuiltinVar = {\\n This: 0,\\n Super: 1,\\n CatchError: 2,\\n CatchStack:
3,\\n };\\nBuiltinVar[BuiltinVar.This] = \"This\";\\nBuiltinVar[BuiltinVar.Super] =

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"Super";\nBuiltinVar[BuiltinVar.CatchError] = "CatchError";\nBuiltinVar[BuiltinVar.CatchStack] =
"CatchStack";\nvar ReadVarExpr = /** @class */ (function (_super) {\n __extends(ReadVarExpr, _super);\n function ReadVarExpr(name, type, sourceSpan) {\n var _this = _super.call(this, type, sourceSpan) || this;\n if (typeof name === 'string') {\n _this.name = name;\n _this.builtin = null;\n } else {\n _this.name = null;\n _this.builtin = /** @type {?} */ (name);\n }\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n ReadVarExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof ReadVarExpr && this.name === e.name &&
this.builtin === e.builtin;\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n ReadVarExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitReadVarExpr(this, context);\n };\n /**\n * @param {?} value\n * @return {?}\n */\n ReadVarExpr.prototype.set = /**\n * @param {?}
value\n * @return {?}\n */\n function (value) {\n if (!this.name) {\n throw new Error("Built in
variable \" + this.builtin + \" can not be assigned to.");\n }\n return new WriteVarExpr(this.name, value,
null, this.sourceSpan);\n };\n return ReadVarExpr;\n})(Expression));\nvar WriteVarExpr = /** @class */
(function (_super) {\n __extends(WriteVarExpr, _super);\n function WriteVarExpr(name, value, type,
sourceSpan) {\n var _this = _super.call(this, type || value.type, sourceSpan) || this;\n _this.name = name;\n _this.value = value;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n WriteVarExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof WriteVarExpr && this.name === e.name && this.value.isEquivalent(e.value);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n WriteVarExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return
{?}\n */\n function (visitor, context) {\n return visitor.visitWriteVarExpr(this, context);\n };\n /**\n * @param {?=} type\n * @param {?=} modifiers\n * @return {?}\n */\n WriteVarExpr.prototype.toDeclStmt = /**\n * @param {?=} type\n * @param {?=} modifiers\n * @return
{?}\n */\n function (type, modifiers) {\n return new DeclareVarStmt(this.name, this.value, type, modifiers,
this.sourceSpan);\n };\n return WriteVarExpr;\n})(Expression));\nvar WriteKeyExpr = /** @class */ (function
(_super) {\n __extends(WriteKeyExpr, _super);\n function WriteKeyExpr(receiver, index, value, type,
sourceSpan) {\n var _this = _super.call(this, type || value.type, sourceSpan) || this;\n _this.receiver =
receiver;\n _this.index = index;\n _this.value = value;\n return _this;\n }\n /**\n * @param {?}
e\n * @return {?}\n */\n WriteKeyExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return
{?}\n */\n function (e) {\n return e instanceof WriteKeyExpr && this.receiver.isEquivalent(e.receiver)
&&\n this.index.isEquivalent(e.index) && this.value.isEquivalent(e.value);\n };\n /**\n * @param {?}
visitor\n * @param {?} context\n * @return {?}\n */\n WriteKeyExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n
return visitor.visitWriteKeyExpr(this, context);\n };\n return WriteKeyExpr;\n})(Expression));\nvar
WritePropExpr = /** @class */ (function (_super) {\n __extends(WritePropExpr, _super);\n function
WritePropExpr(receiver, name, value, type, sourceSpan) {\n var _this = _super.call(this, type || value.type,
sourceSpan) || this;\n _this.receiver = receiver;\n _this.name = name;\n _this.value = value;\n return
_this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n WritePropExpr.prototype.isEquivalent =
/**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof WritePropExpr &&
this.receiver.isEquivalent(e.receiver) &&\n this.name === e.name && this.value.isEquivalent(e.value);\n
 };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n WritePropExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return
{?}\n */\n function (visitor, context) {\n return visitor.visitWritePropExpr(this, context);\n };\n return
WritePropExpr;\n})(Expression));\n/** @enum {number} */\nvar BuiltinMethod = {\n ConcatArray: 0,\n SubscribeObservable: 1,\n Bind: 2,\n};\nBuiltinMethod[BuiltinMethod.ConcatArray] =
"ConcatArray";\nBuiltinMethod[BuiltinMethod.SubscribeObservable] =
"SubscribeObservable";\nBuiltinMethod[BuiltinMethod.Bind] = "Bind";\nvar InvokeMethodExpr = /** @class

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*/ (function (_super) {\n __extends(InvokeMethodExpr, _super);\n function InvokeMethodExpr(receiver,
method, args, type, sourceSpan) {\n var _this = _super.call(this, type, sourceSpan) || this;\n _this.receiver =
receiver;\n _this.args = args;\n if (typeof method === 'string') {\n _this.name = method;\n _this.builtin = null;\n }\n else {\n _this.name = null;\n _this.builtin = /** @type {?} */
(method);\n }\n return _this;\n }\n /**\n * @param {?} e\n * @return {?} \n */\n InvokeMethodExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?} \n */\n */\n function (e) {\n return e instanceof InvokeMethodExpr && this.receiver.isEquivalent(e.receiver) &&\n this.name ===
e.name && this.builtin === e.builtin && areAllEquivalent(this.args, e.args);\n };\n /**\n * @param {?}
visitor\n * @param {?} context\n * @return {?} \n */\n */\n InvokeMethodExpr.prototype.visitExpression =
/**\n * @param {?} visitor\n * @param {?} context\n * @return {?} \n */\n */\n function (visitor, context)
{\n return visitor.visitInvokeMethodExpr(this, context);\n };\n return
InvokeMethodExpr;\n})(Expression));\nvar InvokeFunctionExpr = /** @class */ (function (_super) {\n
__extends(InvokeFunctionExpr, _super);\n function InvokeFunctionExpr(fn, args, type, sourceSpan) {\n var
_this = _super.call(this, type, sourceSpan) || this;\n _this.fn = fn;\n _this.args = args;\n return _this;\n
 }\n /**\n * @param {?} e\n * @return {?} \n */\n */\n InvokeFunctionExpr.prototype.isEquivalent = /**\n
 * @param {?} e\n * @return {?} \n */\n */\n function (e) {\n return e instanceof InvokeFunctionExpr &&
this.fn.isEquivalent(e.fn) &&\n areAllEquivalent(this.args, e.args);\n };\n /**\n * @param {?} visitor\n
 * @param {?} context\n * @return {?} \n */\n */\n InvokeFunctionExpr.prototype.visitExpression = /**\n
 * @param {?} visitor\n * @param {?} context\n * @return {?} \n */\n */\n function (visitor, context) {\n
return visitor.visitInvokeFunctionExpr(this, context);\n };\n return InvokeFunctionExpr;\n})(Expression));\nvar
InstantiateExpr = /** @class */ (function (_super) {\n __extends(InstantiateExpr, _super);\n function
InstantiateExpr(classExpr, args, type, sourceSpan) {\n var _this = _super.call(this, type, sourceSpan) || this;\n
 _this.classExpr = classExpr;\n _this.args = args;\n return _this;\n }\n /**\n * @param {?} e\n
 * @return {?} \n */\n */\n InstantiateExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?} \n
 */\n */\n function (e) {\n return e instanceof InstantiateExpr && this.classExpr.isEquivalent(e.classExpr) &&\n
 areAllEquivalent(this.args, e.args);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n
 * @return {?} \n */\n */\n InstantiateExpr.prototype.visitExpression = /**\n * @param {?} visitor\n
 * @param {?} context\n * @return {?} \n */\n */\n function (visitor, context) {\n return visitor.visitInstantiateExpr(this,
context);\n };\n return InstantiateExpr;\n})(Expression));\nvar LiteralExpr = /** @class */ (function (_super) {\n
__extends(LiteralExpr, _super);\n function LiteralExpr(value, type, sourceSpan) {\n var _this =
_super.call(this, type, sourceSpan) || this;\n _this.value = value;\n return _this;\n }\n /**\n * @param
 {?} e\n * @return {?} \n */\n */\n LiteralExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return
 {?} \n */\n */\n function (e) {\n return e instanceof LiteralExpr && this.value === e.value;\n };\n /**\n
 * @param {?} visitor\n * @param {?} context\n * @return {?} \n */\n */\n LiteralExpr.prototype.visitExpression
= /**\n * @param {?} visitor\n * @param {?} context\n * @return {?} \n */\n */\n function (visitor, context)
{\n return visitor.visitLiteralExpr(this, context);\n };\n return LiteralExpr;\n})(Expression));\nvar
ExternalExpr = /** @class */ (function (_super) {\n __extends(ExternalExpr, _super);\n function
ExternalExpr(value, type, typeParams, sourceSpan) {\n if (typeParams === void 0) { typeParams = null; }\n var
_this = _super.call(this, type, sourceSpan) || this;\n _this.value = value;\n _this.typeParams =
typeParams;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?} \n */\n */\n ExternalExpr.prototype.isEquivalent = /**\n
 * @param {?} e\n * @return {?} \n */\n */\n function (e) {\n return e instanceof ExternalExpr && this.value.name === e.value.name &&\n
 this.value.moduleName ===
e.value.moduleName && this.value.runtime === e.value.runtime;\n };\n /**\n * @param {?} visitor\n
 * @param {?} context\n * @return {?} \n */\n */\n ExternalExpr.prototype.visitExpression = /**\n
 * @param {?} visitor\n * @param {?} context\n * @return {?} \n */\n */\n function (visitor, context) {\n
return
visitor.visitExternalExpr(this, context);\n };\n return ExternalExpr;\n})(Expression));\nvar ExternalReference =
/** @class */ (function () {\n function ExternalReference(moduleName, name, runtime) {\n this.moduleName
= moduleName;\n this.name = name;\n this.runtime = runtime;\n }\n return

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ExternalReference;\n})();\nvar ConditionalExpr = /** @class */ (function (_super) {\n
 __extends(ConditionalExpr, _super);\n function ConditionalExpr(condition, trueCase, falseCase, type,\n sourceSpan) {\n if (falseCase === void 0) { falseCase = null; }\n var _this = _super.call(this, type ||\n trueCase.type, sourceSpan) || this;\n _this.condition = condition;\n _this.falseCase = falseCase;\n _this.trueCase = trueCase;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n ConditionalExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof ConditionalExpr && this.condition.isEquivalent(e.condition) &&\n this.trueCase.isEquivalent(e.trueCase) && nullSafeIsEquivalent(this.falseCase, e.falseCase);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n ConditionalExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitConditionalExpr(this, context);\n };\n return ConditionalExpr;\n})(Expression));\nvar NotExpr = /** @class */ (function (_super) {\n
 __extends(NotExpr, _super);\n function NotExpr(condition, sourceSpan) {\n var _this = _super.call(this,\n BOOL_TYPE, sourceSpan) || this;\n _this.condition = condition;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n NotExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof NotExpr &&\n this.condition.isEquivalent(e.condition);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n NotExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitNotExpr(this, context);\n };\n return NotExpr;\n})(Expression));\nvar AssertNotNull = /** @class */ (function (_super) {\n
 __extends(AssertNotNull, _super);\n function AssertNotNull(condition, sourceSpan) {\n var _this =\n _super.call(this, condition.type, sourceSpan) || this;\n _this.condition = condition;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n AssertNotNull.prototype.isEquivalent = /**\n * @param\
 {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof AssertNotNull &&\n this.condition.isEquivalent(e.condition);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n AssertNotNull.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitAssertNotNullExpr(this,\n context);\n };\n return AssertNotNull;\n})(Expression));\nvar CastExpr = /** @class */ (function (_super) {\n
 __extends(CastExpr, _super);\n function CastExpr(value, type, sourceSpan) {\n var _this = _super.call(this,\n type, sourceSpan) || this;\n _this.value = value;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n CastExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof CastExpr && this.value.isEquivalent(e.value);\n };\n /**\n * @param\
 {?} visitor\n * @param {?} context\n * @return {?}\n */\n CastExpr.prototype.visitExpression = /**\n * @param\
 {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitCastExpr(this, context);\n };\n return CastExpr;\n})(Expression));\nvar FnParam = /** @class\
 */ (function () {\n function FnParam(name, type) {\n if (type === void 0) { type = null; }\n this.name =\n name;\n this.type = type;\n }\n /**\n * @param {?} param\n * @return {?}\n */\n FnParam.prototype.isEquivalent = /**\n * @param {?} param\n * @return {?}\n */\n function (param) {\n return this.name === param.name;\n };\n return FnParam;\n})();\nvar FunctionExpr = /** @class */ (function\n (_super) {\n __extends(FunctionExpr, _super);\n function FunctionExpr(params, statements, type, sourceSpan)\n {\n var _this = _super.call(this, type, sourceSpan) || this;\n _this.params = params;\n _this.statements =\n statements;\n return _this;\n }\n /**\n * @param {?} e\n * @return {?}\n */\n FunctionExpr.prototype.isEquivalent = /**\n * @param {?} e\n * @return {?}\n */\n function (e) {\n return e instanceof FunctionExpr && areAllEquivalent(this.params, e.params) &&\n areAllEquivalent(this.statements, e.statements);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n FunctionExpr.prototype.visitExpression = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n function (visitor, context) {\n return\n visitor.visitFunctionExpr(this, context);\n };\n /**\n * @param {?} name\n * @param {?=} modifiers\n */

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@return {?} \n * \n FunctionExpr.prototype.toDeclStmt = /** \n * @param {?} name \n * @param {?=}
modifiers \n * @return {?} \n * \n function (name, modifiers) { \n if (modifiers === void 0) { modifiers =
null; } \n return new DeclareFunctionStmt(name, this.params, this.statements, this.type, modifiers,
this.sourceSpan); \n }; \n return FunctionExpr; \n } (Expression)); \nvar BinaryOperatorExpr = /** @class */
(function (_super) { \n __extends(BinaryOperatorExpr, _super); \n function BinaryOperatorExpr(operator, lhs,
rhs, type, sourceSpan) { \n var _this = _super.call(this, type || lhs.type, sourceSpan) || this; \n _this.operator =
operator; \n _this.rhs = rhs; \n _this.lhs = lhs; \n return _this; \n } \n /** \n * @param {?} e \n *
@return {?} \n * \n BinaryOperatorExpr.prototype.isEquivalent = /** \n * @param {?} e \n * @return {?} \n
* \n function (e) { \n return e instanceof BinaryOperatorExpr && this.operator === e.operator && \n
this.lhs.isEquivalent(e.lhs) && this.rhs.isEquivalent(e.rhs); \n }; \n /** \n * @param {?} visitor \n * @param
{?} context \n * @return {?} \n * \n BinaryOperatorExpr.prototype.visitExpression = /** \n * @param {?}
visitor \n * @param {?} context \n * @return {?} \n * \n function (visitor, context) { \n return
visitor.visitBinaryOperatorExpr(this, context); \n }; \n return BinaryOperatorExpr; \n } (Expression)); \nvar
ReadPropExpr = /** @class */ (function (_super) { \n __extends(ReadPropExpr, _super); \n function
ReadPropExpr(receiver, name, type, sourceSpan) { \n var _this = _super.call(this, type, sourceSpan) || this; \n
_this.receiver = receiver; \n _this.name = name; \n return _this; \n } \n /** \n * @param {?} e \n *
@return {?} \n * \n ReadPropExpr.prototype.isEquivalent = /** \n * @param {?} e \n * @return {?} \n
* \n function (e) { \n return e instanceof ReadPropExpr && this.receiver.isEquivalent(e.receiver) && \n
this.name === e.name; \n }; \n /** \n * @param {?} visitor \n * @param {?} context \n * @return {?} \n
* \n ReadPropExpr.prototype.visitExpression = /** \n * @param {?} visitor \n * @param {?} context \n *
@return {?} \n * \n function (visitor, context) { \n return visitor.visitReadPropExpr(this, context); \n }; \n
/** \n * @param {?} value \n * @return {?} \n * \n ReadPropExpr.prototype.set = /** \n * @param {?}
value \n * @return {?} \n * \n function (value) { \n return new WritePropExpr(this.receiver, this.name,
value, null, this.sourceSpan); \n }; \n return ReadPropExpr; \n } (Expression)); \nvar ReadKeyExpr = /** @class */
(function (_super) { \n __extends(ReadKeyExpr, _super); \n function ReadKeyExpr(receiver, index, type,
sourceSpan) { \n var _this = _super.call(this, type, sourceSpan) || this; \n _this.receiver = receiver; \n
_this.index = index; \n return _this; \n } \n /** \n * @param {?} e \n * @return {?} \n * \n
ReadKeyExpr.prototype.isEquivalent = /** \n * @param {?} e \n * @return {?} \n * \n function (e) { \n
return e instanceof ReadKeyExpr && this.receiver.isEquivalent(e.receiver) && \n
this.index.isEquivalent(e.index); \n }; \n /** \n * @param {?} visitor \n * @param {?} context \n * @return
{?} \n * \n ReadKeyExpr.prototype.visitExpression = /** \n * @param {?} visitor \n * @param {?}
context \n * @return {?} \n * \n function (visitor, context) { \n return visitor.visitReadKeyExpr(this,
context); \n }; \n /** \n * @param {?} value \n * @return {?} \n * \n ReadKeyExpr.prototype.set = /** \n
* @param {?} value \n * @return {?} \n * \n function (value) { \n return new WriteKeyExpr(this.receiver,
this.index, value, null, this.sourceSpan); \n }; \n return ReadKeyExpr; \n } (Expression)); \nvar LiteralArrayExpr =
/** @class */ (function (_super) { \n __extends(LiteralArrayExpr, _super); \n function LiteralArrayExpr(entries,
type, sourceSpan) { \n var _this = _super.call(this, type, sourceSpan) || this; \n _this.entries = entries; \n
return _this; \n } \n /** \n * @param {?} e \n * @return {?} \n * \n
LiteralArrayExpr.prototype.isEquivalent = /** \n * @param {?} e \n * @return {?} \n * \n function (e) { \n
return e instanceof LiteralArrayExpr && areAllEquivalent(this.entries, e.entries); \n }; \n /** \n * @param {?}
visitor \n * @param {?} context \n * @return {?} \n * \n LiteralArrayExpr.prototype.visitExpression = /** \n
* @param {?} visitor \n * @param {?} context \n * @return {?} \n * \n function (visitor, context) { \n
return visitor.visitLiteralArrayExpr(this, context); \n }; \n return LiteralArrayExpr; \n } (Expression)); \nvar
LiteralMapEntry = /** @class */ (function () { \n function LiteralMapEntry(key, value, quoted) { \n this.key =
key; \n this.value = value; \n this.quoted = quoted; \n } \n /** \n * @param {?} e \n * @return {?} \n
* \n LiteralMapEntry.prototype.isEquivalent = /** \n * @param {?} e \n * @return {?} \n * \n function (e)
{ \n return this.key === e.key && this.value.isEquivalent(e.value); \n }; \n return
LiteralMapEntry; \n } ()); \nvar LiteralMapExpr = /** @class */ (function (_super) { \n __extends(LiteralMapExpr,

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};\n return DeclareFunctionStmt;\n}(Statement));\nvar ExpressionStatement = /** @class */ (function (_super) {\n __extends(ExpressionStatement, _super);\n function ExpressionStatement(expr, sourceSpan) {\n var _this = _super.call(this, null, sourceSpan) || this;\n _this.expr = expr;\n return _this;\n }\n /**\n * @param {?}\n * @return {?}\n */\n ExpressionStatement.prototype.isEquivalent = /**\n * @param {?}\n * @return {?}\n */\n function (stmt) {\n return stmt instanceof ExpressionStatement && this.expr.isEquivalent(stmt.expr);\n };\n /**\n * @param {?}\n * @param {?}\n * @return {?}\n */\n ExpressionStatement.prototype.visitStatement = /**\n * @param {?}\n * @param {?}\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitExpressionStmt(this, context);\n };\n return ExpressionStatement;\n})(Statement));\nvar ReturnStatement = /** @class */ (function (_super) {\n __extends(ReturnStatement, _super);\n function ReturnStatement(value, sourceSpan) {\n var _this = _super.call(this, null, sourceSpan) || this;\n _this.value = value;\n return _this;\n }\n /**\n * @param {?}\n * @return {?}\n */\n ReturnStatement.prototype.isEquivalent = /**\n * @param {?}\n * @return {?}\n */\n function (stmt) {\n return stmt instanceof ReturnStatement && this.value.isEquivalent(stmt.value);\n };\n /**\n * @param {?}\n * @param {?}\n * @return {?}\n */\n ReturnStatement.prototype.visitStatement = /**\n * @param {?}\n * @param {?}\n * @return {?}\n */\n function (visitor, context) {\n return visitor.visitReturnStmt(this, context);\n };\n return ReturnStatement;\n})(Statement));\nvar AbstractClassPart = /** @class */ (function () {\n function AbstractClassPart(type, modifiers) {\n this.modifiers = modifiers;\n if (!modifiers) {\n this.modifiers = [];\n }\n this.type = type || null;\n }\n /**\n * @param {?}\n * @return {?}\n */\n AbstractClassPart.prototype.hasModifier = /**\n * @param {?}\n * @return {?}\n */\n function (modifier) {\n return /** @type {?} */ ((this.modifiers).indexOf(modifier) !== -1);\n };\n return AbstractClassPart;\n})();\nvar ClassField = /** @class */ (function (_super) {\n __extends(ClassField, _super);\n function ClassField(name, type, modifiers) {\n if (modifiers === void 0) { modifiers = null; }\n var _this = _super.call(this, type, modifiers) || this;\n _this.name = name;\n return _this;\n }\n /**\n * @param {?}\n * @return {?}\n */\n ClassField.prototype.isEquivalent = /**\n * @param {?}\n * @return {?}\n */\n function (f) {\n return this.name === f.name;\n };\n return ClassField;\n})(AbstractClassPart));\nvar ClassMethod = /** @class */ (function (_super) {\n __extends(ClassMethod, _super);\n function ClassMethod(name, params, body, type, modifiers) {\n if (modifiers === void 0) { modifiers = null; }\n var _this = _super.call(this, type, modifiers) || this;\n _this.name = name;\n _this.params = params;\n _this.body = body;\n return _this;\n }\n /**\n * @param {?}\n * @return {?}\n */\n ClassMethod.prototype.isEquivalent = /**\n * @param {?}\n * @return {?}\n */\n function (m) {\n return this.name === m.name && areAllEquivalent(this.body, m.body);\n };\n return ClassMethod;\n})(AbstractClassPart));\nvar ClassGetter = /** @class */ (function (_super) {\n __extends(ClassGetter, _super);\n function ClassGetter(name, body, type, modifiers) {\n if (modifiers === void 0) { modifiers = null; }\n var _this = _super.call(this, type, modifiers) || this;\n _this.name = name;\n _this.body = body;\n return _this;\n }\n /**\n * @param {?}\n * @return {?}\n */\n ClassGetter.prototype.isEquivalent = /**\n * @param {?}\n * @return {?}\n */\n function (m) {\n return this.name === m.name && areAllEquivalent(this.body, m.body);\n };\n return ClassGetter;\n})(AbstractClassPart));\nvar ClassStmt = /** @class */ (function (_super) {\n __extends(ClassStmt, _super);\n function ClassStmt(name, parent, fields, getters, constructorMethod, methods, modifiers, sourceSpan) {\n if (modifiers === void 0) { modifiers = null; }\n var _this = _super.call(this, modifiers, sourceSpan) || this;\n _this.name = name;\n _this.parent = parent;\n _this.fields = fields;\n _this.getters = getters;\n _this.constructorMethod = constructorMethod;\n _this.methods = methods;\n return _this;\n }\n /**\n * @param {?}\n * @return {?}\n */\n ClassStmt.prototype.isEquivalent = /**\n * @param {?}\n * @return {?}\n */\n function (stmt) {\n return stmt instanceof ClassStmt && this.name === stmt.name && nullSafeIsEquivalent(this.parent, stmt.parent) && areAllEquivalent(this.fields, stmt.fields) && areAllEquivalent(this.getters, stmt.getters) && this.constructorMethod.isEquivalent(stmt.constructorMethod) && areAllEquivalent(this.methods,

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stmt.methods);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n ClassStmt.prototype.visitStatement = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * function (visitor, context) {\n return visitor.visitDeclareClassStmt(this, context);\n };\n return\n ClassStmt;\n })(Statement));\n nvar IfStmt = /** @class */ (function (_super) {\n __extends(IfStmt, _super);\n function IfStmt(condition, trueCase, falseCase, sourceSpan) {\n if (falseCase === void 0) { falseCase = []; }\n var _this = _super.call(this, null, sourceSpan) || this;\n _this.condition = condition;\n _this.trueCase =\n trueCase;\n _this.falseCase = falseCase;\n return _this;\n }\n /**\n * @param {?} stmt\n * @return\n {?}\n */\n * IfStmt.prototype.isEquivalent = /**\n * @param {?} stmt\n * @return {?}\n */\n * function\n (stmt) {\n return stmt instanceof IfStmt && this.condition.isEquivalent(stmt.condition) &&\n areAllEquivalent(this.trueCase, stmt.trueCase) &&\n areAllEquivalent(this.falseCase, stmt.falseCase);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * IfStmt.prototype.visitStatement = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * function (visitor, context) {\n return visitor.visitIfStmt(this, context);\n };\n return\n IfStmt;\n })(Statement));\n nvar CommentStmt = /** @class */ (function (_super) {\n __extends(CommentStmt,\n _super);\n function CommentStmt(comment, sourceSpan) {\n var _this = _super.call(this, null, sourceSpan) ||\n this;\n _this.comment = comment;\n return _this;\n }\n /**\n * @param {?} stmt\n * @return {?}\n */\n * CommentStmt.prototype.isEquivalent = /**\n * @param {?} stmt\n * @return {?}\n */\n * function\n (stmt) {\n return stmt instanceof CommentStmt;\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * CommentStmt.prototype.visitStatement = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * function (visitor, context) {\n return visitor.visitCommentStmt(this,\n context);\n };\n return\n CommentStmt;\n })(Statement));\n nvar TryCatchStmt = /** @class */ (function (_super) {\n __extends(TryCatchStmt, _super);\n function TryCatchStmt(bodyStmts, catchStmts, sourceSpan) {\n var\n _this = _super.call(this, null, sourceSpan) || this;\n _this.bodyStmts = bodyStmts;\n _this.catchStmts =\n catchStmts;\n return _this;\n }\n /**\n * @param {?} stmt\n * @return {?}\n */\n * TryCatchStmt.prototype.isEquivalent = /**\n * @param {?} stmt\n * @return {?}\n */\n * function (stmt)\n {\n return stmt instanceof TryCatchStmt && areAllEquivalent(this.bodyStmts, stmt.bodyStmts) &&\n areAllEquivalent(this.catchStmts, stmt.catchStmts);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * TryCatchStmt.prototype.visitStatement = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * function (visitor, context) {\n return\n visitor.visitTryCatchStmt(this, context);\n };\n return\n TryCatchStmt;\n })(Statement));\n nvar ThrowStmt = /**\n @class */ (function (_super) {\n __extends(ThrowStmt, _super);\n function ThrowStmt(error, sourceSpan) {\n var _this = _super.call(this, null, sourceSpan) || this;\n _this.error = error;\n return _this;\n }\n /**\n * @param {?} stmt\n * @return {?}\n */\n * ThrowStmt.prototype.isEquivalent = /**\n * @param {?} stmt\n * @return {?}\n */\n * function (stmt) {\n return stmt instanceof TryCatchStmt &&\n this.error.isEquivalent(stmt.error);\n };\n /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * ThrowStmt.prototype.visitStatement = /**\n * @param {?} visitor\n * @param {?} context\n * @return {?}\n */\n * function (visitor, context) {\n return visitor.visitThrowStmt(this,\n context);\n };\n return\n ThrowStmt;\n })(Statement));\n /**\n * @record\n */\n nvar AstTransformer$1 = /**\n @class */ (function () {\n function AstTransformer() {\n }\n /**\n * @param {?} expr\n * @param {?} context\n * @return {?}\n */\n * AstTransformer.prototype.transformExpr = /**\n * @param {?} expr\n * @param {?} context\n * @return {?}\n */\n * function (expr, context) {\n return expr;\n };\n /**\n * @param\n {?}\n stmt\n * @param {?} context\n * @return {?}\n */\n * AstTransformer.prototype.transformStmt = /**\n * @param\n {?}\n stmt\n * @param {?} context\n * @return {?}\n */\n * function (stmt, context) {\n return stmt;\n };\n /**\n * @param\n {?}\n ast\n * @param {?} context\n * @return {?}\n */\n * AstTransformer.prototype.visitReadVarExpr = /**\n * @param\n {?}\n ast\n * @param {?} context\n * @return\n {?}\n */\n * function (ast, context) {\n return this.transformExpr(ast, context);\n };\n /**\n * @param\n {?}\n expr\n * @param\n {?}\n context\n * @return\n {?}\n */\n * AstTransformer.prototype.visitWriteVarExpr = /**\n * @param\n {?}\n expr\n * @param\n {?}\n context\n * @return\n {?}\n */\n * function (expr, context) {\n return

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this.transformExpr(new WriteVarExpr(expr.name, expr.value.visitExpression(this, context), expr.type,
expr.sourceSpan), context);
};
/**
 * @param {?} expr
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitWriteKeyExpr = /**
 * @param {?} expr
 * @param {?} context
 * @return {?}
 */
function (expr, context) {
return this.transformExpr(new
WriteKeyExpr(expr.receiver.visitExpression(this, context), expr.index.visitExpression(this, context),
expr.value.visitExpression(this, context), expr.type, expr.sourceSpan), context);
};
/**
 * @param {?}
expr
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitWritePropExpr =
/**
 * @param {?} expr
 * @param {?} context
 * @return {?}
 */
function (expr, context) {
return this.transformExpr(new WritePropExpr(expr.receiver.visitExpression(this, context), expr.name,
expr.value.visitExpression(this, context), expr.type, expr.sourceSpan), context);
};
/**
 * @param {?}
ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitInvokeMethodExpr =
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
var /** @type {?} */ method = ast.builtin || ast.name;
return this.transformExpr(new
InvokeMethodExpr(ast.receiver.visitExpression(this, context), /** @type {?} */ ((method)),
this.visitAllExpressions(ast.args, context), ast.type, ast.sourceSpan), context);
};
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitInvokeFunctionExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return
this.transformExpr(new InvokeFunctionExpr(ast.fn.visitExpression(this, context), this.visitAllExpressions(ast.args,
context), ast.type, ast.sourceSpan), context);
};
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitInstantiateExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(new
InstantiateExpr(ast.classExpr.visitExpression(this, context), this.visitAllExpressions(ast.args, context), ast.type,
ast.sourceSpan), context);
};
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitLiteralExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(ast, context);
};
/**
 * @param
 {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitExternalExpr =
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(ast, context);
};
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitConditionalExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(new
ConditionalExpr(ast.condition.visitExpression(this, context), ast.trueCase.visitExpression(this, context), /** @type
 {?} */ ((ast.falseCase)).visitExpression(this, context), ast.type, ast.sourceSpan), context);
};
/**
 * @param
 {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitNotExpr =
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(new NotExpr(ast.condition.visitExpression(this, context), ast.sourceSpan), context);
};
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitAssertNotNullExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(new
AssertNotNull(ast.condition.visitExpression(this, context), ast.sourceSpan), context);
};
/**
 * @param
 {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitCastExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return
this.transformExpr(new CastExpr(ast.value.visitExpression(this, context), ast.type, ast.sourceSpan), context);
};
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitFunctionExpr = /**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {
return this.transformExpr(new FunctionExpr(ast.params,
this.visitAllStatements(ast.statements, context), ast.type, ast.sourceSpan), context);
};
/**
 * @param {?}
ast
 * @param {?} context
 * @return {?}
 */
AstTransformer.prototype.visitBinaryOperatorExpr =
/**
 * @param {?} ast
 * @param {?} context
 * @return {?}
 */
function (ast, context) {

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```

return this.transformExpr(new BinaryOperatorExpr(ast.operator, ast.lhs.visitExpression(this, context),
ast.rhs.visitExpression(this, context), ast.type, ast.sourceSpan), context);\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitReadPropExpr = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return
this.transformExpr(new ReadPropExpr(ast.receiver.visitExpression(this, context), ast.name, ast.type,
ast.sourceSpan), context);\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitReadKeyExpr = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return this.transformExpr(new
ReadKeyExpr(ast.receiver.visitExpression(this, context), ast.index.visitExpression(this, context), ast.type,
ast.sourceSpan), context);\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitLiteralArrayExpr = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n return this.transformExpr(new
LiteralArrayExpr(this.visitAllExpressions(ast.entries, context), ast.type, ast.sourceSpan), context);\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitLiteralMapExpr = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n var _this = this;\n var /** @type {?} */ entries =
ast.entries.map(function (entry) {\n return new LiteralMapEntry(entry.key, entry.value.visitExpression(_this,
context), entry.quoted);\n });\n var /** @type {?} */ mapType = new MapType(ast.valueType, null);\n return this.transformExpr(new LiteralMapExpr(entries, mapType, ast.sourceSpan), context);\n }; \n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitCommaExpr = /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n */\n function (ast, context) {\n return this.transformExpr(new
CommaExpr(this.visitAllExpressions(ast.parts, context), ast.sourceSpan), context);\n }; \n /**\n * @param {?}
exprs\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitAllExpressions =
/**\n * @param {?} exprs\n * @param {?} context\n * @return {?}\n */\n function (exprs, context) {\n
var _this = this;\n return exprs.map(function (expr) { return expr.visitExpression(_this, context); });\n }; \n
/**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitDeclareVarStmt = /**\n * @param {?} stmt\n * @param {?} context\n * @return
{?}\n */\n function (stmt, context) {\n return this.transformStmt(new DeclareVarStmt(stmt.name,
stmt.value.visitExpression(this, context), stmt.type, stmt.modifiers, stmt.sourceSpan), context);\n }; \n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitDeclareFunctionStmt = /**\n * @param {?} stmt\n * @param {?} context\n * @return
{?}\n */\n function (stmt, context) {\n return this.transformStmt(new
DeclareFunctionStmt(stmt.name, stmt.params, this.visitAllStatements(stmt.statements, context), stmt.type,
stmt.modifiers, stmt.sourceSpan), context);\n }; \n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitExpressionStmt = /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n */\n function (stmt, context) {\n return this.transformStmt(new
ExpressionStatement(stmt.expr.visitExpression(this, context), stmt.sourceSpan), context);\n }; \n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitReturnStmt = /**\n * @param {?} stmt\n * @param {?} context\n * @return
{?}\n */\n function (stmt, context) {\n return this.transformStmt(new
ReturnStatement(stmt.value.visitExpression(this, context), stmt.sourceSpan), context);\n }; \n /**\n * @param
{?} stmt\n * @param {?} context\n * @return {?}\n */\n AstTransformer.prototype.visitDeclareClassStmt =
/**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n */\n function (stmt, context) {\n
var _this = this;\n var /** @type {?} */ parent = /** @type {?} */ ((stmt.parent)).visitExpression(this,
context);\n var /** @type {?} */ getters = stmt.getters.map(function (getter) {\n return new
ClassGetter(getter.name, _this.visitAllStatements(getter.body, context), getter.type, getter.modifiers);\n });\n
var /** @type {?} */ ctorMethod = stmt.constructorMethod &&\n new

```



```

ast\n * @param {?} context\n * @return {?}\n *\n function (ast, context) {\n
ast.receiver.visitExpression(this, context);\n ast.index.visitExpression(this, context);\n
ast.value.visitExpression(this, context);\n return this.visitExpression(ast, context);\n };\n /**\n * @param
{?}\n * @param {?} context\n * @return {?}\n *\n RecursiveAstVisitor.prototype.visitWritePropExpr
= /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *\n function (ast, context) {\n
ast.receiver.visitExpression(this, context);\n ast.value.visitExpression(this, context);\n return
this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *\n RecursiveAstVisitor.prototype.visitInvokeMethodExpr = /**\n * @param {?} ast\n * @param
{?}\n * @return {?}\n *\n function (ast, context) {\n ast.receiver.visitExpression(this,
context);\n this.visitAllExpressions(ast.args, context);\n return this.visitExpression(ast, context);\n };\n
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitInvokeFunctionExpr = /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *\n function (ast, context) {\n ast.fn.visitExpression(this, context);\n
this.visitAllExpressions(ast.args, context);\n return this.visitExpression(ast, context);\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitInstantiateExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *\n function (ast, context) {\n ast.classExpr.visitExpression(this, context);\n
this.visitAllExpressions(ast.args, context);\n return this.visitExpression(ast, context);\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitLiteralExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *\n function (ast, context) {\n return this.visitExpression(ast, context);\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitExternalExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *\n function (ast, context) {\n var _this = this;\n if (ast.typeParams) {\n
ast.typeParams.forEach(function (type) { return type.visitType(_this, context); });\n };\n return
this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *\n RecursiveAstVisitor.prototype.visitConditionalExpr = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *\n function (ast, context) {\n ast.condition.visitExpression(this, context);\n
ast.trueCase.visitExpression(this, context); /** @type {?} */\n ((ast.falseCase)).visitExpression(this,
context);\n return this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *\n RecursiveAstVisitor.prototype.visitNotExpr = /**\n * @param {?} ast\n
* @param {?} context\n * @return {?}\n *\n function (ast, context) {\n
ast.condition.visitExpression(this, context);\n return this.visitExpression(ast, context);\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitAssertNotNullExpr = /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *\n function (ast, context) {\n ast.condition.visitExpression(this, context);\n return
this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *\n RecursiveAstVisitor.prototype.visitCastExpr = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *\n function (ast, context) {\n ast.value.visitExpression(this, context);\n
return this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *\n RecursiveAstVisitor.prototype.visitFunctionExpr = /**\n * @param {?} ast\n *
@param {?} context\n * @return {?}\n *\n function (ast, context) {\n
this.visitAllStatements(ast.statements, context);\n return this.visitExpression(ast, context);\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitBinaryOperatorExpr = /**\n * @param {?} ast\n * @param {?} context\n
* @return {?}\n *\n function (ast, context) {\n ast.lhs.visitExpression(this, context);\n
ast.rhs.visitExpression(this, context);\n return this.visitExpression(ast, context);\n };\n /**\n * @param
{?}\n * @param {?} context\n * @return {?}\n *\n RecursiveAstVisitor.prototype.visitReadPropExpr

```

```

= /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n *\n function (ast, context) {\n
ast.receiver.visitExpression(this, context);\n return this.visitExpression(ast, context);\n };\n /**\n *
@param {?} ast\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitReadKeyExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *\n function (ast, context) {\n ast.receiver.visitExpression(this, context);\n
ast.index.visitExpression(this, context);\n return this.visitExpression(ast, context);\n };\n /**\n * @param
{?}\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitLiteralArrayExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n *\n function (ast, context) {\n this.visitAllExpressions(ast.entries, context);\n return
this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *\n RecursiveAstVisitor.prototype.visitLiteralMapExpr = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *\n function (ast, context) {\n var _this = this;\n
ast.entries.forEach(function (entry) { return entry.value.visitExpression(_this, context); });\n return
this.visitExpression(ast, context);\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return
{?}\n *\n RecursiveAstVisitor.prototype.visitCommaExpr = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?}\n *\n function (ast, context) {\n this.visitAllExpressions(ast.parts, context);\n
return this.visitExpression(ast, context);\n };\n /**\n * @param {?} exprs\n * @param {?} context\n *
@return {?}\n *\n RecursiveAstVisitor.prototype.visitAllExpressions = /**\n * @param {?} exprs\n *
@param {?} context\n * @return {?}\n *\n function (exprs, context) {\n var _this = this;\n
exprs.forEach(function (expr) { return expr.visitExpression(_this, context); });\n };\n /**\n * @param {?}
stmt\n * @param {?} context\n * @return {?}\n *\n RecursiveAstVisitor.prototype.visitDeclareVarStmt =
/**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n *\n function (stmt, context) {\n
stmt.value.visitExpression(this, context);\n if (stmt.type) {\n stmt.type.visitType(this, context);\n }\n
return stmt;\n };\n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitDeclareFunctionStmt = /**\n * @param {?} stmt\n * @param {?} context\n
* @return {?}\n *\n function (stmt, context) {\n this.visitAllStatements(stmt.statements, context);\n
if (stmt.type) {\n stmt.type.visitType(this, context);\n }\n return stmt;\n };\n /**\n * @param
{?}\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitExpressionStmt = /**\n * @param {?} stmt\n * @param {?} context\n *
@return {?}\n *\n function (stmt, context) {\n stmt.expr.visitExpression(this, context);\n return stmt;\n
};\n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitReturnStmt = /**\n * @param {?} stmt\n * @param {?} context\n *
@return {?}\n *\n function (stmt, context) {\n stmt.value.visitExpression(this, context);\n return
stmt;\n };\n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitDeclareClassStmt = /**\n * @param {?} stmt\n * @param {?} context\n
* @return {?}\n *\n function (stmt, context) {\n var _this = this;\n /** @type {?} */
((stmt.parent)).visitExpression(this, context);\n stmt.getters.forEach(function (getter) { return
_this.visitAllStatements(getter.body, context); });\n if (stmt.constructorMethod) {\n
this.visitAllStatements(stmt.constructorMethod.body, context);\n }\n stmt.methods.forEach(function
(method) { return _this.visitAllStatements(method.body, context); });\n return stmt;\n };\n /**\n *
@param {?} stmt\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitIfStmt = /**\n * @param {?} stmt\n * @param {?} context\n * @return
{?}\n *\n function (stmt, context) {\n stmt.condition.visitExpression(this, context);\n
this.visitAllStatements(stmt.trueCase, context);\n this.visitAllStatements(stmt.falseCase, context);\n return
stmt;\n };\n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n *\n
RecursiveAstVisitor.prototype.visitTryCatchStmt = /**\n * @param {?} stmt\n * @param {?} context\n *
@return {?}\n *\n function (stmt, context) {\n this.visitAllStatements(stmt.bodyStmts, context);\n
this.visitAllStatements(stmt.catchStmts, context);\n return stmt;\n };\n /**\n * @param {?} stmt\n *

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@param {?} context\n * @return {?}\n */\n RecursiveAstVisitor.prototype.visitThrowStmt = /**\n *
@param {?} stmt\n * @param {?} context\n * @return {?}\n */\n function (stmt, context) {\n
stmt.error.visitExpression(this, context);\n return stmt;\n };\n /**\n * @param {?} stmt\n * @param
@param {?} context\n * @return {?}\n */\n RecursiveAstVisitor.prototype.visitCommentStmt = /**\n * @param
@param {?} stmt\n * @param {?} context\n * @return {?}\n */\n function (stmt, context) { return stmt; };\n /**\n
* @param {?} stmts\n * @param {?} context\n * @return {?}\n */\n
RecursiveAstVisitor.prototype.visitAllStatements = /**\n * @param {?} stmts\n * @param {?} context\n *
@return {?}\n */\n function (stmts, context) {\n var _this = this;\n stmts.forEach(function (stmt) {
return stmt.visitStatement(_this, context); });\n }; \n return RecursiveAstVisitor;\n});\n/**\n * @param {?}
stmts\n * @return {?}\n */\nfunction findReadVarNames(stmts) {\n var /** @type {?} */ visitor = new
_ReadVarVisitor();\n visitor.visitAllStatements(stmts, null);\n return visitor.varNames;\n}\nvar
_ReadVarVisitor = /** @class */ (function (_super) {\n __extends(_ReadVarVisitor, _super);\n function
_ReadVarVisitor() {\n var _this = _super !== null && _super.apply(this, arguments) || this;\n
_this.varNames = new Set();\n return _this;\n } \n /**\n * @param {?} stmt\n * @param {?} context\n
* @return {?}\n */\n */\n _ReadVarVisitor.prototype.visitDeclareFunctionStmt = /**\n * @param {?} stmt\n *
@param {?} context\n * @return {?}\n */\n */\n function (stmt, context) {\n // Don't descend into nested
functions\n return stmt;\n };\n /**\n * @param {?} stmt\n * @param {?} context\n * @return {?}\n
*/\n */\n _ReadVarVisitor.prototype.visitDeclareClassStmt = /**\n * @param {?} stmt\n * @param {?}
context\n * @return {?}\n */\n */\n function (stmt, context) {\n // Don't descend into nested classes\n
return stmt;\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n */\n
_ReadVarVisitor.prototype.visitReadVarExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?}\n */\n */\n function (ast, context) {\n if (ast.name) {\n this.varNames.add(ast.name);\n
}\n return null;\n };\n return _ReadVarVisitor;\n})(RecursiveAstVisitor$1));\n/**\n * @param {?} stmts\n *
@return {?}\n */\nfunction collectExternalReferences(stmts) {\n var /** @type {?} */ visitor = new
_FindExternalReferencesVisitor();\n visitor.visitAllStatements(stmts, null);\n return
visitor.externalReferences;\n}\nvar _FindExternalReferencesVisitor = /** @class */ (function (_super) {\n
__extends(_FindExternalReferencesVisitor, _super);\n function _FindExternalReferencesVisitor() {\n var
_this = _super !== null && _super.apply(this, arguments) || this;\n _this.externalReferences = [];\n
return
_this;\n } \n /**\n * @param {?} e\n * @param {?} context\n * @return {?}\n */\n */\n
_FindExternalReferencesVisitor.prototype.visitExternalExpr = /**\n * @param {?} e\n * @param {?}
context\n * @return {?}\n */\n */\n function (e, context) {\n this.externalReferences.push(e.value);\n
return _super.prototype.visitExternalExpr.call(this, e, context);\n };\n return
_FindExternalReferencesVisitor;\n})(RecursiveAstVisitor$1));\n/**\n * @param {?} stmt\n * @param {?}
sourceSpan\n * @return {?}\n */\nfunction applySourceSpanToStatementIfNeeded(stmt, sourceSpan) {\n if
(!sourceSpan) {\n return stmt;\n } \n var /** @type {?} */ transformer = new
_ApplySourceSpanTransformer(sourceSpan);\n return stmt.visitStatement(transformer, null);\n}\n/**\n * @param
@param {?} expr\n * @param {?} sourceSpan\n * @return {?}\n */\nfunction applySourceSpanToExpressionIfNeeded(expr,
sourceSpan) {\n if (!sourceSpan) {\n return expr;\n } \n var /** @type {?} */ transformer = new
_ApplySourceSpanTransformer(sourceSpan);\n return expr.visitExpression(transformer, null);\n}\nvar
_ApplySourceSpanTransformer = /** @class */ (function (_super) {\n __extends(_ApplySourceSpanTransformer,
_super);\n function _ApplySourceSpanTransformer(sourceSpan) {\n var _this = _super.call(this) || this;\n
_this.sourceSpan = sourceSpan;\n return _this;\n } \n /**\n * @param {?} obj\n * @return {?}\n */\n
*/\n _ApplySourceSpanTransformer.prototype._clone = /**\n * @param {?} obj\n * @return {?}\n */\n */\n
function (obj) {\n var /** @type {?} */ clone = Object.create(obj.constructor.prototype);\n for (var /**
@param {?} */ prop in obj) {\n clone[prop] = obj[prop];\n } \n return clone;\n };\n /**\n *
@param {?} expr\n * @param {?} context\n * @return {?}\n */\n */\n
_ApplySourceSpanTransformer.prototype.transformExpr = /**\n * @param {?} expr\n * @param {?}
context\n * @return {?}\n */\n */\n function (expr, context) {\n if (!expr.sourceSpan) {\n
expr =

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this._clone(expr);\n expr.sourceSpan = this.sourceSpan;\n }\n return expr;\n };\n /**\n *
@param {?} stmt\n * @param {?} context\n * @return {?} */\n _ApplySourceSpanTransformer.prototype.transformStmt = /**\n * @param {?} stmt\n * @param {?}
context\n * @return {?} */\n function (stmt, context) {\n if (!stmt.sourceSpan) {\n stmt =
this._clone(stmt);\n stmt.sourceSpan = this.sourceSpan;\n }\n return stmt;\n };\n return
_ApplySourceSpanTransformer;\n})(AstTransformer$1));\n\n/**\n * @param {?} name\n * @param {?} type\n *
@param {?} sourceSpan\n * @return {?} */\nfunction variable(name, type, sourceSpan) {\n return new
ReadVarExpr(name, type, sourceSpan);\n}\n\n/**\n * @param {?} id\n * @param {?} typeParams\n * @param
{?} sourceSpan\n * @return {?} */\nfunction importExpr(id, typeParams, sourceSpan) {\n if (typeParams ===
void 0) {\n typeParams = null;\n }\n return new ExternalExpr(id, null, typeParams, sourceSpan);\n}\n\n/**\n * @param
{?} id\n * @param {?} typeParams\n * @param {?} typeModifiers\n * @return {?} */\nfunction
importType(id, typeParams, typeModifiers) {\n if (typeParams === void 0) {\n typeParams = null;\n }\n if
(typeModifiers === void 0) {\n typeModifiers = null;\n }\n return id != null ? expressionType(importExpr(id,
typeParams, null), typeModifiers) : null;\n}\n\n/**\n * @param {?} expr\n * @param {?} typeModifiers\n * @return
{?} */\nfunction expressionType(expr, typeModifiers) {\n if (typeModifiers === void 0) {\n typeModifiers = null;\n
}\n return new ExpressionType(expr, typeModifiers);\n}\n\n/**\n * @param {?} values\n * @param {?} type\n *
@param {?} sourceSpan\n * @return {?} */\nfunction literalArr(values, type, sourceSpan) {\n return new
LiteralArrayExpr(values, type, sourceSpan);\n}\n\n/**\n * @param {?} values\n * @param {?} type\n * @return
{?} */\nfunction literalMap(values, type) {\n if (type === void 0) {\n type = null;\n }\n return new
LiteralMapExpr(values.map(function (e) {\n return new LiteralMapEntry(e.key, e.value, e.quoted); }), type,
null);\n}\n\n/**\n * @param {?} expr\n * @param {?} sourceSpan\n * @return {?} */\nfunction not(expr,
sourceSpan) {\n return new NotExpr(expr, sourceSpan);\n}\n\n/**\n * @param {?} expr\n * @param {?}
sourceSpan\n * @return {?} */\nfunction assertNotNull(expr, sourceSpan) {\n return new AssertNotNull(expr,
sourceSpan);\n}\n\n/**\n * @param {?} params\n * @param {?} body\n * @param {?} type\n * @param {?}
sourceSpan\n * @return {?} */\nfunction fn(params, body, type, sourceSpan) {\n return new
FunctionExpr(params, body, type, sourceSpan);\n}\n\n/**\n * @param {?} value\n * @param {?} type\n * @param
{?} sourceSpan\n * @return {?} */\nfunction literal(value, type, sourceSpan) {\n return new LiteralExpr(value,
type, sourceSpan);\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\nvar ProviderError
= /** @class */ (function (_super) {\n __extends(ProviderError, _super);\n function ProviderError(message,
span) {\n return _super.call(this, span, message) || this;\n }\n return ProviderError;\n})(ParseError);\n\n**\n * @record\n */\nvar ProviderViewContext = /** @class */ (function () {\n function
ProviderViewContext(reflector, component) {\n var _this = this;\n this.reflector = reflector;\n this.component = component;\n this.errors = [];\n this.viewQueries = _getViewQueries(component);\n this.viewProviders = new Map();\n component.viewProviders.forEach(function (provider) {\n if
(_this.viewProviders.get(tokenReference(provider.token)) == null) {\n _this.viewProviders.set(tokenReference(provider.token), true);\n }\n });\n }\n return
ProviderViewContext;\n})();\n\nvar ProviderElementContext = /** @class */ (function () {\n function
ProviderElementContext(viewContext, _parent, _isViewRoot, _directiveAsts, attrs, refs, isTemplate,
contentQueryStartId, _sourceSpan) {\n var _this = this;\n this.viewContext = viewContext;\n this._parent = _parent;\n this._isViewRoot = _isViewRoot;\n this._directiveAsts = _directiveAsts;\n this._sourceSpan = _sourceSpan;\n this._transformedProviders = new Map();\n this._seenProviders = new
Map();\n this._queriedTokens = new Map();\n this.transformedHasViewContainer = false;\n this._attrs
= {};\n attrs.forEach(function (attrAst) {\n return _this._attrs[attrAst.name] = attrAst.value;\n });\n var /**
 * @type {?} */ directivesMeta = _directiveAsts.map(function (directiveAst) {\n return directiveAst.directive;\n });\n this._allProviders =\n _resolveProvidersFromDirectives(directivesMeta, _sourceSpan, viewContext.errors);\n this._contentQueries = _getContentQueries(contentQueryStartId, directivesMeta);\n }\n}

```



```

Array.from(this._allProviders.values()).forEach(function (provider) {\n
 _this._addQueryReadsTo(provider.token, provider.token, _this._queriedTokens);\n });\n if (isTemplate) {\n
 var /** @type {?} */ templateRefId = createTokenForExternalReference(this.viewContext.reflector,\n
Identifiers.TemplateRef);\n this._addQueryReadsTo(templateRefId, templateRefId, this._queriedTokens);\n
 }\n refs.forEach(function (refAst) {\n var /** @type {?} */ defaultQueryValue = refAst.value ||\n
createTokenForExternalReference(_this.viewContext.reflector, Identifiers.ElementRef);\n
 _this._addQueryReadsTo({ value: refAst.name }, defaultQueryValue, _this._queriedTokens);\n });\n if\n
(this._queriedTokens.get(this.viewContext.reflector.resolveExternalReference(Identifiers.ViewContainerRef))) {\n
 this.transformedHasViewContainer = true;\n }\n // create the providers that we know are eager first\n
Array.from(this._allProviders.values()).forEach(function (provider) {\n var /** @type {?} */ eager =\n
provider.eager || _this._queriedTokens.get(tokenReference(provider.token));\n if (eager) {\n
 _this._getOrCreateLocalProvider(provider.providerType, provider.token, true);\n }\n });\n /**\n
* @return {?} */\n *^ ProviderElementContext.prototype.afterElement = /**\n
* @return {?} */\n *^/\n
function () {\n var _this = this;\n // collect lazy providers\n
Array.from(this._allProviders.values()).forEach(function (provider) {\n
 _this._getOrCreateLocalProvider(provider.providerType, provider.token, false);\n });\n });\n
Object.defineProperty(ProviderElementContext.prototype, "transformProviders", {\n get: /**\n
* @return\n
{?} */\n *^/\n function () {\n // Note: Maps keep their insertion order.\n var /** @type {?} */\n
lazyProviders = [];\n var /** @type {?} */ eagerProviders = [];\n
this._transformedProviders.forEach(function (provider) {\n if (provider.eager) {\n
eagerProviders.push(provider);\n }\n else {\n lazyProviders.push(provider);\n
 }\n });\n return lazyProviders.concat(eagerProviders);\n },\n enumerable: true,\n
configurable: true\n });\n Object.defineProperty(ProviderElementContext.prototype,\n
"transformedDirectiveAsts", {\n get: /**\n
* @return {?} */\n *^/\n function () {\n var /**\n
@type {?} */ sortedProviderTypes = this.transformProviders.map(function (provider) { return\n
provider.token.identifier; });\n var /** @type {?} */ sortedDirectives = this._directiveAsts.slice();\n
sortedDirectives.sort(function (dir1, dir2) {\n return sortedProviderTypes.indexOf(dir1.directive.type) -\n
sortedProviderTypes.indexOf(dir2.directive.type);\n });\n return sortedDirectives;\n },\n
enumerable: true,\n configurable: true\n });\n Object.defineProperty(ProviderElementContext.prototype,\n
"queryMatches", {\n get: /**\n
* @return {?} */\n *^/\n function () {\n var /** @type {?} */\n
allMatches = [];\n this._queriedTokens.forEach(function (matches) { allMatches.push.apply(allMatches,\n
matches); });\n return allMatches;\n },\n enumerable: true,\n configurable: true\n });\n /**\n
* @param {?} token\n
* @param {?} defaultValue\n
* @param {?} queryReadTokens\n
* @return {?} */\n
*^/\n
ProviderElementContext.prototype._addQueryReadsTo = /**\n
* @param {?} token\n
* @param {?} default\n
value\n
* @param {?} queryReadTokens\n
* @return {?} */\n
*^/\n
function (token, default\n
value, queryReadTokens) {\n this._getQueriesFor(token).forEach(function (query) {\n var /** @type {?} */\n
queryValue = query.meta.read || default\n
value;\n var /** @type {?} */ tokenRef =\n
tokenReference(queryValue);\n var /** @type {?} */ queryMatches = queryReadTokens.get(tokenRef);\n
if (!queryMatches) {\n queryMatches = [];\n queryReadTokens.set(tokenRef, queryMatches);\n
 }\n queryMatches.push({ queryId: query.queryId, value: queryValue });\n });\n /**\n
* @param {?} token\n
* @return {?} */\n
*^/\n
ProviderElementContext.prototype._getQueriesFor = /**\n
* @param {?} token\n
* @return {?} */\n
*^/\n
function (token) {\n var /** @type {?} */ result = [];\n var\n
/** @type {?} */ currentEl = this;\n var /** @type {?} */ distance = 0;\n var /** @type {?} */ queries;\n
while (currentEl !== null) {\n queries = currentEl._contentQueries.get(tokenReference(token));\n if\n
(queries) {\n result.push.apply(result, queries.filter(function (query) { return query.meta.descendants ||\n
distance <= 1; }));\n }\n if (currentEl._directiveAsts.length > 0) {\n distance++;\n
 }\n currentEl = currentEl._parent;\n }\n queries =\n
this.viewContext.viewQueries.get(tokenReference(token));\n if (queries) {\n result.push.apply(result,

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queries);\n }\n return result;\n };\n /**\n * @param {?} requestingProviderType\n * @param {?} token\n * @param {?} eager\n * @return {?}\n */\n ProviderElementContext.prototype._getOrCreateLocalProvider = /**\n * @param {?} requestingProviderType\n * @param {?} token\n * @param {?} eager\n * @return {?}\n */\n function (requestingProviderType, token, eager) {\n var _this = this;\n var /** @type {?} */ resolvedProvider = this._allProviders.get(tokenReference(token));\n if (!resolvedProvider || ((requestingProviderType === ProviderAstType.Directive ||\n requestingProviderType === ProviderAstType.PublicService) &&\n resolvedProvider.providerType === ProviderAstType.PrivateService) ||\n ((requestingProviderType === ProviderAstType.PrivateService ||\n requestingProviderType === ProviderAstType.PublicService) &&\n resolvedProvider.providerType === ProviderAstType.Builtin)) {\n return null;\n }\n var /** @type {?} */ transformedProviderAst = this._transformedProviders.get(tokenReference(token));\n if (transformedProviderAst) {\n return transformedProviderAst;\n }\n if (this._seenProviders.get(tokenReference(token)) != null) {\n this.viewContext.errors.push(new ProviderError(\"Cannot instantiate cyclic dependency! \" + tokenName(token), this._sourceSpan));\n return null;\n }\n this._seenProviders.set(tokenReference(token), true);\n var /** @type {?} */ transformedProviders = resolvedProvider.providers.map(function (provider) {\n var /** @type {?} */ transformedUseValue = provider.useValue;\n var /** @type {?} */ transformedUseExisting = /** @type {?} */ ((provider.useExisting));\n var /** @type {?} */ transformedDeps = /** @type {?} */ ((undefined));\n if (provider.useExisting != null) {\n var /** @type {?} */ existingDiDep = /** @type {?} */ ((_this._getDependency(resolvedProvider.providerType, { token: provider.useExisting }, eager)));;\n if (existingDiDep.token != null) {\n transformedUseExisting = existingDiDep.token;\n }\n else {\n transformedUseExisting = /** @type {?} */ ((null));\n transformedUseValue = existingDiDep.value;\n }\n }\n else if (provider.useFactory) {\n var /** @type {?} */ deps = provider.deps || provider.useFactory.diDeps;\n transformedDeps =\n deps.map(function (dep) { return ((_this._getDependency(resolvedProvider.providerType, dep, eager))); });;\n }\n else if (provider.useClass) {\n var /** @type {?} */ deps = provider.deps || provider.useClass.diDeps;\n transformedDeps =\n deps.map(function (dep) { return ((_this._getDependency(resolvedProvider.providerType, dep, eager))); });;\n }\n return\n _transformProvider(provider, {\n useExisting: transformedUseExisting,\n useValue: transformedUseValue,\n deps: transformedDeps\n });;\n });\n transformedProviderAst =\n _transformProviderAst(resolvedProvider, { eager: eager, providers: transformedProviders });\n this._transformedProviders.set(tokenReference(token), transformedProviderAst);\n return transformedProviderAst;\n };\n /**\n * @param {?} requestingProviderType\n * @param {?} dep\n * @param {?=} eager\n * @return {?}\n */\n ProviderElementContext.prototype._getLocalDependency = /**\n * @param {?} requestingProviderType\n * @param {?} dep\n * @param {?=} eager\n * @return {?}\n */\n function (requestingProviderType, dep, eager) {\n if (eager === void 0) { eager = false; }\n if (dep.isAttribute) {\n var /** @type {?} */ attrValue = this._attrs[/** @type {?} */ ((dep.token)).value];\n return { isValue: true, value: attrValue == null ? null : attrValue };;\n }\n if (dep.token != null) {\n // access builtins\n if ((requestingProviderType === ProviderAstType.Directive ||\n requestingProviderType === ProviderAstType.Component)) {\n if (tokenReference(dep.token) ===\n this.viewContext.reflector.resolveExternalReference(Identifiers.Renderer) ||\n tokenReference(dep.token) ===\n this.viewContext.reflector.resolveExternalReference(Identifiers.ElementRef) ||\n tokenReference(dep.token) ===\n this.viewContext.reflector.resolveExternalReference(Identifiers.ChangeDetectorRef) ||\n tokenReference(dep.token) ===\n this.viewContext.reflector.resolveExternalReference(Identifiers.TemplateRef)) {\n return dep;\n }\n if (tokenReference(dep.token) ===\n
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this.viewContext.reflector.resolveExternalReference(Identifiers.ViewContainerRef)) {\n (** @type {?}
*/ (this)).transformedHasViewContainer = true;\n }\n }\n // access the injector\n if
(tokenReference(dep.token) ===\n
this.viewContext.reflector.resolveExternalReference(Identifiers.Injector)) {\n return dep;\n }\n
// access providers\n if (this._getOrCreateLocalProvider(requestingProviderType, dep.token, eager) != null)
{\n return dep;\n }\n }\n return null;\n };\n /**\n * @param {?}
requestingProviderType\n * @param {?} dep\n * @param {?=} eager\n * @return {?}\n */\n
ProviderElementContext.prototype._getDependency = /**\n * @param {?} requestingProviderType\n *
@param {?} dep\n * @param {?=} eager\n * @return {?}\n */\n function (requestingProviderType, dep,
eager) {\n if (eager === void 0) { eager = false; }\n var /** @type {?} */ currElement = this;\n var /**
@type {?} */ currEager = eager;\n var /** @type {?} */ result = null;\n if (!dep.isSkipSelf) {\n result
= this._getLocalDependency(requestingProviderType, dep, eager);\n }\n if (dep.isSelf) {\n if (!result
&& dep.isOptional) {\n result = { isValue: true, value: null };\n }\n }\n else {\n //
check parent elements\n while (!result && currElement._parent) {\n var /** @type {?} */
prevElement = currElement;\n currElement = currElement._parent;\n if
(prevElement._isViewRoot) {\n currEager = false;\n }\n result =
currElement._getLocalDependency(ProviderAstType.PublicService, dep, currEager);\n }\n // check
@Host restriction\n if (!result) {\n if (!dep.isHost || this.viewContext.component.isHost ||\n
this.viewContext.component.type.reference === tokenReference(** @type {?} */ ((dep.token))) ||\n
this.viewContext.viewProviders.get(tokenReference(** @type {?} */ ((dep.token)))) != null) {\n result
= dep;\n }\n else {\n result = dep.isOptional ? result = { isValue: true, value: null } :
null;\n }\n }\n }\n if (!result) {\n this.viewContext.errors.push(new
ProviderError(`No provider for ` + tokenName(** @type {?} */ ((dep.token))), this._sourceSpan));\n }\n
return result;\n };\n return ProviderElementContext;\n }());\n nvar NgModuleProviderAnalyzer = /** @class */
(function () {\n function NgModuleProviderAnalyzer(reflector, ngModule, extraProviders, sourceSpan) {\n
var _this = this;\n this.reflector = reflector;\n this._transformedProviders = new Map();\n
this._seenProviders = new Map();\n this._errors = [];\n this._allProviders = new Map();\n
ngModule.transitiveModule.modules.forEach(function (ngModuleType) {\n var /** @type {?} */
ngModuleProvider = { token: { identifier: ngModuleType }, useClass: ngModuleType };\n
_resolveProviders([ngModuleProvider], ProviderAstType.PublicService, true, sourceSpan, _this._errors,
_this._allProviders);\n });\n _resolveProviders(ngModule.transitiveModule.providers.map(function (entry)
{ return entry.provider; }).concat(extraProviders), ProviderAstType.PublicService, false, sourceSpan, this._errors,
this._allProviders);\n }\n /**\n * @return {?}\n */\n NgModuleProviderAnalyzer.prototype.parse = /**\n
* @return {?}\n */\n function () {\n var _this = this;\n
Array.from(this._allProviders.values()).forEach(function (provider) {\n
_this._getOrCreateLocalProvider(provider.token, provider.eager);\n });\n if (this._errors.length > 0) {\n
var /** @type {?} */ errorString = this._errors.join(`\n`);\n throw new Error(`Provider parse errors:\n` +
errorString);\n }\n // Note: Maps keep their insertion order.\n var /** @type {?} */ lazyProviders =
[];\n var /** @type {?} */ eagerProviders = [];\n this._transformedProviders.forEach(function (provider)
{\n if (provider.eager) {\n eagerProviders.push(provider);\n }\n else {\n
lazyProviders.push(provider);\n }\n });\n return lazyProviders.concat(eagerProviders);\n };\n
/**\n * @param {?} token\n * @param {?} eager\n * @return {?}\n */\n
NgModuleProviderAnalyzer.prototype._getOrCreateLocalProvider = /**\n * @param {?} token\n * @param
{?} eager\n * @return {?}\n */\n function (token, eager) {\n var _this = this;\n var /** @type {?} */
resolvedProvider = this._allProviders.get(tokenReference(token));\n if (!resolvedProvider) {\n return
null;\n }\n var /** @type {?} */ transformedProviderAst =
this._transformedProviders.get(tokenReference(token));\n if (transformedProviderAst) {\n return
transformedProviderAst;\n }\n if (this._seenProviders.get(tokenReference(token)) != null) {\n

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this._errors.push(new ProviderError("\Cannot instantiate cyclic dependency!" + tokenName(token),
resolvedProvider.sourceSpan));\n return null;\n }\n this._seenProviders.set(tokenReference(token),
true);\n var /** @type {?} */ transformedProviders = resolvedProvider.providers.map(function (provider) {\n
 var /** @type {?} */ transformedUseValue = provider.useValue;\n var /** @type {?} */
transformedUseExisting = /** @type {?} */ ((provider.useExisting));\n var /** @type {?} */
transformedDeps = /** @type {?} */ ((undefined));\n if (provider.useExisting != null) {\n var /**
@type {?} */ existingDiDep = _this._getDependency({ token: provider.useExisting }, eager,
resolvedProvider.sourceSpan);\n if (existingDiDep.token != null) {\n transformedUseExisting
= existingDiDep.token;\n }\n else {\n transformedUseExisting = /** @type {?} */
((null));\n transformedUseValue = existingDiDep.value;\n }\n }\n else if
(provider.useFactory) {\n var /** @type {?} */ deps = provider.deps || provider.useFactory.diDeps;\n
 transformedDeps =\n deps.map(function (dep) { return _this._getDependency(dep, eager,
resolvedProvider.sourceSpan); });\n }\n else if (provider.useClass) {\n var /** @type {?} */
deps = provider.deps || provider.useClass.diDeps;\n transformedDeps =\n deps.map(function
(dep) { return _this._getDependency(dep, eager, resolvedProvider.sourceSpan); });\n }\n return
_transformProvider(provider, {\n useExisting: transformedUseExisting,\n useValue:
transformedUseValue,\n deps: transformedDeps\n });\n });\n transformedProviderAst =\n _transformProviderAst(resolvedProvider, { eager: eager, providers: transformedProviders });\n
this._transformedProviders.set(tokenReference(token), transformedProviderAst);\n return
transformedProviderAst;\n };\n /**\n * @param {?} dep\n * @param {?=} eager\n * @param {?=}
requestorSourceSpan\n * @return {?}\n */\n NgModuleProviderAnalyzer.prototype._getDependency = /**\n
 * @param {?} dep\n * @param {?=} eager\n * @param {?=} requestorSourceSpan\n * @return {?}\n
 */\n function (dep, eager, requestorSourceSpan) {\n if (eager === void 0) { eager = false; }\n var /**
@type {?} */ foundLocal = false;\n if (!dep.isSkipSelf && dep.token != null) {\n // access the injector\n
 if (tokenReference(dep.token) ===\n this.reflector.resolveExternalReference(Identifiers.Injector) ||\n
 tokenReference(dep.token) ===\n this.reflector.resolveExternalReference(Identifiers.ComponentFactoryResolver)) {\n foundLocal = true;\n
 // access providers\n }\n else if (this._getOrCreateLocalProvider(dep.token, eager) != null) {\n
 foundLocal = true;\n }\n }\n var /** @type {?} */ result = dep;\n if (dep.isSelf &&
!foundLocal) {\n if (dep.isOptional) {\n result = { isValue: true, value: null };\n }\n
 }\n else {\n this._errors.push(new ProviderError("No provider for " + tokenName(/** @type {?} */
((dep.token))))), requestorSourceSpan);\n }\n return result;\n };\n return
NgModuleProviderAnalyzer;\n }();\n /**\n * @param {?} provider\n * @param {?} __1\n * @return {?}\n
 */\n function _transformProvider(provider, _a) {\n var useExisting = _a.useExisting, useValue = _a.useValue, deps
= _a.deps;\n return {\n token: provider.token,\n useClass: provider.useClass,\n useExisting:
useExisting,\n useFactory: provider.useFactory,\n useValue: useValue,\n deps: deps,\n multi:
provider.multi\n };\n }\n /**\n * @param {?} provider\n * @param {?} __1\n * @return {?}\n
 */\n function
_transformProviderAst(provider, _a) {\n var eager = _a.eager, providers = _a.providers;\n return new
ProviderAst(provider.token, provider.multiProvider, provider.eager || eager, providers, provider.providerType,
provider.lifecycleHooks, provider.sourceSpan);\n }\n /**\n * @param {?} directives\n * @param {?} sourceSpan\n
 * @param {?} targetErrors\n * @return {?}\n */\n function _resolveProvidersFromDirectives(directives, sourceSpan,
targetErrors) {\n var /** @type {?} */ providersByToken = new Map();\n directives.forEach(function (directive)
{\n var /** @type {?} */ dirProvider = { token: { identifier: directive.type }, useClass: directive.type };\n
 _resolveProviders([dirProvider], directive.isComponent ? ProviderAstType.Component :
ProviderAstType.Directive, true, sourceSpan, targetErrors, providersByToken);\n });\n // Note: directives need
to be able to overwrite providers of a component!\n var /** @type {?} */ directivesWithComponentFirst =
directives.filter(function (dir) { return dir.isComponent; }).concat(directives.filter(function (dir) { return
!dir.isComponent; }));\n directivesWithComponentFirst.forEach(function (directive) {\n

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_resolveProviders(directive.providers, ProviderAstType.PublicService, false, sourceSpan, targetErrors,
providersByToken);\n _resolveProviders(directive.viewProviders, ProviderAstType.PrivateService, false,
sourceSpan, targetErrors, providersByToken);\n });\n return providersByToken;\n}\n\n/**\n * @param {?}
providers\n * @param {?} providerType\n * @param {?} eager\n * @param {?} sourceSpan\n * @param {?}
targetErrors\n * @param {?} targetProvidersByToken\n * @return {?}\n */\nfunction _resolveProviders(providers,
providerType, eager, sourceSpan, targetErrors, targetProvidersByToken) {\n providers.forEach(function
(provider) {\n var /** @type {?} */ resolvedProvider =
targetProvidersByToken.get(tokenReference(provider.token));\n if (resolvedProvider != null &&
!resolvedProvider.multiProvider !== !provider.multi) {\n targetErrors.push(new ProviderError("Mixing
multi and non multi provider is not possible for token \" + tokenName(resolvedProvider.token), sourceSpan));\n }\n if (!resolvedProvider) {\n var /** @type {?} */ lifecycleHooks = provider.token.identifier &&\n (/** @type {?} */ (provider.token.identifier)).lifecycleHooks ?\n (/** @type {?} */ (provider.token.identifier)).lifecycleHooks : []);\n var /** @type {?} */ isUseValue =
!(provider.useClass || provider.useExisting || provider.useFactory);\n resolvedProvider = new
ProviderAst(provider.token, !provider.multi, eager || isUseValue, [provider], providerType, lifecycleHooks,
sourceSpan);\n targetProvidersByToken.set(tokenReference(provider.token), resolvedProvider);\n }\n else {\n if (!provider.multi) {\n resolvedProvider.providers.length = 0;\n }\n resolvedProvider.providers.push(provider);\n }\n });\n}\n\n/**\n * @param {?} component\n * @return {?}\n */\nfunction _getViewQueries(component) {\n // Note: queries start with id 1 so we can use the number in a
Bloom filter!\n var /** @type {?} */ viewQueryId = 1;\n var /** @type {?} */ viewQueries = new Map();\n if (component.viewQueries) {\n component.viewQueries.forEach(function (query) { return
_addQueryToTokenMap(viewQueries, { meta: query, queryId: viewQueryId++ }); });\n }\n return
viewQueries;\n}\n\n/**\n * @param {?} contentQueryStartId\n * @param {?} directives\n * @return {?}\n */\nfunction _getContentQueries(contentQueryStartId, directives) {\n var /** @type {?} */ contentQueryId =
contentQueryStartId;\n var /** @type {?} */ contentQueries = new Map();\n directives.forEach(function
(directive, directiveIndex) {\n if (directive.queries) {\n directive.queries.forEach(function (query) {\n return _addQueryToTokenMap(contentQueries, { meta: query, queryId: contentQueryId++ });\n });\n }\n });\n return contentQueries;\n}\n\n/**\n * @param {?} map\n * @param {?} query\n * @return {?}\n */\nfunction
_addQueryToTokenMap(map, query) {\n query.meta.selectors.forEach(function (token) {\n var /** @type
{?} */ entry = map.get(tokenReference(token));\n if (!entry) {\n entry = [];\n }\n map.set(tokenReference(token), entry);\n entry.push(query);\n });\n}\n\n/**\n * @fileoverview added
by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\nvar QUOTED_KEYS = '$quoted$';\n\n/**\n * @param {?} ctx\n * @param {?} value\n * @param {=} type\n * @return {?}\n */\nfunction convertValueToOutputAst(ctx, value,
type) {\n if (type === void 0) { type = null; }\n return visitValue(value, new _ValueOutputAstTransformer(ctx,
type));\n}\n\nvar _ValueOutputAstTransformer = /** @class */ (function () {\n function
_ValueOutputAstTransformer(ctx) {\n this.ctx = ctx;\n }\n\n /**\n * @param {?} arr\n * @param {?}
type\n * @return {?}\n */\n _ValueOutputAstTransformer.prototype.visitArray = /**\n * @param {?}
arr\n * @param {?} type\n * @return {?}\n */\n function (arr, type) {\n var _this = this;\n return
literalArr(arr.map(function (value) { return visitValue(value, _this, null); }, type));\n }\n\n /**\n * @param {?}
map\n * @param {?} type\n * @return {?}\n */\n _ValueOutputAstTransformer.prototype.visitStringMap =
/**\n * @param {?} map\n * @param {?} type\n * @return {?}\n */\n function (map, type) {\n var _this = this;\n var /** @type {?} */ entries = [];\n var /** @type {?} */ quotedSet = new Set(map &&
map[QUOTED_KEYS]);\n Object.keys(map).forEach(function (key) {\n entries.push(new
LiteralMapEntry(key, visitValue(map[key], _this, null), quotedSet.has(key)));\n });\n return new
LiteralMapExpr(entries, type);\n }\n\n /**\n * @param {?} value\n * @param {?} type\n * @return {?}\n */\n _ValueOutputAstTransformer.prototype.visitPrimitive = /**\n * @param {?} value\n * @param {?}

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type\n * @return {?}\n *\n function (value, type) { return literal(value, type); }\n /**\n * @param {?}
value\n * @param {?} type\n * @return {?}\n *\n _ValueOutputAstTransformer.prototype.visitOther =
/**\n * @param {?} value\n * @param {?} type\n * @return {?}\n *\n function (value, type) {\n if
(value instanceof Expression) {\n return value;\n }\n else {\n return
this.ctx.importExpr(value);\n }\n };\n return _ValueOutputAstTransformer;\n})();\n\n/**\n * @fileoverview
added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All
Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\n * @param {?} ctx\n * @param {?} providerAst\n * @return
{?}\n *\nfunction providerDef(ctx, providerAst) {\n var /** @type {?} */ flags = 0;\n if (!providerAst.eager)
{\n flags |= 4096 /* LazyProvider */;\n }\n if (providerAst.providerType ===
ProviderAstType.PrivateService) {\n flags |= 8192 /* PrivateProvider */;\n }\n
providerAst.lifecycleHooks.forEach(function (lifecycleHook) {\n // for regular providers, we only support
ngOnDestroy\n if (lifecycleHook === LifecycleHooks.OnDestroy ||\n providerAst.providerType ===
ProviderAstType.Directive ||\n providerAst.providerType === ProviderAstType.Component) {\n flags
|= lifecycleHookToNodeFlag(lifecycleHook);\n }\n });\n var _a = providerAst.multiProvider ?\n
multiProviderDef(ctx, flags, providerAst.providers) :\n singleProviderDef(ctx, flags, providerAst.providerType,
providerAst.providers[0]), providerExpr = _a.providerExpr, providerFlags = _a.flags, depsExpr = _a.depsExpr;\n
return {\n providerExpr: providerExpr,\n flags: providerFlags, depsExpr: depsExpr,\n tokenExpr:
tokenExpr(ctx, providerAst.token),\n };\n}\n\n/**\n * @param {?} ctx\n * @param {?} flags\n * @param {?}
providers\n * @return {?}\n *\nfunction multiProviderDef(ctx, flags, providers) {\n var /** @type {?} */
allDepDeps = [];\n var /** @type {?} */ allParams = [];\n var /** @type {?} */ exprs = providers.map(function
(provider, providerIndex) {\n var /** @type {?} */ expr;\n if (provider.useClass) {\n var /** @type
{?} */ depExprs = convertDeps(providerIndex, provider.deps || provider.useClass.diDeps);\n expr =
ctx.importExpr(provider.useClass.reference).instantiate(depExprs);\n }\n else if (provider.useFactory) {\n
var /** @type {?} */ depExprs = convertDeps(providerIndex, provider.deps || provider.useFactory.diDeps);\n
expr = ctx.importExpr(provider.useFactory.reference).callFn(depExprs);\n }\n else if
(provider.useExisting) {\n var /** @type {?} */ depExprs = convertDeps(providerIndex, [{ token:
provider.useExisting }]);\n expr = depExprs[0];\n }\n else {\n expr =
convertValueToOutputAst(ctx, provider.useValue);\n }\n return expr;\n });\n var /** @type {?} */
providerExpr = fn(allParams, [new ReturnStatement(literalArr(exprs))], INFERRED_TYPE);\n return {\n
providerExpr: providerExpr,\n flags: flags | 1024 /* TypeFactoryProvider */,\n depsExpr:
literalArr(allDepDeps)\n };\n }\n\n /**\n * @param {?} providerIndex\n * @param {?} deps\n * @return {?}\n
*\nfunction convertDeps(providerIndex, deps) {\n return deps.map(function (dep, depIndex) {\n var
/** @type {?} */ paramName = `p${providerIndex}_${depIndex}`;\n allParams.push(new
FnParam(paramName, DYNAMIC_TYPE));\n allDepDeps.push(depDef(ctx, dep));\n return
variable(paramName);\n });\n }\n}\n\n/**\n * @param {?} ctx\n * @param {?} flags\n * @param {?}
providerType\n * @param {?} providerMeta\n * @return {?}\n *\nfunction singleProviderDef(ctx, flags,
providerType, providerMeta) {\n var /** @type {?} */ providerExpr;\n var /** @type {?} */ deps;\n if
(providerType === ProviderAstType.Directive || providerType === ProviderAstType.Component) {\n
providerExpr = ctx.importExpr(/** @type {?} */ ((providerMeta.useClass)).reference);\n flags |= 16384 /*
TypeDirective */;\n deps = providerMeta.deps || /** @type {?} */ ((providerMeta.useClass)).diDeps;\n }\n
else {\n if (providerMeta.useClass) {\n providerExpr =
ctx.importExpr(providerMeta.useClass.reference);\n flags |= 512 /* TypeClassProvider */;\n deps =
providerMeta.deps || providerMeta.useClass.diDeps;\n }\n else if (providerMeta.useFactory) {\n
providerExpr = ctx.importExpr(providerMeta.useFactory.reference);\n flags |= 1024 /* TypeFactoryProvider
*/;\n deps = providerMeta.deps || providerMeta.useFactory.diDeps;\n }\n else if
(providerMeta.useExisting) {\n providerExpr = NULL_EXPR;\n flags |= 2048 /*
TypeUseExistingProvider */;\n deps = [{ token: providerMeta.useExisting }];\n }\n else {\n

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providerExpr = convertValueToOutputAst(ctx, providerMeta.useValue);\n flags |= 256 /* TypeValueProvider
*/;\n deps = [];\n }\n }\n var /** @type {?} */ depsExpr = literalArr(deps.map(function (dep) { return
depDef(ctx, dep); }));\n return { providerExpr: providerExpr, flags: flags, depsExpr: depsExpr };\n}\n\n/**\n *
@param {?} ctx\n * @param {?} tokenMeta\n * @return {?} */\n */\nfunction tokenExpr(ctx, tokenMeta) {\n return
tokenMeta.identifier ? ctx.importExpr(tokenMeta.identifier.reference) : \n literal(tokenMeta.value);\n}\n\n/**\n *
@param {?} ctx\n * @param {?} dep\n * @return {?} */\n */\nfunction depDef(ctx, dep) {\n // Note: the following
fields have already been normalized out by provider_analyzer:\n // - isAttribute, isSelf, isHost\n var /** @type
{?} */ expr = dep.isValue ? convertValueToOutputAst(ctx, dep.value) : tokenExpr(ctx, /** @type {?} */
((dep.token)));\n var /** @type {?} */ flags = 0;\n if (dep.isSkipSelf) {\n flags |= 1 /* SkipSelf */;\n }\n
if (dep.isOptional) {\n flags |= 2 /* Optional */;\n }\n if (dep.isValue) {\n flags |= 8 /* Value */;\n }\n
return flags === 0 /* None */ ? expr : literalArr([literal(flags), expr]);\n}\n\n/**\n * @param {?} lifecycleHook\n *
@return {?} */\n */\nfunction lifecycleHookToNodeFlag(lifecycleHook) {\n var /** @type {?} */ nodeFlag = 0;\n
switch (lifecycleHook) {\n case LifecycleHooks.AfterContentChecked:\n nodeFlag = 2097152 /*
AfterContentChecked */;\n break;\n case LifecycleHooks.AfterContentInit:\n nodeFlag = 1048576
/* AfterContentInit */;\n break;\n case LifecycleHooks.AfterViewChecked:\n nodeFlag = 8388608
/* AfterViewChecked */;\n break;\n case LifecycleHooks.AfterViewInit:\n nodeFlag = 4194304
/* AfterViewInit */;\n break;\n case LifecycleHooks.DoCheck:\n nodeFlag = 262144 /* DoCheck
/;\n break;\n case LifecycleHooks.OnChanges:\n nodeFlag = 524288 / OnChanges */;\n break;\n
case LifecycleHooks.OnDestroy:\n nodeFlag = 131072 /* OnDestroy */;\n break;\n case LifecycleHooks.OnInit:\n
 nodeFlag = 65536 /* OnInit */;\n break;\n }\n return
nodeFlag;\n}\n\n/**\n * @param {?} reflector\n * @param {?} ctx\n * @param {?} flags\n * @param {?}
entryComponents\n * @return {?} */\n */\nfunction componentFactoryResolverProviderDef(reflector, ctx, flags,
entryComponents) {\n var /** @type {?} */ entryComponentFactories = entryComponents.map(function
(entryComponent) { return ctx.importExpr(entryComponent.componentFactory); });\n var /** @type {?} */ token
= createTokenForExternalReference(reflector, Identifiers.ComponentFactoryResolver);\n var /** @type {?} */
classMeta = {\n diDeps: [\n { isValue: true, value: literalArr(entryComponentFactories) },\n {\n
token: token, isSkipSelf: true, isOptional: true },\n { token: createTokenForExternalReference(reflector,
Identifiers.NgModuleRef) },\n],\n lifecycleHooks: [],\n reference:
reflector.resolveExternalReference(Identifiers.CodegenComponentFactoryResolver)\n };\n var _a =
singleProviderDef(ctx, flags, ProviderAstType.PrivateService, {\n token: token,\n multi: false,\n
useClass: classMeta,\n }), providerExpr = _a.providerExpr, providerFlags = _a.flags, depsExpr = _a.depsExpr;\n
return { providerExpr: providerExpr, flags: providerFlags, depsExpr: depsExpr, tokenExpr: tokenExpr(ctx, token)
};\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n *
@license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\nNgModuleCompileResult = /** @class */ (function () {\n function
NgModuleCompileResult(ngModuleFactoryVar) {\n this.ngModuleFactoryVar = ngModuleFactoryVar;\n }\n return
NgModuleCompileResult;\n})();\n\nvar LOG_VAR = variable('_l');\nvar NgModuleCompiler = /** @class */
(function () {\n function NgModuleCompiler(reflector) {\n this.reflector = reflector;\n }\n /**\n *
@param {?} ctx\n * @param {?} ngModuleMeta\n * @param {?} extraProviders\n * @return {?} */\n */\n NgModuleCompiler.prototype.compile = /**\n * @param {?} ctx\n * @param {?} ngModuleMeta\n *
@param {?} extraProviders\n * @return {?} */\n */\n function (ctx, ngModuleMeta, extraProviders) {\n var
/** @type {?} */ sourceSpan = typeSourceSpan('NgModule', ngModuleMeta.type);\n var /** @type {?} */
entryComponentFactories = ngModuleMeta.transitiveModule.entryComponents;\n var /** @type {?} */
bootstrapComponents = ngModuleMeta.bootstrapComponents;\n var /** @type {?} */ providerParser = new
NgModuleProviderAnalyzer(this.reflector, ngModuleMeta, extraProviders, sourceSpan);\n var /** @type {?} */
providerDefs = [componentFactoryResolverProviderDef(this.reflector, ctx, 0 /* None */,
entryComponentFactories)]\n .concat(providerParser.parse().map(function (provider) { return

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be loaded using the URL\n /**\n * @param {?} url\n * @param {?=} content\n * @return {?}\n */\n SourceMapGenerator.prototype.addSource = /**\n * @param {?} url\n * @param {?=} content\n * @return {?}\n */\n function (url, content) {\n if (content === void 0) { content = null; }\n if (!this.sourcesContent.has(url)) {\n this.sourcesContent.set(url, content);\n }\n return this;\n };\n /**\n * @return {?}\n */\n SourceMapGenerator.prototype.addLine = /**\n * @return {?}\n */\n function () {\n this.lines.push([]);\n this.lastCol0 = 0;\n return this;\n };\n /**\n * @param {?} col0\n * @param {?=} sourceUrl\n * @param {?=} sourceLine0\n * @param {?=} sourceCol0\n * @return {?}\n */\n SourceMapGenerator.prototype.addMapping = /**\n * @param {?} col0\n * @param {?=} sourceUrl\n * @param {?=} sourceLine0\n * @param {?=} sourceCol0\n * @return {?}\n */\n function (col0, sourceUrl, sourceLine0, sourceCol0) {\n if (!this.currentLine) {\n throw new Error("\nA line must be added before mappings can be added");\n }\n if (sourceUrl != null && !this.sourcesContent.has(sourceUrl)) {\n throw new Error("\nUnknown source file \\\\" + sourceUrl + \\\\" + \\\\"");\n }\n if (col0 == null) {\n throw new Error("\nThe column in the generated code must be provided");\n }\n if (col0 < this.lastCol0) {\n throw new Error("\nMapping should be added in output order");\n }\n if (sourceUrl && (sourceLine0 == null || sourceCol0 == null)) {\n throw new Error("\nThe source location must be provided when a source url is provided");\n }\n this.hasMappings = true;\n this.lastCol0 = col0;\n this.currentLine.push({ col0: col0, sourceUrl: sourceUrl, sourceLine0: sourceLine0, sourceCol0: sourceCol0 });\n return this;\n };\n Object.defineProperty(SourceMapGenerator.prototype, "currentLine", {\n get: /**\n * @return {?}\n */\n function () { return this.lines.slice(-1)[0]; },\n enumerable: true,\n configurable: true\n });\n /**\n * @return {?}\n */\n SourceMapGenerator.prototype.toJSON = /**\n * @return {?}\n */\n function () {\n var _this = this;\n if (!this.hasMappings) {\n return null;\n }\n var /** @type {?} */ sourcesIndex = new Map();\n var /** @type {?} */ sources = [];\n var /** @type {?} */ sourcesContent = [];\n Array.from(this.sourcesContent.keys()).forEach(function (url, i) {\n sourcesIndex.set(url, i);\n sources.push(url);\n sourcesContent.push(_this.sourcesContent.get(url) || null);\n });\n var /** @type {?} */ mappings = "";\n var /** @type {?} */ lastCol0 = 0;\n var /** @type {?} */ lastSourceIndex = 0;\n var /** @type {?} */ lastSourceLine0 = 0;\n var /** @type {?} */ lastSourceCol0 = 0;\n this.lines.forEach(function (segments) {\n lastCol0 = 0;\n mappings += segments\n .map(function (segment) {\n // zero-based starting column of the line in the generated code\n var /** @type {?} */ segAsStr = toBase64VLQ(segment.col0 - lastCol0);\n lastCol0 = segment.col0;\n if (segment.sourceUrl != null) {\n // zero-based index into the "sources" list\n segAsStr +=\n toBase64VLQ(** @type {?} */ ((sourcesIndex.get(segment.sourceUrl)) - lastSourceIndex));\n lastSourceIndex = /** @type {?} */ ((sourcesIndex.get(segment.sourceUrl));\n // the zero-based starting line in the original source\n segAsStr += toBase64VLQ(** @type {?} */ ((segment.sourceLine0) - lastSourceLine0));\n lastSourceLine0 = /** @type {?} */ ((segment.sourceLine0));\n // the zero-based starting column in the original source\n segAsStr += toBase64VLQ(** @type {?} */ ((segment.sourceCol0) - lastSourceCol0));\n lastSourceCol0 = /** @type {?} */ ((segment.sourceCol0));\n }\n return segAsStr;\n })\n .join(',')\n mappings += ';\n });\n mappings = mappings.slice(0, -1);\n return {\n 'file': this.file || "",\n 'version': VERSION$1,\n 'sourceRoot': "",\n 'sources': sources,\n 'sourcesContent': sourcesContent,\n 'mappings': mappings,\n }; }\n /**\n * @return {?}\n */\n SourceMapGenerator.prototype.toJsComment = /**\n * @return {?}\n */\n function () {\n return this.hasMappings ? '/' + JS_B64_PREFIX + toBase64String(JSON.stringify(this, null, 0)) : "";\n };\n return SourceMapGenerator;\n }());\n /**\n * @param {?} value\n * @return {?}\n */\n function toBase64String(value) {\n var /** @type {?} */ b64 = "";\n value = utf8Encode(value);\n for (var /** @type {?} */ i = 0; i < value.length; i++) {\n var /** @type {?} */ i1 = value.charCodeAt(i);\n var /** @type {?} */ i2 = value.charCodeAt(i+1);\n var /** @type {?} */ i3 = value.charCodeAt(i+2);\n b64 += toBase64Digit(i1 >> 2);\n b64 += toBase64Digit(((i1 & 3) << 4) | (isNaN(i2) ? 0 : i2 >> 4));\n b64 +=

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/**\n * @return {?}\n *\n EmitterVisitorContext.prototype.toSource = /**\n * @return {?}\n *\n function () {\n return this.sourceLines\n .map(function (l) { return l.parts.length > 0 ?\n _createIndent(l.indent) + l.parts.join(" : "; })\n .join("\n");\n });\n /**\n * @param {?} genFilePath\n * @param {?=} startsAtLine\n * @return {?}\n *\n EmitterVisitorContext.prototype.toSourceMapGenerator\n = /**\n * @param {?} genFilePath\n * @param {?=} startsAtLine\n * @return {?}\n *\n function\n (genFilePath, startsAtLine) {\n if (startsAtLine === void 0) { startsAtLine = 0; }\n var /** @type {?} */\n map = new SourceMapGenerator(genFilePath);\n var /** @type {?} */ firstOffsetMapped = false;\n var /**\n @type {?} */ mapFirstOffsetIfNeeded = function () {\n if (!firstOffsetMapped) {\n // Add a single\n space so that tools won't try to load the file from disk.\n // Note: We are using virtual urls like `ng://`, so\n we have to\n // provide a content here.\n map.addSource(genFilePath, ' ').addMapping(0,\n genFilePath, 0, 0);\n firstOffsetMapped = true;\n }\n });\n for (var /** @type {?} */ i = 0; i\n < startsAtLine; i++) {\n map.addLine();\n mapFirstOffsetIfNeeded();\n }\n this.sourceLines.forEach(function (line, lineIdx) {\n map.addLine();\n var /** @type {?} */ spans =\n line.srcSpans;\n var /** @type {?} */ parts = line.parts;\n var /** @type {?} */ col0 = line.indent *\n _INDENT_WITH.length;\n var /** @type {?} */ spanIdx = 0;\n // skip leading parts without source\n spans\n while (spanIdx < spans.length && !spans[spanIdx]) {\n col0 += parts[spanIdx].length;\n spanIdx++;\n }\n if (spanIdx < spans.length && lineIdx === 0 && col0 === 0) {\n firstOffsetMapped = true;\n }\n else {\n mapFirstOffsetIfNeeded();\n }\n while\n (spanIdx < spans.length) {\n var /** @type {?} */ span = /** @type {?} */ ((spans[spanIdx]));\n var /** @type {?} */ source = span.start.file;\n var /** @type {?} */ sourceLine = span.start.line;\n var /** @type {?} */ sourceCol = span.start.col;\n map.addSource(source.url, source.content)\n .addMapping(col0, source.url, sourceLine, sourceCol);\n col0 += parts[spanIdx].length;\n spanIdx++;\n // assign parts without span or the same span to the previous segment\n while\n (spanIdx < spans.length && (span === spans[spanIdx] || !spans[spanIdx])) {\n col0 +=\n parts[spanIdx].length;\n spanIdx++;\n }\n });\n return map;\n });\n /**\n * @param {?} count\n * @return {?}\n *\n EmitterVisitorContext.prototype.setPreambleLineCount = /**\n * @param {?} count\n * @return {?}\n *\n function (count) { return this._preambleLineCount = count;\n };\n /**\n * @param {?} line\n * @param {?} column\n * @return {?}\n *\n EmitterVisitorContext.prototype.spanOf = /**\n * @param {?} line\n * @param {?} column\n * @return\n {?}\n *\n function (line, column) {\n var /** @type {?} */ emittedLine = this._lines[line -\n this._preambleLineCount];\n if (emittedLine) {\n var /** @type {?} */ columnsLeft = column -\n _createIndent(emittedLine.indent).length;\n for (var /** @type {?} */ partIndex = 0; partIndex <\n emittedLine.parts.length; partIndex++) {\n var /** @type {?} */ part = emittedLine.parts[partIndex];\n if (part.length > columnsLeft) {\n return emittedLine.srcSpans[partIndex];\n }\n columnsLeft -= part.length;\n }\n }\n return null;\n };\n\n Object.defineProperty(EmitterVisitorContext.prototype, "sourceLines", {\n get: /**\n * @return {?}\n *\n function () {\n if (this._lines.length && this._lines[this._lines.length - 1].parts.length === 0) {\n return this._lines.slice(0, -1);\n }\n return this._lines;\n },\n enumerable: true,\n configurable: true\n });\n return EmitterVisitorContext;\n }());\n\n /**\n * @abstract\n *\n\n AbstractEmitterVisitor = /** @class */ (function () {\n function AbstractEmitterVisitor(_escapeDollarInStrings)\n {\n this._escapeDollarInStrings = _escapeDollarInStrings;\n }\n /**\n * @param {?} stmt\n * @param\n {?} ctx\n * @return {?}\n *\n AbstractEmitterVisitor.prototype.visitExpressionStmt = /**\n * @param\n {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n function (stmt, ctx) {\n stmt.expr.visitExpression(this, ctx);\n ctx.println(stmt, ',');\n return null;\n };\n /**\n * @param {?}\n stmt\n * @param {?} ctx\n * @return {?}\n *\n AbstractEmitterVisitor.prototype.visitReturnStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n function (stmt, ctx) {\n ctx.print(stmt, "return ");\n stmt.value.visitExpression(this, ctx);\n ctx.println(stmt, ',');\n return null;\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n

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AbstractEmitterVisitor.prototype.visitIfStmt = /**\n
 * @param {?} stmt\n
 * @param {?} ctx\n
 * @return
{?}\n
 *^\n
 function (stmt, ctx) {\n
 ctx.print(stmt, \"if (\\");\n
 stmt.condition.visitExpression(this, ctx);\n
 ctx.print(stmt, \" \");\n
 var /** @type {?} */ hasElseCase = stmt.falseCase != null &&
stmt.falseCase.length > 0;\n
 if (stmt.trueCase.length <= 1 && !hasElseCase) {\n
 ctx.print(stmt, \" \");\n
 this.visitAllStatements(stmt.trueCase, ctx);\n
 ctx.removeEmptyLastLine();\n
 ctx.print(stmt, \"
\\");\n
 }\n
 else {\n
 ctx.println();\n
 ctx.incIndent();\n
 this.visitAllStatements(stmt.trueCase, ctx);\n
 ctx.decIndent();\n
 if (hasElseCase) {\n
 ctx.println(stmt, \" } else {\");\n
 ctx.incIndent();\n
 this.visitAllStatements(stmt.falseCase, ctx);\n
 ctx.decIndent();\n
 }\n
 }\n
 ctx.println(stmt, \"}\");\n
 return null;\n
};\n
/**\n
 *
@param {?} stmt\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitThrowStmt = /**\n
 * @param {?} stmt\n
 * @param {?} ctx\n
 *
@return {?}]\n
 *^\n
 function (stmt, ctx) {\n
 ctx.print(stmt, \"throw \");\n
 stmt.error.visitExpression(this,
ctx);\n
 ctx.println(stmt, \";\");\n
 return null;\n
};\n
/**\n
 * @param {?} stmt\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitCommentStmt = /**\n
 * @param {?} stmt\n
 *
@param {?} ctx\n
 * @return {?}]\n
 *^\n
 function (stmt, ctx) {\n
 var /** @type {?} */ lines =
stmt.comment.split("\\n");\n
 lines.forEach(function (line) { ctx.println(stmt, \"//\" + line); });\n
 return null;\n
};\n
/**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitWriteVarExpr = /**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 *
@return {?}]\n
 *^\n
 function (expr, ctx) {\n
 var /** @type {?} */ lineWasEmpty = ctx.lineIsEmpty();\n
 if (!lineWasEmpty) {\n
 ctx.print(expr, '(');\n
 }\n
 ctx.print(expr, expr.name + \" = \");\n
 expr.value.visitExpression(this, ctx);\n
 if (!lineWasEmpty) {\n
 ctx.print(expr, ');'\n
 }\n
 return
null;\n
};\n
/**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitWriteKeyExpr = /**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 *
@return {?}]\n
 *^\n
 function (expr, ctx) {\n
 var /** @type {?} */ lineWasEmpty = ctx.lineIsEmpty();\n
 if (!lineWasEmpty) {\n
 ctx.print(expr, '(');\n
 }\n
 expr.receiver.visitExpression(this, ctx);\n
 ctx.print(expr, \"[\\");\n
 expr.index.visitExpression(this, ctx);\n
 ctx.print(expr, \" = \");\n
 expr.value.visitExpression(this, ctx);\n
 if (!lineWasEmpty) {\n
 ctx.print(expr, ');'\n
 }\n
 return
null;\n
};\n
/**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitWritePropExpr = /**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 *
@return {?}]\n
 *^\n
 function (expr, ctx) {\n
 var /** @type {?} */ lineWasEmpty = ctx.lineIsEmpty();\n
 if (!lineWasEmpty) {\n
 ctx.print(expr, '(');\n
 }\n
 expr.receiver.visitExpression(this, ctx);\n
 ctx.print(expr, \".\" + expr.name + \" = \");\n
 expr.value.visitExpression(this, ctx);\n
 if (!lineWasEmpty) {\n
 ctx.print(expr, ');'\n
 }\n
 return
null;\n
};\n
/**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitInvokeMethodExpr = /**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
 function (expr, ctx) {\n
 expr.receiver.visitExpression(this,
ctx);\n
 var /** @type {?} */ name = expr.name;\n
 if (expr.builtin != null) {\n
 name =
this.getBuiltinMethodName(expr.builtin);\n
 if (name == null) {\n
 // some builtins just mean to skip
the call.\n
 return null;\n
 }\n
 }\n
 ctx.print(expr, \".\" + name + \"(\\");\n
 this.visitAllExpressions(expr.args, ctx, \",\");\n
 ctx.print(expr, \")\");\n
 return null;\n
};\n
/**\n
 *
@param {?} expr\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitInvokeFunctionExpr = /**\n
 * @param {?} expr\n
 * @param {?} ctx\n
 *
@return {?}]\n
 *^\n
 function (expr, ctx) {\n
 expr.fn.visitExpression(this, ctx);\n
 ctx.print(expr, \"(\\");\n
 this.visitAllExpressions(expr.args, ctx, ',');\n
 ctx.print(expr, \")\");\n
 return null;\n
};\n
/**\n
 *
@param {?} ast\n
 * @param {?} ctx\n
 * @return {?}]\n
 *^\n
AbstractEmitterVisitor.prototype.visitReadVarExpr = /**\n
 * @param {?} ast\n
 * @param {?} ctx\n
 *
@return {?}]\n
 *^\n
 function (ast, ctx) {\n
 var /** @type {?} */ varName = /** @type {?} */ ((ast.name));\n
 if (ast.builtin != null) {\n
 switch (ast.builtin) {\n
 case BuiltinVar.Super:\n
 varName =
'super';\n
 break;\n
 case BuiltinVar.This:\n
 varName = 'this';\n
 break;\n
 }

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 case BuiltinVar.CatchError:\n varName = /** @type {?} */\n ((CATCH_ERROR_VAR$1.name));\n break;\n case BuiltinVar.CatchStack:\n varName = /** @type {?} */ ((CATCH_STACK_VAR$1.name));\n break;\n default:\n throw new Error("Unknown builtin variable " + ast.builtin);\n }\n }\n ctx.print(ast, varName);\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitInstantiateExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n ctx.print(ast, "new ");\n ast.classExpr.visitExpression(this,\n ctx);\n ctx.print(ast, "(");\n this.visitAllExpressions(ast.args, ctx, ',');\n ctx.print(ast, "\\)");\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitLiteralExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n var /** @type {?} */ value = ast.value;\n if (typeof value === 'string')\n {\n ctx.print(ast, escapeIdentifier(value, this._escapeDollarInStrings));\n }\n else {\n ctx.print(ast, "\"" + value);\n }\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitConditionalExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n ctx.print(ast, "(");\n ast.condition.visitExpression(this, ctx);\n ctx.print(ast, '? ');\n ast.trueCase.visitExpression(this, ctx);\n ctx.print(ast, ': '); /** @type {?} */\n ((ast.falseCase)).visitExpression(this, ctx);\n ctx.print(ast, "\\)");\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitNotExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n ctx.print(ast, '!');\n ast.condition.visitExpression(this, ctx);\n return\n null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitAssertNotNullExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n ast.condition.visitExpression(this, ctx);\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitBinaryOperatorExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n var /** @type {?} */ opStr;\n switch (ast.operator) {\n case BinaryOperator.Equals:\n opStr = '==';\n break;\n case BinaryOperator.Idential:\n opStr = '===';\n break;\n case BinaryOperator.NotEquals:\n opStr = '!=';\n break;\n case BinaryOperator.NotIdential:\n opStr = '!==';\n break;\n case\n BinaryOperator.And:\n opStr = '&&';\n break;\n case BinaryOperator.Or:\n opStr\n = '||';\n break;\n case BinaryOperator.Plus:\n opStr = '+';\n break;\n case\n BinaryOperator.Minus:\n opStr = '-';\n break;\n case BinaryOperator.Divide:\n opStr\n = '/';\n break;\n case BinaryOperator.Multiply:\n opStr = '*';\n break;\n case\n BinaryOperator.Modulo:\n opStr = '%';\n break;\n case BinaryOperator.Lower:\n opStr\n = '<';\n break;\n case BinaryOperator.LowerEquals:\n opStr = '<=';\n break;\n case\n BinaryOperator.Bigger:\n opStr = '>';\n break;\n case\n BinaryOperator.BiggerEquals:\n opStr = '>=';\n break;\n default:\n throw new\n Error("Unknown operator " + ast.operator);\n }\n ctx.print(ast, "(");\n ast.lhs.visitExpression(this,\n ctx);\n ctx.print(ast, " " + opStr + " ");\n ast.rhs.visitExpression(this, ctx);\n ctx.print(ast, "\\)");\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitReadPropExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n ast.receiver.visitExpression(this, ctx);\n ctx.print(ast, "\\.");\n ctx.print(ast, ast.name);\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitReadKeyExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n function (ast, ctx) {\n ast.receiver.visitExpression(this, ctx);\n ctx.print(ast, "\\[");\n ast.index.visitExpression(this, ctx);\n ctx.print(ast, "\\]");\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} \n */\n AbstractEmitterVisitor.prototype.visitLiteralArrayExpr = /**\n * @param {?} ast\n * @param {?} ctx\n *

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@return {?} \n * \n function (ast, ctx) { \n ctx.print(ast, '['); \n this.visitAllExpressions(ast.entries, ctx,
'); \n ctx.print(ast, ']); \n return null; \n }; \n /** \n * @param {?} ast \n * @param {?} ctx \n *
@return {?} \n * \n AbstractEmitterVisitor.prototype.visitLiteralMapExpr = /** \n * @param {?} ast \n *
@param {?} ctx \n * @return {?} \n * \n function (ast, ctx) { \n var _this = this; \n ctx.print(ast,
 '['); \n this.visitAllObjects(function (entry) { \n ctx.print(ast, escapeIdentifier(entry.key,
 _this._escapeDollarInStrings, entry.quoted) + ':'); \n entry.value.visitExpression(_this, ctx); \n },
 ast.entries, ctx, '); \n ctx.print(ast, ']); \n return null; \n }; \n /** \n * @param {?} ast \n * @param
 {?} ctx \n * @return {?} \n * \n AbstractEmitterVisitor.prototype.visitCommaExpr = /** \n * @param {?}
 ast \n * @param {?} ctx \n * @return {?} \n * \n function (ast, ctx) { \n ctx.print(ast, ','); \n
 this.visitAllExpressions(ast.parts, ctx, ','); \n ctx.print(ast, '); \n return null; \n }; \n /** \n * @param {?}
 expressions \n * @param {?} ctx \n * @param {?} separator \n * @return {?} \n * \n
AbstractEmitterVisitor.prototype.visitAllExpressions = /** \n * @param {?} expressions \n * @param {?} ctx \n
 * @param {?} separator \n * @return {?} \n * \n function (expressions, ctx, separator) { \n var _this =
 this; \n this.visitAllObjects(function (expr) { return expr.visitExpression(_this, ctx); }, expressions, ctx,
 separator); \n }; \n /** \n * @template T \n * @param {?} handler \n * @param {?} expressions \n *
@param {?} ctx \n * @param {?} separator \n * @return {?} \n * \n
AbstractEmitterVisitor.prototype.visitAllObjects = /** \n * @template T \n * @param {?} handler \n *
@param {?} expressions \n * @param {?} ctx \n * @param {?} separator \n * @return {?} \n * \n function
(handler, expressions, ctx, separator) { \n var /** @type {?} */ incrementedIndent = false; \n for (var /**
 @type {?} */ i = 0; i < expressions.length; i++) { \n if (i > 0) { \n if (ctx.lineLength() > 80) { \n
ctx.print(null, separator, true); \n if (!incrementedIndent) { \n // continuation are
marked with double indent. \n ctx.incIndent(); \n ctx.incIndent(); \n
incrementedIndent = true; \n } \n } \n else { \n ctx.print(null, separator,
false); \n } \n } \n handler(expressions[i]); \n } \n if (incrementedIndent) { \n //
continuation are marked with double indent. \n ctx.decIndent(); \n ctx.decIndent(); \n } \n }; \n
/** \n * @param {?} statements \n * @param {?} ctx \n * @return {?} \n * \n
AbstractEmitterVisitor.prototype.visitAllStatements = /** \n * @param {?} statements \n * @param {?} ctx \n
 * @return {?} \n * \n function (statements, ctx) { \n var _this = this; \n statements.forEach(function
(stmt) { return stmt.visitStatement(_this, ctx); }); \n }; \n return AbstractEmitterVisitor; \n }); \n /** \n * @param
 {?} input \n * @param {?} escapeDollar \n * @param {?}=?} alwaysQuote \n * @return {?} \n * \n function
escapeIdentifier(input, escapeDollar, alwaysQuote) { \n if (alwaysQuote === void 0) { alwaysQuote = true; } \n if
(input == null) { \n return null; \n } \n var /** @type {?} */ body =
input.replace(_SINGLE_QUOTE_ESCAPE_STRING_RE, function () { \n var match = []; \n for (var _i = 0;
_i < arguments.length; _i++) { \n match[_i] = arguments[_i]; \n } \n if (match[0] === '$') { \n
return escapeDollar ? '\\\\$' : '$'; \n } \n else if (match[0] === '\\n') { \n return '\\\\n'; \n } \n else if
(match[0] === '\\r') { \n return '\\\\r'; \n } \n else { \n return '\\\\' + match[0]; \n } \n }); \n
var /** @type {?} */ requiresQuotes = alwaysQuote || !_LEGAL_IDENTIFIER_RE.test(body); \n return
requiresQuotes ? '\"' + body + '\"' : body; \n } \n /** \n * @param {?} count \n * @return {?} \n * \n function
_createIndent(count) { \n var /** @type {?} */ res = ''; \n for (var /** @type {?} */ i = 0; i < count; i++) { \n
res += _INDENT_WITH; \n } \n return res; \n } \n \n /** \n * @fileoverview added by tsickle \n * @suppress
{checkTypes} checked by tsc \n * \n /** \n * @license \n * Copyright Google Inc. All Rights Reserved. \n * \n * Use of
this source code is governed by an MIT-style license that can be \n * found in the LICENSE file at
https://angular.io/license \n * \n /** \n * @param {?} ast \n * @return {?} \n * \n function
debugOutputAstAsTypeScript(ast) { \n var /** @type {?} */ converter = new _TsEmitterVisitor(); \n var /**
 @type {?} */ ctx = EmitterVisitorContext.createRoot(); \n var /** @type {?} */ asts = Array.isArray(ast) ? ast :
[ast]; \n asts.forEach(function (ast) { \n if (ast instanceof Statement) { \n ast.visitStatement(converter,
ctx); \n } \n else if (ast instanceof Expression) { \n ast.visitExpression(converter, ctx); \n } \n
else if (ast instanceof Type$1) { \n ast.visitType(converter, ctx); \n } \n else { \n throw new

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Error("Don't know how to print debug info for \" + ast);\n }\n });\n return ctx.toSource();\n}\n\nvar\nTypeScriptEmitter = /** @class */ (function () {\n function TypeScriptEmitter() {\n }\n /**\n * @param\n {?} genFilePath\n * @param {?} stmts\n * @param {?=} preamble\n * @param {?=} emitSourceMaps\n * @param {?=} referenceFilter\n * @return {?}\n */\n\n TypeScriptEmitter.prototype.emitStatementsAndContext = /**\n * @param {?} genFilePath\n * @param {?}\n stmts\n * @param {?=} preamble\n * @param {?=} emitSourceMaps\n * @param {?=} referenceFilter\n * @return {?}\n */\n function (genFilePath, stmts, preamble, emitSourceMaps, referenceFilter) {\n if\n (preamble === void 0) { preamble = "; }\n if (emitSourceMaps === void 0) { emitSourceMaps = true; }\n var /** @type {?} */ converter = new _TsEmitterVisitor(referenceFilter);\n var /** @type {?} */ ctx =\n EmitterVisitorContext.createRoot();\n converter.visitAllStatements(stmts, ctx);\n var /** @type {?} */\n preambleLines = preamble ? preamble.split("\\n") : [];\n converter.reexports.forEach(function (reexports,\n exportedModuleName) {\n var /** @type {?} */ reexportsCode = reexports.map(function (reexport) { return\n reexport.name + \" as \" + reexport.as; }).join(',');\n preambleLines.push(\"export {\" + reexportsCode + \"}\n from \" + exportedModuleName + \";\";\n });\n converter.importsWithPrefixes.forEach(function (prefix,\n importedModuleName) {\n // Note: can't write the real word for import as it screws up system.js auto\n detection...\n preambleLines.push(\"imp\" +\n (\"ort * as \" + prefix + \" from \" +\n importedModuleName + \";\"));\n });\n var /** @type {?} */ sm = emitSourceMaps ?\n ctx.toSourceMapGenerator(genFilePath, preambleLines.length).toJsComment() :\n \"\";\n var /** @type\n {?} */ lines = preambleLines.concat([ctx.toSource(), sm]);\n if (sm) {\n // always add a newline at the\n end, as some tools have bugs without it.\n lines.push(\");\n }\n ctx.setPreambleLineCount(preambleLines.length);\n return { sourceText: lines.join(\"\\n\"), context: ctx }; }\n });\n\n /**\n * @param {?} genFilePath\n * @param {?} stmts\n * @param {?=} preamble\n * @return {?}\n */\n\n TypeScriptEmitter.prototype.emitStatements = /**\n * @param {?} genFilePath\n * @param {?} stmts\n * @param {?=} preamble\n * @return {?}\n */\n function (genFilePath, stmts, preamble) {\n if\n (preamble === void 0) { preamble = "; }\n return this.emitStatementsAndContext(genFilePath, stmts,\n preamble).sourceText;\n });\n\n return TypeScriptEmitter;\n})();\n\nvar _TsEmitterVisitor = /** @class */ (function\n (_super) {\n __extends(_TsEmitterVisitor, _super);\n function _TsEmitterVisitor(referenceFilter) {\n var\n _this = _super.call(this, false) || this;\n _this.referenceFilter = referenceFilter;\n _this.typeExpression = 0;\n _this.importsWithPrefixes = new Map();\n _this.reexports = new Map();\n return _this;\n }\n /**\n * @param {?} t\n * @param {?} ctx\n * @param {?=} defaultType\n * @return {?}\n */\n\n _TsEmitterVisitor.prototype.visitType = /**\n * @param {?} t\n * @param {?} ctx\n * @param {?}\n defaultType\n * @return {?}\n */\n function (t, ctx, defaultType) {\n if (defaultType === void 0) {\n defaultType = 'any';\n }\n if (t) {\n this.typeExpression++;\n t.visitType(this, ctx);\n this.typeExpression--;\n }\n else {\n ctx.print(null, defaultType);\n }\n });\n\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n\n _TsEmitterVisitor.prototype.visitLiteralExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n function (ast, ctx) {\n var /**\n @type {?} */ value = ast.value;\n if (value == null && ast.type != INFERRED_TYPE) {\n ctx.print(ast,\n \"(\" + value + \" as any)\");\n return null;\n }\n return _super.prototype.visitLiteralExpr.call(this, ast,\n ctx);\n });\n\n // Temporary workaround to support strictNullCheck enabled consumers of ngc emit.\n // In SNC\n mode, [] have the type never[], so we cast here to any[].\n // TODO: narrow the cast to a more explicit type, or use\n a pattern that does not\n // start with [].concat. see https://github.com/angular/angular/pull/11846\n\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n\n _TsEmitterVisitor.prototype.visitLiteralArrayExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n function (ast, ctx) {\n if (ast.entries.length === 0) {\n ctx.print(ast, '(');\n }\n var /** @type {?} */ result = _super.prototype.visitLiteralArrayExpr.call(this, ast, ctx);\n if (ast.entries.length\n === 0) {\n ctx.print(ast, ' as any[]');\n }\n return result;\n });\n\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n\n _TsEmitterVisitor.prototype.visitExternalExpr = /**\n * @param\n {?} ast\n * @param {?} ctx\n * @return {?}\n */\n function (ast, ctx) {\n this._visitIdentifier(ast.value,\n

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ast.typeParams, ctx);\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return\n {?}\n *\n _TsEmitterVisitor.prototype.visitAssertNotNullExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype.visitAssertNotNullExpr.call(this, ast, ctx);\n ctx.print(ast, '!');\n return result;\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype.visitDeclareVarStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n function (stmt, ctx) {\n if (stmt.hasModifier(StmtModifier.Exported) && stmt.value\n instanceof ExternalExpr &&\n !stmt.type) {\n // check for a reexport\n var _a =\n stmt.value.value, name_1 = _a.name, moduleName = _a.moduleName;\n if (moduleName) {\n var\n /** @type {?} */ reexports = this.reexports.get(moduleName);\n if (!reexports) {\n reexports =\n [];\n this.reexports.set(moduleName, reexports);\n }\n reexports.push({ name: /**\n @type {?} */ ((name_1)), as: stmt.name });\n return null;\n }\n }\n if\n (stmt.hasModifier(StmtModifier.Exported)) {\n ctx.print(stmt, 'export ');\n }\n if\n (stmt.hasModifier(StmtModifier.Final)) {\n ctx.print(stmt, 'const');\n }\n else {\n ctx.print(stmt, 'var');\n }\n ctx.print(stmt, ' ' + stmt.name);\n this._printColonType(stmt.type,\n ctx);\n ctx.print(stmt, ' = ');\n stmt.value.visitExpression(this, ctx);\n ctx.println(stmt, ';');\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype.visitCastExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n *\n function (ast, ctx) {\n ctx.print(ast, '<');\n /** @type {?} */\n ((ast.type)).visitType(this, ctx);\n ctx.print(ast, '>');\n ast.value.visitExpression(this, ctx);\n ctx.print(ast, ' |');\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype.visitInstantiateExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return\n {?}\n *\n function (ast, ctx) {\n ctx.print(ast, 'new ');\n this.typeExpression++;\n ast.classExpr.visitExpression(this, ctx);\n this.typeExpression--;\n ctx.print(ast, '(');\n this.visitAllExpressions(ast.args, ctx, ',');\n ctx.print(ast, ')');\n return null;\n };\n /**\n * @param\n {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype.visitDeclareClassStmt =\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n function (stmt, ctx) {\n var\n _this = this;\n ctx.pushClass(stmt);\n if (stmt.hasModifier(StmtModifier.Exported)) {\n ctx.print(stmt, 'export ');\n }\n ctx.print(stmt, 'class ' + stmt.name);\n if (stmt.parent != null) {\n ctx.print(stmt, ' extends ');\n this.typeExpression++;\n stmt.parent.visitExpression(this, ctx);\n this.typeExpression--;\n }\n ctx.println(stmt, '{');\n ctx.incIndent();\n stmt.fields.forEach(function (field) { return _this._visitClassField(field, ctx); });\n if (stmt.constructorMethod\n != null) {\n this._visitClassConstructor(stmt, ctx);\n }\n stmt.getters.forEach(function (getter) {\n return _this._visitClassGetter(getter, ctx); });\n stmt.methods.forEach(function (method) { return\n _this._visitClassMethod(method, ctx); });\n ctx.decIndent();\n ctx.println(stmt, '}');\n ctx.popClass();\n return null;\n };\n /**\n * @param {?} field\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype._visitClassField = /**\n * @param {?} field\n * @param {?} ctx\n * @return {?}\n *\n function (field, ctx) {\n if (field.hasModifier(StmtModifier.Private)) {\n //\n comment out as a workaround for #10967\n ctx.print(null, '/*private*/');\n }\n ctx.print(null,\n field.name);\n this._printColonType(field.type, ctx);\n ctx.println(null, ';');\n };\n /**\n * @param\n {?} getter\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype._visitClassGetter =\n /**\n * @param {?} getter\n * @param {?} ctx\n * @return {?}\n *\n function (getter, ctx) {\n if\n (getter.hasModifier(StmtModifier.Private)) {\n ctx.print(null, 'private ');\n }\n ctx.print(null, 'get\n '\n + getter.name + '()');\n this._printColonType(getter.type, ctx);\n ctx.println(null, '{');\n ctx.incIndent();\n this.visitAllStatements(getter.body, ctx);\n ctx.decIndent();\n ctx.println(null,\n '}\n ');;\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n _TsEmitterVisitor.prototype._visitClassConstructor = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n function (stmt, ctx) {\n ctx.print(stmt, 'constructor(');\n
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this._visitParams(stmt.constructorMethod.params, ctx);\n ctx.println(stmt, "\\");\n ctx.incIndent();\nthis.visitAllStatements(stmt.constructorMethod.body, ctx);\n ctx.decIndent();\n ctx.println(stmt, "\\");\n};\n /**\n * @param {?} method\n * @param {?} ctx\n * @return {?}\n */\n_TsEmitterVisitor.prototype._visitClassMethod = /**\n * @param {?} method\n * @param {?} ctx\n * @return {?}\n */\n function (method, ctx) {\n if (method.hasModifier(StmtModifier.Private)) {\n ctx.print(null, "private ");\n }\n ctx.print(null, method.name + "\\");\nthis._visitParams(method.params, ctx);\n ctx.print(null, "\\");\n this._printColonType(method.type, ctx,\n'void');\n ctx.println(null, "\\");\n ctx.incIndent();\n this.visitAllStatements(method.body, ctx);\n ctx.decIndent();\n ctx.println(null, "\\");\n};\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype.visitFunctionExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n function (ast, ctx) {\n ctx.print(ast, "\\");\nthis._visitParams(ast.params, ctx);\n ctx.print(ast, "\\");\n this._printColonType(ast.type, ctx, 'void');\n ctx.println(ast, " => ");\n ctx.incIndent();\n this.visitAllStatements(ast.statements, ctx);\n ctx.decIndent();\n ctx.print(ast, "\\");\n return null;\n};\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype.visitDeclareFunctionStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, ctx) {\n if\n(stmt.hasModifier(StmtModifier.Exported)) {\n ctx.print(stmt, "export ");\n }\n ctx.print(stmt,\n"function " + stmt.name + "\\");\n this._visitParams(stmt.params, ctx);\n ctx.print(stmt, "\\");\nthis._printColonType(stmt.type, ctx, 'void');\n ctx.println(stmt, "\\");\n ctx.incIndent();\nthis.visitAllStatements(stmt.statements, ctx);\n ctx.decIndent();\n ctx.println(stmt, "\\");\n return\nnull;\n};\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype.visitTryCatchStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return\n{?}\n */\n function (stmt, ctx) {\n ctx.println(stmt, "try ");\n ctx.incIndent();\nthis.visitAllStatements(stmt.bodyStmts, ctx);\n ctx.decIndent();\n ctx.println(stmt, "} catch (" +\nCATCH_ERROR_VAR$.name + "\\");\n ctx.incIndent();\n var /** @type {?} */ catchStmts = [/**\n @type {?} */ (CATCH_STACK_VAR$.set(CATCH_ERROR_VAR$.prop('stack', null)).toDeclStmt(null, [\n StmtModifier.Final\n])).concat(stmt.catchStmts);\n this.visitAllStatements(catchStmts, ctx);\n ctx.decIndent();\n ctx.println(stmt, "\\");\n return null;\n};\n /**\n * @param {?} type\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype.visitBuiltinType = /**\n * @param\n{?}\n type\n * @param {?} ctx\n * @return {?}\n */\n function (type, ctx) {\n var /** @type {?} */\ntypeStr;\n switch (type.name) {\n case BuiltinTypeName.Bool:\n typeStr = 'boolean';\n break;\n case BuiltinTypeName.Dynamic:\n typeStr = 'any';\n break;\n case\nBuiltinTypeName.Function:\n typeStr = 'Function';\n break;\n case\nBuiltinTypeName.Number:\n typeStr = 'number';\n break;\n case BuiltinTypeName.Int:\n \ntypeStr = 'number';\n break;\n case BuiltinTypeName.String:\n typeStr = 'string';\n break;\n default:\n throw new Error("Unsupported builtin type " + type.name);\n }\n ctx.print(null, typeStr);\n return null;\n};\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return\n{?}\n */\n _TsEmitterVisitor.prototype.visitExpressionType = /**\n * @param {?} ast\n * @param\n{?}\n ctx\n * @return {?}\n */\n function (ast, ctx) {\n ast.value.visitExpression(this, ctx);\n return null;\n};\n /**\n * @param {?} type\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype.visitArrayType = /**\n * @param {?} type\n * @param {?} ctx\n * @return\n{?}\n */\n function (type, ctx) {\n this.visitType(type.of, ctx);\n ctx.print(null, "[]");\n return\nnull;\n};\n /**\n * @param {?} type\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype.visitMapType = /**\n * @param {?} type\n * @param {?} ctx\n * @return\n{?}\n */\n function (type, ctx) {\n ctx.print(null, "[key: string:");\n this.visitType(type.valueType,\nctx);\n ctx.print(null, "];\n};\n /**\n * @param {?} method\n * @return {?}\n */\n _TsEmitterVisitor.prototype.getBuiltinMethodName = /**\n * @param {?} method\n * @return {?}\n */\n function (method) {\n var /** @type {?} */ name;\n switch (method) {\n case

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BuiltinMethod.ConcatArray:\n name = 'concat';\n break;\n case
BuiltinMethod.SubscribeObservable:\n name = 'subscribe';\n break;\n case
BuiltinMethod.Bind:\n name = 'bind';\n break;\n default:\n throw new
Error("Unknown builtin method: " + method);\n }\n return name;\n };\n /**\n * @param {?}
params\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype._visitParams = /**\n *
@param {?} params\n * @param {?} ctx\n * @return {?}\n */\n function (params, ctx) {\n var _this =
this;\n this.visitAllObjects(function (param) {\n ctx.print(null, param.name);\n _this._printColonType(param.type, ctx);\n }, params, ctx, ',');\n };\n /**\n * @param {?} value\n *
@param {?} typeParams\n * @param {?} ctx\n * @return {?}\n */\n _TsEmitterVisitor.prototype._visitIdentifier = /**\n * @param {?} value\n * @param {?} typeParams\n *
@param {?} ctx\n * @return {?}\n */\n function (value, typeParams, ctx) {\n var _this = this;\n var
name = value.name, moduleName = value.moduleName;\n if (this.referenceFilter &&
this.referenceFilter(value)) {\n ctx.print(null, '(null as any)');\n return;\n }\n if (moduleName)
{\n var /** @type {?} */ prefix = this.importsWithPrefixes.get(moduleName);\n if (prefix == null) {\n
prefix = "i" + this.importsWithPrefixes.size;\n this.importsWithPrefixes.set(moduleName,
prefix);\n }\n ctx.print(null, prefix + ".");\n }\n ctx.print(null, /** @type {?} */ ((name)));\n
if (this.typeExpression > 0) {\n // If we are in a type expression that refers to a generic type then supply\n
// the required type parameters. If there were not enough type parameters\n // supplied, supply any as the
type. Outside a type expression the reference\n // should not supply type parameters and be treated as a
simple value reference\n // to the constructor function itself.\n var /** @type {?} */
suppliedParameters = typeParams || [];\n if (suppliedParameters.length > 0) {\n ctx.print(null,
"<");\n this.visitAllObjects(function (type) { return type.visitType(_this, ctx); }, /** @type {?} */
((typeParams)), ctx, ',');\n ctx.print(null, ">");\n }\n };\n /**\n * @param {?} type\n * @param {?} ctx\n * @param {?}= defaultType\n * @return {?}\n */\n _TsEmitterVisitor.prototype._printColonType = /**\n * @param {?} type\n * @param {?} ctx\n * @param
{?}= defaultType\n * @return {?}\n */\n function (type, ctx, defaultType) {\n if (type !==
INFERRED_TYPE) {\n ctx.print(null, ':');\n this.visitType(type, ctx, defaultType);\n }\n };\n
return _TsEmitterVisitor;\n})(AbstractEmitterVisitor);\n\n/**\n * @fileoverview added by tsickle\n * @suppress
{checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of
this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n\n * Resolve a `Type` for {@link Pipe}.\n *\n * This interface can be overridden
by the application developer to create custom behavior.\n *\n * See {@link Compiler}\n */\n\nvar PipeResolver =
/** @class */ (function () {\n function PipeResolver(_reflector) {\n this._reflector = _reflector;\n }\n /**\n * @param {?} type\n * @return {?}\n */\n PipeResolver.prototype.isPipe = /**\n * @param {?} type\n *
@return {?}\n */\n function (type) {\n var /** @type {?} */ typeMetadata =
this._reflector.annotations(resolveForwardRef(type));\n return typeMetadata &&
typeMetadata.some(createPipe.isTypeOf);\n };\n /**\n * Return {@link Pipe} for a given `Type`.\n */\n /**\n * Return {@link Pipe} for a given `Type`.\n * @param {?} type\n * @param {?}=
throwIfNotFound\n * @return {?}\n */\n PipeResolver.prototype.resolve = /**\n * Return {@link Pipe}
for a given `Type`.\n * @param {?} type\n * @param {?}= throwIfNotFound\n * @return {?}\n */\n function (type, throwIfNotFound) {\n if (throwIfNotFound === void 0) { throwIfNotFound = true; }\n var
/** @type {?} */ metas = this._reflector.annotations(resolveForwardRef(type));\n if (metas) {\n var /**
@type {?} */ annotation = findLast(metas, createPipe.isTypeOf);\n if (annotation) {\n return
annotation;\n }\n }\n if (throwIfNotFound) {\n throw new Error("No Pipe decorator found on
" + stringify(type));\n }\n return null;\n };\n return PipeResolver;\n})();\n\n/**\n * @fileoverview
added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All
Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n\n * Map from tagName|propertyName SecurityContext.

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Properties applying to all tags use *\n *\nvar SECURITY_SCHEMA = {}; \n/**\n * @param {?} ctx\n * @param {?} specs\n * @return {?}\n *\nfunction registerContext(ctx, specs) {\n for (var _i = 0, specs_1 = specs; _i < specs_1.length; _i++) {\n var spec = specs_1[_i];\n SECURITY_SCHEMA[spec.toLowerCase()] = ctx;\n }\n}\n// Case is insignificant below, all element and attribute names are lower-cased for lookup.\nregisterContext(SecurityContext.HTML, [\n 'iframe|srcdoc',\n '*|innerHTML',\n '*|outerHTML',\n]);\nregisterContext(SecurityContext.STYLE, ['*|style']);\n// NB: no SCRIPT contexts here, they are never allowed due to the parser stripping them.\nregisterContext(SecurityContext.URL, [\n '*|formAction',\n 'area|href', 'area|ping', 'audio|src', 'a|href',\n 'a|ping', 'blockquote|cite', 'body|background', 'del|cite', 'form|action',\n 'img|src', 'img|srcset', 'input|src', 'ins|cite', 'q|cite',\n 'source|src', 'source|srcset', 'track|src', 'video|poster',\n 'video|src',\n]);\nregisterContext(SecurityContext.RESOURCE_URL, [\n 'applet|code',\n 'applet|codebase',\n 'base|href',\n 'embed|src',\n 'frame|src',\n 'head|profile',\n 'html|manifest',\n 'iframe|src',\n 'link|href',\n 'media|src',\n 'object|codebase',\n 'object|data',\n 'script|src',\n]);\n\n\n*\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n*\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n *\n*\n * @abstract\n *\nvar ElementSchemaRegistry = /** @class */ (function () {\n function ElementSchemaRegistry() {\n }\n return ElementSchemaRegistry;\n})();\n\n\n*\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n*\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n\nvar BOOLEAN = 'boolean';\nvar NUMBER = 'number';\nvar STRING = 'string';\nvar OBJECT = 'object';\n\n\n*\n * This array represents the DOM schema. It encodes inheritance, properties, and events.\n *\n * ## Overview\n *\n * Each line represents one kind of element. The `element_inheritance` and properties are joined using `element_inheritance|properties` syntax.\n *\n * ## Element Inheritance\n *\n * The `element_inheritance` can be further subdivided as `element1,element2,...^parentElement`.\n *\n * Here the individual elements are separated by `,` (commas). Every element in the list has identical properties.\n *\n * An `element` may inherit additional properties from `parentElement` If no `^parentElement` is specified then `""` (blank) element is assumed.\n *\n * NOTE: The blank element inherits from root `[Element]` element, the super element of all elements.\n *\n * NOTE an element prefix such as `:svg:` has no special meaning to the schema.\n *\n * ## Properties\n *\n * Each element has a set of properties separated by `,` (commas). Each property can be prefixed by a special character designating its type:\n *\n * - (no prefix): property is a string.\n *\n * - `*`: property represents an event.\n *\n * - `!`: property is a boolean.\n *\n * - `#`: property is a number.\n *\n * - `%`: property is an object.\n *\n * ## Query\n *\n * The class creates an internal squas representation which allows to easily answer the query of if a given property exist on a given element.\n *\n * NOTE: We don't yet support querying for types or events.\n *\n * NOTE: This schema is auto extracted from `schema_extractor.ts` located in the test folder, see `dom_element_schema_registry_spec.ts`\n *\n\nvar SCHEMA = [\n '[Element]|textContent,%classList,className,id,innerHTML,*beforecopy,*beforecut,*beforepaste,*copy,*cut,*paste,*search,*selectstart,*webkitfullscreenchange,*webkitfullscreenerror,*wheel,outerHTML,#scrollLeft,#scrollTop,scrollLeft',\n '*message,*mozfullscreenchange,*mozfullscreenerror,*mozpointerlockchange,*mozpointerlockerror,*webkitcontextcreationerror,*webkitcontextlost,*webkitcontextrestored',\n '[HTMLInputElement]^([Element])|accessKey,contentEditable,dir,!draggable,!hidden,innerText,lang,*abort,*auxclick,*blur,*cancel,*canplay,*canplaythrough,*change,*click,*close,*contextmenu,*cuechange,*dblclick,*drag,*dragend,*dragenter,*dragleave,*dragover,*dragstart,*drop,*durationchange,*emptied,*ended,*error,*focus,*gotpointercapture,*input,*invalid,*keydown,*keypress,*keyup,*load,*loadeddata,*loadedmetadata,*loadstart,*lostpointercapture,*mousedown,*mouseenter,*mouseleave,*mousemove,*mouseout,*mouseover,*mouseup,*mousewheel,*pause,*play,*playing,*pointercancel,*pointerdown,*pointerenter,*pointerleave,*pointermove,*pointerout,*pointerover,*pointerup,*progress,*ratechange,*reset,*resize,*scroll,*seeked,*seeking,*select,*show,*stalled,*submit,*suspend,*timeupdate,*toggle,*volumechange,*waiting,outerText,!spellcheck,%style,#tabIndex,title,!translate',\n
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'abbr,address,article,aside,b,bdi,bdo,cite,code,dd,dfn,dt,em,figcaption,figure,footer,header,i,kbd,main,mark,nav,noscript,rb,rp,rt,rtc,ruby,s,samp,section,small,strong,sub,sup,u,var,wbr^[HTMLInputElement]|accessKey,contentEditable,dir,!draggable,!hidden,innerText,lang,\*abort,\*auxclick,\*blur,\*cancel,\*canplay,\*canplaythrough,\*change,\*click,\*close,\*contextmenu,\*cuechange,\*dblclick,\*drag,\*dragend,\*dragenter,\*dragleave,\*dragover,\*dragstart,\*drop,\*durationchange,\*emptied,\*ended,\*error,\*focus,\*gotpointercapture,\*input,\*invalid,\*keydown,\*keypress,\*keyup,\*load,\*loadeddata,\*loadedmetadata,\*loadstart,\*lostpointercapture,\*mousedown,\*mouseenter,\*mouseleave,\*mousemove,\*mouseout,\*mouseover,\*mouseup,\*mousewheel,\*pause,\*play,\*playing,\*pointercancel,\*pointerdown,\*pointerenter,\*pointerleave,\*pointermove,\*pointerout,\*pointerover,\*pointerup,\*progress,\*ratechange,\*reset,\*resize,\*scroll,\*seeked,\*seeking,\*select,\*show,\*stalled,\*submit,\*suspend,\*timeupdate,\*toggle,\*volumechange,\*waiting,outerText,!spellcheck,%style,#tabIndex,title,!translate',\n

'media^[HTMLInputElement]!autoplay,!controls,%controlsList,%crossOrigin,#currentTime,!defaultMuted,#defaultPlaybackRate,!disableRemotePlayback,!loop,!muted,\*encrypted,\*waitingforkey,#playbackRate,preload,src,%srcObject,#volume',\n

':svg^[HTMLInputElement]|\*abort,\*auxclick,\*blur,\*cancel,\*canplay,\*canplaythrough,\*change,\*click,\*close,\*contextmenu,\*cuechange,\*dblclick,\*drag,\*dragend,\*dragenter,\*dragleave,\*dragover,\*dragstart,\*drop,\*durationchange,\*emptied,\*ended,\*error,\*focus,\*gotpointercapture,\*input,\*invalid,\*keydown,\*keypress,\*keyup,\*load,\*loadeddata,\*loadedmetadata,\*loadstart,\*lostpointercapture,\*mousedown,\*mouseenter,\*mouseleave,\*mousemove,\*mouseout,\*mouseover,\*mouseup,\*mousewheel,\*pause,\*play,\*playing,\*pointercancel,\*pointerdown,\*pointerenter,\*pointerleave,\*pointermove,\*pointerout,\*pointerover,\*pointerup,\*progress,\*ratechange,\*reset,\*resize,\*scroll,\*seeked,\*seeking,\*select,\*show,\*stalled,\*submit,\*suspend,\*timeupdate,\*toggle,\*volumechange,\*waiting,%style,#tabIndex',\n

':svg:graphics^:svg:',\n ' :svg:animation^:svg:|\*begin,\*end,\*repeat',\n ' :svg:geometry^:svg:',\n

':svg:componentTransferFunction^:svg:',\n ' :svg:gradient^:svg:',\n ' :svg:textContent^:svg:graphics',\n

':svg:textPositioning^:svg:textContent',\n

'a^[HTMLInputElement]|charset,coords,download,hash,host,hostname,href,hreflang,name,password,pathname,ping,port,protocol,referrerPolicy,rel,rev,search,shape,target,text,type,username',\n

'area^[HTMLInputElement]|alt,coords,download,hash,host,hostname,href,!noHref,password,pathname,ping,port,protocol,referrerPolicy,rel,search,shape,target,username',\n 'audio^media',\n 'br^[HTMLInputElement]|clear',\n

'base^[HTMLInputElement]|href,target',\n

'body^[HTMLInputElement]|aLink,background,bgColor,link,\*beforeunload,\*blur,\*error,\*focus,\*hashchange,\*languagechange,\*load,\*message,\*offline,\*online,\*pagehide,\*pageshow,\*popstate,\*rejectionhandled,\*resize,\*scroll,\*storage,\*unhandledrejection,\*unload,text,vLink',\n

'button^[HTMLInputElement]!autofocus,!disabled,formAction,formEnctype,formMethod,!formNoValidate,formTarget,name,type,value',\n 'canvas^[HTMLInputElement]|#height,#width',\n 'content^[HTMLInputElement]|select',\n

'dl^[HTMLInputElement]!compact',\n 'datalist^[HTMLInputElement]',\n 'details^[HTMLInputElement]!open',\n

'dialog^[HTMLInputElement]!open,returnValue',\n 'dir^[HTMLInputElement]!compact',\n 'div^[HTMLInputElement]|align',\n 'embed^[HTMLInputElement]|align,height,name,src,type,width',\n 'fieldset^[HTMLInputElement]!disabled,name',\n

'font^[HTMLInputElement]|color,face,size',\n

'form^[HTMLInputElement]|acceptCharset,action,autocomplete,encoding,enctype,method,name,!noValidate,target',\n

'frame^[HTMLInputElement]|frameBorder,longDesc,marginHeight,marginWidth,name,!noResize,scrolling,src',\n

'frameset^[HTMLInputElement]|cols,\*beforeunload,\*blur,\*error,\*focus,\*hashchange,\*languagechange,\*load,\*message,\*offline,\*online,\*pagehide,\*pageshow,\*popstate,\*rejectionhandled,\*resize,\*scroll,\*storage,\*unhandledrejection,\*unload,rows',\n 'hr^[HTMLInputElement]|align,color,!noShade,size,width',\n 'head^[HTMLInputElement]',\n

'h1,h2,h3,h4,h5,h6^[HTMLInputElement]|align',\n 'html^[HTMLInputElement]|version',\n

'iframe^[HTMLInputElement]|align,!allowFullscreen,frameBorder,height,longDesc,marginHeight,marginWidth,name,referrerPolicy,%sandbox,scrolling,src,srcdoc,width',\n

'img^[HTMLInputElement]|align,alt,border,%crossOrigin,#height,#hspace,!isMap,longDesc,lowsrc,name,referrerPolicy,sizes,src,srcset,useMap,#vspace,#width',\n

'input^[HTMLInputElement]|accept,align,alt,autocapitalize,autocomplete,!autofocus,!checked,!defaultChecked,defaultVa

lue,dirName,!disabled,% files,formAction,formEnctype,formMethod,!formNoValidate,formTarget,#height,!incremental,!indeterminate,max,#maxLength,min,#minLength,!multiple,name,pattern,placeholder,!readOnly,!required,selectionDirection,#selectionEnd,#selectionStart,#size,src,step,type,useMap,value,% valueAsDate,#valueAsNumber,#width',\n 'li^[HTMLInputElement]]type,#value',\n 'label^[HTMLInputElement]]htmlFor',\n 'legend^[HTMLInputElement]]align',\n 'link^[HTMLInputElement]]as,charset,% crossOrigin,!disabled,href,hreflang,integrity,media,referrerPolicy,rel,% relList,rev,% sizes,target,type',\n 'map^[HTMLInputElement]]name',\n 'marquee^[HTMLInputElement]]behavior,bgColor,direction,height,#hspace,#loop,#scrollAmount,#scrollDelay,!trueSpeed,#vspace,width',\n 'menu^[HTMLInputElement]]!compact',\n 'meta^[HTMLInputElement]]content,httpEquiv,name,scheme',\n 'meter^[HTMLInputElement]]#high,#low,#max,#min,#optimum,#value',\n 'ins,del^[HTMLInputElement]]cite,dateTime',\n 'ol^[HTMLInputElement]]!compact,!reversed,#start,type',\n 'object^[HTMLInputElement]]align,archive,border,code,codeBase,codeType,data,!declare,height,#hspace,name,standby,type,useMap,#vspace,width',\n 'optgroup^[HTMLInputElement]]!disabled,label',\n 'option^[HTMLInputElement]]!defaultSelected,!disabled,label,!selected,text,value',\n 'output^[HTMLInputElement]]defaultValue,% htmlFor,name,value',\n 'p^[HTMLInputElement]]align',\n 'param^[HTMLInputElement]]name,type,value,valueType',\n 'picture^[HTMLInputElement]]',\n 'pre^[HTMLInputElement]]#width',\n 'progress^[HTMLInputElement]]#max,#value',\n 'q,blockquote,cite^[HTMLInputElement]]',\n 'script^[HTMLInputElement]]!async,charset,% crossOrigin,!defer,event,htmlFor,integrity,src,text,type',\n 'select^[HTMLInputElement]]!autofocus,!disabled,#length,!multiple,name,!required,#selectedIndex,#size,value',\n 'shadow^[HTMLInputElement]]',\n 'slot^[HTMLInputElement]]name',\n 'source^[HTMLInputElement]]media,sizes,src,srcset,type',\n 'span^[HTMLInputElement]]',\n 'style^[HTMLInputElement]]!disabled,media,type',\n 'caption^[HTMLInputElement]]align',\n 'th,td^[HTMLInputElement]]abbr,align,axis,bgColor,ch,chOff,#colSpan,headers,height,!noWrap,#rowSpan,scope,vAlign,width',\n 'col,colgroup^[HTMLInputElement]]align,ch,chOff,#span,vAlign,width',\n 'table^[HTMLInputElement]]align,bgColor,border,% caption,cellPadding,cellSpacing,frame,rules,summary,% tFoot,% tHead,width',\n 'tr^[HTMLInputElement]]align,bgColor,ch,chOff,vAlign',\n 'tfoot,thead,tbody^[HTMLInputElement]]align,ch,chOff,vAlign',\n 'template^[HTMLInputElement]]',\n 'textarea^[HTMLInputElement]]autocapitalize,!autofocus,#cols,defaultValue,dirName,!disabled,#maxLength,#minLength,name,placeholder,!readOnly,!required,#rows,selectionDirection,#selectionEnd,#selectionStart,value,wrap',\n 'title^[HTMLInputElement]]text',\n 'track^[HTMLInputElement]]!default,kind,label,src,srclang',\n 'ul^[HTMLInputElement]]!compact,type',\n 'unknown^[HTMLInputElement]]',\n 'video^media#height,poster,#width',\n ':svg:a^:svg:graphics',\n ':svg:animate^:svg:animation',\n ':svg:animateMotion^:svg:animation',\n ':svg:animateTransform^:svg:animation',\n ':svg:circle^:svg:geometry',\n ':svg:clipPath^:svg:graphics',\n ':svg:defs^:svg:graphics',\n ':svg:desc^:svg:',\n ':svg:discard^:svg:',\n ':svg:ellipse^:svg:geometry',\n ':svg:feBlend^:svg:',\n ':svg:feColorMatrix^:svg:',\n ':svg:feComponentTransfer^:svg:',\n ':svg:feComposite^:svg:',\n ':svg:feConvolveMatrix^:svg:',\n ':svg:feDiffuseLighting^:svg:',\n ':svg:feDisplacementMap^:svg:',\n ':svg:feDistantLight^:svg:',\n ':svg:feDropShadow^:svg:',\n ':svg:feFlood^:svg:',\n ':svg:feFuncA^:svg:componentTransferFunction',\n ':svg:feFuncB^:svg:componentTransferFunction',\n ':svg:feFuncG^:svg:componentTransferFunction',\n ':svg:feFuncR^:svg:componentTransferFunction',\n ':svg:feGaussianBlur^:svg:',\n ':svg:feImage^:svg:',\n ':svg:feMerge^:svg:',\n ':svg:feMergeNode^:svg:',\n ':svg:feMorphology^:svg:',\n ':svg:feOffset^:svg:',\n ':svg:fePointLight^:svg:',\n ':svg:feSpecularLighting^:svg:',\n ':svg:feSpotLight^:svg:',\n ':svg:feTile^:svg:',\n ':svg:feTurbulence^:svg:',\n ':svg:filter^:svg:',\n ':svg:foreignObject^:svg:graphics',\n ':svg:g^:svg:graphics',\n ':svg:image^:svg:graphics',\n ':svg:line^:svg:geometry',\n ':svg:linearGradient^:svg:gradient',\n ':svg:mpath^:svg:',\n ':svg:marker^:svg:',\n ':svg:mask^:svg:',\n ':svg:metadata^:svg:',\n ':svg:path^:svg:geometry',\n ':svg:pattern^:svg:',\n ':svg:polygon^:svg:geometry',\n ':svg:polyline^:svg:geometry',\n ':svg:radialGradient^:svg:gradient',\n ':svg:rect^:svg:geometry',\n

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'svg:svg^:svg:graphics|#currentScale,#zoomAndPan',\n 'svg:script^:svg:type',\n 'svg:set^:svg:animation',\n
'svg:stop^:svg:',\n 'svg:style^:svg:|disabled,media,title,type',\n 'svg:switch^:svg:graphics',\n
'svg:symbol^:svg:',\n 'svg:tspan^:svg:textPositioning',\n 'svg:text^:svg:textPositioning',\n
'svg:textPath^:svg:textContent',\n 'svg:title^:svg:',\n 'svg:use^:svg:graphics',\n
'svg:view^:svg:|#zoomAndPan',\n 'data^[HTMLInputElement]|value',\n
'keygen^[HTMLInputElement]!autofocus,challenge,!disabled,form,keytype,name',\n
'menuitem^[HTMLInputElement]|type,label,icon,!disabled,!checked,radiogroup,!default',\n
'summary^[HTMLInputElement]',\n 'time^[HTMLInputElement]|dateTime',\n 'svg:cursor^:svg:',\n);\nvar
_ATTR_TO_PROP = {\n 'class': 'className',\n 'for': 'htmlFor',\n 'formaction': 'formAction',\n 'innerHTML':
'innerHTML',\n 'readonly': 'readOnly',\n 'tabindex': 'tabIndex',\n};\nvar DomElementSchemaRegistry = /**
@class */ (function (_super) {\n __extends(DomElementSchemaRegistry, _super);\n function
DomElementSchemaRegistry() {\n var _this = _super.call(this) || this;\n _this._schema = {};\n SCHEMA.forEach(function (encodedType) {\n var /** @type {?} */ type = {};\n var _a =
encodedType.split('|', strType = _a[0], strProperties = _a[1];\n var /** @type {?} */ properties =
strProperties.split(';')\n var _b = strType.split('^'), typeNames = _b[0], superName = _b[1];\n typeNames.split(',').forEach(function (tag) { return _this._schema[tag.toLowerCase()] = type; });\n var /**
@type {?} */ superType = superName && _this._schema[superName.toLowerCase()];\n if (superType) {\n
 Object.keys(superType).forEach(function (prop) { type[prop] = superType[prop]; });\n }\n
properties.forEach(function (property) {\n if (property.length > 0) {\n switch (property[0]) {\n
 case '*':\n // We don't yet support events.\n // If ever allowing to bind
to events, GO THROUGH A SECURITY REVIEW, allowing events\n // will\n //
almost certainly introduce bad XSS vulnerabilities.\n // type[property.substring(1)] = EVENT;\n
 break;\n case '!':\n type[property.substring(1)] = BOOLEAN;\n
 break;\n case '#':\n type[property.substring(1)] = NUMBER;\n
 break;\n case '%':\n type[property.substring(1)] = OBJECT;\n
 break;\n default:\n type[property] = STRING;\n }\n }\n
});\n });\n return _this;\n }\n /**\n * @param {?} tagName\n * @param {?} propName\n *
@param {?} schemaMetas\n * @return {?} */\n *\n DomElementSchemaRegistry.prototype.hasProperty =
/**\n * @param {?} tagName\n * @param {?} propName\n * @param {?} schemaMetas\n * @return
{?} */\n *\n *\n function (tagName, propName, schemaMetas) {\n if (schemaMetas.some(function (schema) {\n
return schema.name === NO_ERRORS_SCHEMA.name; }))) {\n return true;\n }\n if
(tagName.indexOf('-') > -1) {\n if (isNgContainer(tagName) || isNgContent(tagName)) {\n return
false;\n }\n if (schemaMetas.some(function (schema) { return schema.name ===
CUSTOM_ELEMENTS_SCHEMA.name; }))) {\n // Can't tell now as we don't know which properties a
custom element will get\n // once it is instantiated\n return true;\n }\n }\n var /**
@type {?} */ elementProperties = this._schema[tagName.toLowerCase()] || this._schema['unknown'];\n return
!!elementProperties[propName];\n });\n /**\n * @param {?} tagName\n * @param {?} schemaMetas\n *
@return {?} */\n *\n *\n DomElementSchemaRegistry.prototype.hasElement = /**\n * @param {?} tagName\n
* @param {?} schemaMetas\n * @return {?} */\n *\n *\n function (tagName, schemaMetas) {\n if
(schemaMetas.some(function (schema) { return schema.name === NO_ERRORS_SCHEMA.name; }))) {\n return
true;\n }\n if (tagName.indexOf('-') > -1) {\n if (isNgContainer(tagName) ||
isNgContent(tagName)) {\n return true;\n }\n if (schemaMetas.some(function (schema) {\n
return schema.name === CUSTOM_ELEMENTS_SCHEMA.name; }))) {\n // Allow any custom
elements\n return true;\n }\n }\n return !!this._schema[tagName.toLowerCase()];\n });\n
 /**\n * securityContext returns the security context for the given property on the given DOM tag.\n *\n *
Tag and property name are statically known and cannot change at runtime, i.e. it is not\n * possible to bind a
value into a changing attribute or tag name.\n *\n * The filtering is white list based. All attributes in the schema
above are assumed to have the\n * 'NONE' security context, i.e. that they are safe inert string values. Only specific

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well known\n * attack vectors are assigned their appropriate context.\n */\n /**\n * securityContext returns
the security context for the given property on the given DOM tag.\n *\n * Tag and property name are statically
known and cannot change at runtime, i.e. it is not\n * possible to bind a value into a changing attribute or tag
name.\n *\n * The filtering is white list based. All attributes in the schema above are assumed to have the\n *
'NONE' security context, i.e. that they are safe inert string values. Only specific well known\n * attack vectors
are assigned their appropriate context.\n * @param {?} tagName\n * @param {?} propName\n * @param {?}
isAttribute\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.securityContext = /**\n *
securityContext returns the security context for the given property on the given DOM tag.\n *\n * Tag and
property name are statically known and cannot change at runtime, i.e. it is not\n * possible to bind a value into a
changing attribute or tag name.\n *\n * The filtering is white list based. All attributes in the schema above are
assumed to have the\n * 'NONE' security context, i.e. that they are safe inert string values. Only specific well
known\n * attack vectors are assigned their appropriate context.\n * @param {?} tagName\n * @param {?}
propName\n * @param {?} isAttribute\n * @return {?}\n */\n function (tagName, propName, isAttribute)
{\n if (isAttribute) {\n // NB: For security purposes, use the mapped property name, not the attribute
name.\n propName = this.getMappedPropName(propName);\n }\n // Make sure comparisons are
case insensitive, so that case differences between attribute and\n // property names do not have a security
impact.\n tagName = tagName.toLowerCase();\n propName = propName.toLowerCase();\n var /**
@type {?} */ ctx = SECURITY_SCHEMA[tagName + '|' + propName];\n if (ctx) {\n return ctx;\n }\n ctx = SECURITY_SCHEMA['*' + propName];\n return ctx ? ctx : SecurityContext.NONE;\n };\n /**\n * @param {?} propName\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.getMappedPropName = /**\n * @param {?} propName\n * @return
{?}\n */\n function (propName) { return _ATTR_TO_PROP[propName] || propName; };\n /**\n * @return
{?}\n */\n DomElementSchemaRegistry.prototype.getDefaultComponentElementName = /**\n * @return
{?}\n */\n function () { return 'ng-component'; };\n /**\n * @param {?} name\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.validateProperty = /**\n * @param {?} name\n * @return {?}\n */\n function (name) {\n if (name.toLowerCase().startsWith('on')) {\n var /** @type {?} */ msg = "Binding
to event property '\" + name + \"' is disallowed for security reasons, \" +\n ("please use (" + name.slice(2)
+ ")=...") +\n ("\\nIf \" + name + \"' is a directive input, make sure the directive is imported by the") +\n "\" current module.");\n return { error: true, msg: msg }; }\n else {\n return { error:
false }; }\n };\n /**\n * @param {?} name\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.validateAttribute = /**\n * @param {?} name\n * @return {?}\n */\n function (name) {\n if (name.toLowerCase().startsWith('on')) {\n var /** @type {?} */ msg =
"Binding to event attribute '\" + name + \"' is disallowed for security reasons, \" +\n ("please use (" +
name.slice(2) + ")=...");\n return { error: true, msg: msg }; }\n else {\n return { error: false
}; }\n };\n /**\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.allKnownElementNames = /**\n * @return {?}\n */\n function () {\n return Object.keys(this._schema); };\n /**\n * @param {?} propName\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.normalizeAnimationStyleProperty = /**\n * @param {?} propName\n * @return {?}\n */\n function (propName) {\n return dashCaseToCamelCase(propName);\n };\n /**\n * @param {?} camelCaseProp\n * @param {?} userProvidedProp\n * @param {?} val\n * @return {?}\n */\n DomElementSchemaRegistry.prototype.normalizeAnimationStyleValue = /**\n * @param {?}
camelCaseProp\n * @param {?} userProvidedProp\n * @param {?} val\n * @return {?}\n */\n function
(camelCaseProp, userProvidedProp, val) {\n var /** @type {?} */ unit = ";\n var /** @type {?} */ strVal =
val.toString().trim();\n var /** @type {?} */ errorMsg = /** @type {?} */ ((null));\n if
(_isPixelDimensionStyle(camelCaseProp) && val !== 0 && val !== '0') {\n if (typeof val === 'number') {\n
 unit = 'px';\n }\n else {\n var /** @type {?} */ valAndSuffixMatch = val.match(/^[+-]
]?[\\d\\.]+([a-z]*)$/);\n if (valAndSuffixMatch && valAndSuffixMatch[1].length === 0) {\n
 errorMsg = "Please provide a CSS unit value for \" + userProvidedProp + \":\" + val;\n }\n }\n }\n }

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}\n return { error: errorMsg, value: strVal + unit };\n };\n return
DomElementSchemaRegistry;\n}(ElementSchemaRegistry));\n\n/**\n * @param {?} prop\n * @return {?}\n */\nfunction _isPixelDimensionStyle(prop) {\n switch (prop) {\n case 'width':\n case 'height':\n case 'minWidth':\n case 'minHeight':\n case 'maxWidth':\n case 'maxHeight':\n case 'left':\n case 'top':\n case 'bottom':\n case 'right':\n case 'fontSize':\n case 'outlineWidth':\n case 'outlineOffset':\n case 'paddingTop':\n case 'paddingLeft':\n case 'paddingBottom':\n case 'paddingRight':\n case 'marginTop':\n case 'marginLeft':\n case 'marginBottom':\n case 'marginRight':\n case 'borderRadius':\n case 'borderWidth':\n case 'borderTopWidth':\n case 'borderLeftWidth':\n case 'borderRightWidth':\n case 'borderBottomWidth':\n case 'textIndent':\n return true;\n default:\n return false;\n }\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at\n * https://angular.io/license\n */\n\n/**\n * This file is a port of shadowCSS from webcomponents.js to TypeScript.\n * Please make sure to keep to edits in sync with the source file.\n * Source:\n * https://github.com/webcomponents/webcomponentsjs/blob/4efecd7e0e/src/ShadowCSS/ShadowCSS.js\n * The original file level comment is reproduced below\n */\n\n/**\n * This is a limited shim for ShadowDOM css styling.\n * https://dvc.w3.org/hg/webcomponents/raw-file/tip/spec/shadow/index.html#styles\n * The intention here is to support only the styling features which can be relatively simply implemented. The goal is to allow users to avoid the most obvious pitfalls and do so without compromising performance significantly. For ShadowDOM styling that's not covered here, a set of best practices can be provided that should allow users to accomplish more complex styling.\n * The following is a list of specific ShadowDOM styling features and a brief discussion of the approach used to shim.\n * Shimmed features:\n * :host, :host-context: ShadowDOM allows styling of the shadowRoot's host element using the :host rule. To shim this feature, the :host styles are reformatted and prefixed with a given scope name and promoted to a document level stylesheet. For example, given a scope name of .foo, a rule like this:\n * :host {\n * background: red;\n * }\n * becomes:\n * .foo {\n * background: red;\n * }\n * encapsulation: Styles defined within ShadowDOM, apply only to dom inside the ShadowDOM. Polymer uses one of two techniques to implement this feature. By default, rules are prefixed with the host element tag name as a descendant selector. This ensures styling does not leak out of the 'top' of the element's ShadowDOM. For example,\n * div {\n * font-weight: bold;\n * }\n * becomes:\n * x-foo div {\n * font-weight: bold;\n * }\n * Alternatively, if WebComponents.ShadowCSS.strictStyling is set to true then selectors are scoped by adding an attribute selector suffix to each simple selector that contains the host element tag name. Each element in the element's ShadowDOM template is also given the scope attribute. Thus, these rules match only elements that have the scope attribute. For example, given a scope name of x-foo, a rule like this:\n * div {\n * font-weight: bold;\n * }\n * becomes:\n * div[x-foo] {\n * font-weight: bold;\n * }\n * Note that elements that are dynamically added to a scope must have the scope selector added to them manually.\n * upper/lower bound encapsulation: Styles which are defined outside a shadowRoot should not cross the ShadowDOM boundary and should not apply inside a shadowRoot. This styling behavior is not emulated. Some possible ways to do this that were rejected due to complexity and/or performance concerns include: (1) reset every possible property for every possible selector for a given scope name; (2) re-implement css in javascript. As an alternative, users should make sure to use selectors specific to the scope in which they are working.\n * ::distributed: This behavior is not emulated. It's often not necessary to style the contents of a specific insertion point and instead, descendants of the host element can be styled selectively. Users can also create an extra node around an insertion point and style that node's contents via descendent selectors. For example, with a shadowRoot like this:\n * <style>\n * ::content(div) {\n * background: red;\n * }\n * </style>\n * <content></content>\n * could become:\n * <style>\n * /*@polyfill .content-container div *\n * ::content(div) {\n * background: red;\n * }\n * </style>\n * <div class="content-container">\n * <content></content>\n * </div>\n * Note the use of @polyfill in the comment above a ShadowDOM specific style declaration. This is a directive to the styling shim to use the selector in comments in lieu of the next

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selector when running under polyfill.\n*/\nvar ShadowCss = /** @class */ (function () {\n function ShadowCss()\n {\n this.strictStyling = true;\n }\n /**\n * Shim some cssText with the given selector. Returns cssText that\n * can\n * be included in the document via WebComponents.ShadowCSS.addCssToDocument(css).\n * \n * When strictStyling is true:\n * - selector is the attribute added to all elements inside the host,\n * - hostSelector is the attribute added to the host itself.\n * \n */\n /**\n * @param {?} cssText\n * @param {?} selector\n * @param {?=} hostSelector\n * @return {?}\n */\n ShadowCss.prototype.shimCssText = /**\n * @param\n * {?} cssText\n * @param {?} selector\n * @param {?=} hostSelector\n * @return {?}\n */\n function\n (cssText, selector, hostSelector) {\n if (hostSelector === void 0) { hostSelector = ""; }\n var /** @type {?} */\n sourceMappingUrl = extractSourceMappingUrl(cssText);\n cssText = stripComments(cssText);\n cssText = this._insertDirectives(cssText);\n return this._scopeCssText(cssText, selector, hostSelector) +\n sourceMappingUrl;\n };\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._insertDirectives = /**\n * @param {?} cssText\n * @return {?}\n */\n function\n (cssText) {\n cssText = this._insertPolyfillDirectivesInCssText(cssText);\n return\n this._insertPolyfillRulesInCssText(cssText);\n };\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._insertPolyfillDirectivesInCssText = /**\n * @param {?} cssText\n * @return {?}\n */\n function (cssText) {\n // Difference with webcomponents.js: does not handle comments\n return\n cssText.replace(_cssContentNextSelectorRe, function () {\n var m = [];\n for (var _i = 0; _i <\n arguments.length; _i++) {\n m[_i] = arguments[_i];\n }\n return m[2] + '{';\n });\n };\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._insertPolyfillRulesInCssText =\n /**\n * @param {?} cssText\n * @return {?}\n */\n function (cssText) {\n // Difference with\n webcomponents.js: does not handle comments\n return cssText.replace(_cssContentRuleRe, function () {\n var m = [];\n for (var _i = 0; _i < arguments.length; _i++) {\n m[_i] = arguments[_i];\n }\n var /** @type {?} */ rule = m[0].replace(m[1], "").replace(m[2], "");\n return m[4] + rule;\n });\n };\n /**\n * @param {?} cssText\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n ShadowCss.prototype._scopeCssText = /**\n * @param {?} cssText\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n function (cssText, scopeSelector,\n hostSelector) {\n var /** @type {?} */ unscopedRules = this._extractUnscopedRulesFromCssText(cssText);\n // replace :host and :host-context -shadowcsshost and -shadowcsshost respectively\n cssText =\n this._insertPolyfillHostInCssText(cssText);\n cssText = this._convertColonHost(cssText);\n cssText =\n this._convertColonHostContext(cssText);\n cssText = this._convertShadowDOMSelectors(cssText);\n if\n (scopeSelector) {\n cssText = this._scopeSelectors(cssText, scopeSelector, hostSelector);\n }\n cssText = cssText + '\\n' + unscopedRules;\n return cssText.trim();\n };\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._extractUnscopedRulesFromCssText = /**\n * @param {?} cssText\n * @return {?}\n */\n function (cssText) {\n // Difference with webcomponents.js: does not\n handle comments\n var /** @type {?} */ r = ";\n var /** @type {?} */ m;\n _cssContentUnscopedRuleRe.lastIndex = 0;\n while ((m = _cssContentUnscopedRuleRe.exec(cssText)) !==\n null) {\n var /** @type {?} */ rule = m[0].replace(m[2], "").replace(m[1], m[4]);\n r += rule + '\\n\\n';\n }\n return r;\n };\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._convertColonHost = /**\n * @param {?} cssText\n * @return {?}\n */\n function\n (cssText) {\n return this._convertColonRule(cssText, _cssColonHostRe, this._colonHostPartReplacer);\n };\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._convertColonHostContext =\n /**\n * @param {?} cssText\n * @return {?}\n */\n function (cssText) {\n return\n this._convertColonRule(cssText, _cssColonHostContextRe, this._colonHostContextPartReplacer);\n };\n /**\n * @param {?} cssText\n * @param {?} regExp\n * @param {?} partReplacer\n * @return {?}\n */\n ShadowCss.prototype._convertColonRule = /**\n * @param {?} cssText\n * @param {?} regExp\n * @param {?} partReplacer\n * @return {?}\n */\n function (cssText, regExp, partReplacer) {\n // m[1] =\n :host(-context), m[2] = contents of (), m[3] rest of rule\n return cssText.replace(regExp, function () {\n var m = [];\n for (var _i = 0; _i < arguments.length; _i++) {\n m[_i] = arguments[_i];\n }\n });\n };\n}

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if (m[2]) {\n var /** @type {?} */ parts = m[2].split(',');\n var /** @type {?} */ r = [];\n for (var /** @type {?} */ i = 0; i < parts.length; i++) {\n var /** @type {?} */ p = parts[i].trim();\n if (!p)\n break;\n r.push(partReplacer(_polyfillHostNoCombinator, p, m[3]));\n }\n return r.join(',');\n }\n else {\n return _polyfillHostNoCombinator + m[3];\n }\n });\n });\n /**\n * @param {?} host\n * @param {?} part\n * @param {?} suffix\n * @return {?}\n */\n ShadowCss.prototype._colonHostContextPartReplacer = /**\n * @param {?} host\n * @param {?} part\n * @param {?} suffix\n * @return {?}\n */\n function (host, part, suffix) {\n if (part.indexOf(_polyfillHost) > -1) {\n return this._colonHostPartReplacer(host, part, suffix);\n }\n else {\n return host + part + suffix + ',' + part + ' ' + host + suffix;\n }\n });\n /**\n * @param {?} host\n * @param {?} part\n * @param {?} suffix\n * @return {?}\n */\n ShadowCss.prototype._colonHostPartReplacer = /**\n * @param {?} host\n * @param {?} part\n * @param {?} suffix\n * @return {?}\n */\n function (host, part, suffix) {\n return host + part.replace(_polyfillHost, '') + suffix;\n });\n /**\n * @param {?} cssText\n * @return {?}\n */\n ShadowCss.prototype._convertShadowDOMSelectors = /**\n * @param {?} cssText\n * @return {?}\n */\n function (cssText) {\n return _shadowDOMSelectorsRe.reduce(function (result, pattern) {\n return result.replace(pattern, ' '); }, cssText);\n });\n /**\n * @param {?} cssText\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n ShadowCss.prototype._scopeSelectors = /**\n * @param {?} cssText\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n function (cssText, scopeSelector, hostSelector) {\n var _this = this;\n return processRules(cssText, function (rule) {\n var /** @type {?} */ selector = rule.selector;\n var /** @type {?} */ content = rule.content;\n if (rule.selector[0] != '@') {\n selector =\n _this._scopeSelector(rule.selector, scopeSelector, hostSelector, _this.strictStyling);\n }\n else if (rule.selector.startsWith('@media') || rule.selector.startsWith('@supports') ||\n rule.selector.startsWith('@page') || rule.selector.startsWith('@document')) {\n content =\n _this._scopeSelectors(rule.content, scopeSelector, hostSelector);\n }\n return new CssRule(selector, content);\n });\n });\n /**\n * @param {?} selector\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n ShadowCss.prototype._scopeSelector = /**\n * @param {?} selector\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @param {?} strict\n * @return {?}\n */\n function (selector, scopeSelector, hostSelector, strict) {\n var _this = this;\n return selector.split(',')\n .map(function (part) {\n return part.trim().split(_shadowDeepSelectors);\n })\n .map(function (deepParts) {\n var shallowPart = deepParts[0], otherParts = deepParts.slice(1);\n var /** @type {?} */ applyScope = function (shallowPart) {\n if (_this._selectorNeedsScoping(shallowPart, scopeSelector)) {\n return strict ?\n _this._applyStrictSelectorScope(shallowPart, scopeSelector, hostSelector) :\n _this._applySelectorScope(shallowPart, scopeSelector, hostSelector);\n }\n else {\n return shallowPart;\n }\n };\n return [applyScope(shallowPart)].concat(otherParts).join(' ');\n })\n .join(', ');\n });\n /**\n * @param {?} selector\n * @param {?} scopeSelector\n * @return {?}\n */\n ShadowCss.prototype._selectorNeedsScoping = /**\n * @param {?} selector\n * @param {?} scopeSelector\n * @return {?}\n */\n function (selector, scopeSelector) {\n var /** @type {?} */ re =\n this._makeScopeMatcher(scopeSelector);\n return !re.test(selector);\n });\n /**\n * @param {?} scopeSelector\n * @return {?}\n */\n ShadowCss.prototype._makeScopeMatcher = /**\n * @param {?} scopeSelector\n * @return {?}\n */\n function (scopeSelector) {\n var /** @type {?} */ lre = /\[/g;\n var /** @type {?} */ rre = /\]/g;\n scopeSelector = scopeSelector.replace(lre, '\\[').replace(rre, '\\]');\n return new RegExp('^(' + scopeSelector + ')') + _selectorReSuffix, 'm');\n });\n /**\n * @param {?} selector\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n ShadowCss.prototype._applySelectorScope = /**\n * @param {?} selector\n * @param {?} scopeSelector\n * @param {?} hostSelector\n * @return {?}\n */\n function (selector, scopeSelector, hostSelector) {\n // Difference from webcomponents.js: scopeSelector could not be an array\n return

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this._applySimpleSelectorScope(selector, scopeSelector, hostSelector);\n
};\n
/**\n
 * @param {?} selector\n
 * @param {?} scopeSelector\n
 * @param {?} hostSelector\n
 * @return {?}\n
 */\n
ShadowCss.prototype._applySimpleSelectorScope = /**\n
 * @param {?} selector\n
 * @param {?} scopeSelector\n
 * @param {?} hostSelector\n
 * @return {?}\n
 */\n
function (selector, scopeSelector, hostSelector) {\n
 // In Android browser, the lastIndex is not reset when the regex is used in String.replace()\n
 _polyfillHostRe.lastIndex = 0;\n
 if (_polyfillHostRe.test(selector)) {\n
 var /** @type {?} */\n
 replaceBy_1 = this.strictStyling ? "[" + hostSelector + "]" : scopeSelector;\n
 return selector\n
 .replace(_polyfillHostNoCombinatorRe, function (hnc, selector) {\n
 return selector.replace(/([^\:]*)/g),\n
 function (_, before, colon, after) {\n
 return before + replaceBy_1 + colon + after;\n
 });\n
 })\n
 .replace(_polyfillHostRe, replaceBy_1 + ');\n
 }\n
 return scopeSelector + ' ' + selector;\n
};\n
/**\n
 * @param {?} selector\n
 * @param {?} scopeSelector\n
 * @param {?} hostSelector\n
 * @return {?}\n
 */\n
ShadowCss.prototype._applyStrictSelectorScope = /**\n
 * @param {?} selector\n
 * @param {?} scopeSelector\n
 * @param {?} hostSelector\n
 * @return {?}\n
 */\n
function (selector, scopeSelector, hostSelector) {\n
 var _this = this;\n
 var /** @type {?} */ isRe = /\[is=([\^\]]*)\]/g;\n
 scopeSelector = scopeSelector.replace(isRe, function (_) {\n
 var parts = [];\n
 for (var _i = 1; _i < arguments.length; _i++) {\n
 parts[_i - 1] = arguments[_i];\n
 }\n
 return parts[0];\n
 });\n
 var /** @type {?} */ attrName = '[' + scopeSelector + ''];\n
 var /** @type {?} */ _scopeSelectorPart = function (p) {\n
 var /** @type {?} */ scopedP = p.trim();\n
 if (!scopedP) {\n
 return ";\n
 }\n
 if (p.indexOf(_polyfillHostNoCombinator) > -1) {\n
 scopedP = _this._applySimpleSelectorScope(p, scopeSelector, hostSelector);\n
 }\n
 else {\n
 // remove :host since it should be unnecessary\n
 var /** @type {?} */ t = p.replace(_polyfillHostRe, ");\n
 if (t.length > 0) {\n
 var /** @type {?} */ matches = t.match(/([^\:]*)/g);\n
 if (matches) {\n
 scopedP = matches[1] + attrName + matches[2] + matches[3];\n
 }\n
 }\n
 return scopedP;\n
 }\n
 var /** @type {?} */ safeContent = new SafeSelector(selector);\n
 selector = safeContent.content();\n
 var /** @type {?} */ scopedSelector = ";\n
 var /** @type {?} */ startIndex = 0;\n
 var /** @type {?} */ res;\n
 var /** @type {?} */ sep = /(|>|+|~|(?!=))\s*/g;\n
 // If a selector appears before :host it should not be shimmed as it\n
 // matches on ancestor elements and not on elements in the host's shadow\n
 // `:host-context(div)` is transformed to\n
 // `-shadowcsshost-no-combinatordiv, div -shadowcsshost-no-combinator`\n
 // the `div` is not part of the component in the 2nd selectors and should not be scoped.\n
 // Historically `component-tag:host` was matching the component so we also want to preserve\n
 // this behavior to avoid breaking legacy apps (it should not match).\n
 // The behavior should be:\n
 // - `tag:host` -> `tag[h]` (this is to avoid breaking legacy apps, should not match anything)\n
 // - `tag :host` -> `tag [h]` (`tag` is not scoped because it's considered part of a\n
 // `:host-context(tag)`)\n
 var /** @type {?} */ hasHost = selector.indexOf(_polyfillHostNoCombinator) > -1;\n
 // Only scope parts after the first `-shadowcsshost-no-combinator` when it is present\n
 var /** @type {?} */ shouldScope = !hasHost;\n
 while ((res = sep.exec(selector)) !== null) {\n
 var /** @type {?} */ separator = res[1];\n
 var /** @type {?} */ part_1 = selector.slice(startIndex, res.index).trim();\n
 shouldScope = shouldScope || part_1.indexOf(_polyfillHostNoCombinator) > -1;\n
 var /** @type {?} */ scopedPart = shouldScope ? _scopeSelectorPart(part_1) : part_1;\n
 scopedSelector += scopedPart + " " + separator + " ";\n
 startIndex = sep.lastIndex;\n
 }\n
 var /** @type {?} */ part = selector.substring(startIndex);\n
 shouldScope = shouldScope || part.indexOf(_polyfillHostNoCombinator) > -1;\n
 scopedSelector += shouldScope ? _scopeSelectorPart(part) : part;\n
 // replace the placeholders with their original values\n
 return safeContent.restore(scopedSelector);\n
 }; \n
 /**\n
 * @param {?} selector\n
 * @return {?}\n
 */\n
 ShadowCss.prototype._insertPolyfillHostInCssText = /**\n
 * @param {?} selector\n
 * @return {?}\n
 */\n
 function (selector) {\n
 return selector.replace(_colonHostContextRe, _polyfillHostContext)\n
 .replace(_colonHostRe, _polyfillHost);\n
 }; \n
 return ShadowCss;\n
};\n
var SafeSelector = /** @class */ (function () {\n
 function SafeSelector(selector) {\n
 var _this = this;\n
 this.placeholders = [];\n
 this.index = 0;\n
 // Replaces attribute selectors with placeholders.\n
 // The WS in [attr="va lue"] would

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otherwise be interpreted as a selector separator.\n selector = selector.replace(/(\\[[^\\]]*\\])/g, function (_, keep)
{\n var /** @type {?} */ replaceBy = \"__ph-\" + _this.index + \"__\";\n
_this.placeholders.push(keep);\n _this.index++; \n return replaceBy;\n });\n // Replaces the
expression in `nth-child(2n + 1)` with a placeholder.\n // WS and \"+\" would otherwise be interpreted as
selector separators.\n this._content = selector.replace(/(:nth-[-\\w]+)(\\([\\^]+\\))/g, function (_, pseudo, exp) {\n
var /** @type {?} */ replaceBy = \"__ph-\" + _this.index + \"__\";\n _this.placeholders.push(exp);\n
_this.index++; \n return pseudo + replaceBy;\n });\n }\n /**\n * @param {?} content\n *
@return {?} \n */\n SafeSelector.prototype.restore = /**\n * @param {?} content\n * @return {?} \n */\n function (content) {\n var _this = this;\n return content.replace(/__ph-(\\d+)__g, function (ph, index) {
return _this.placeholders[+index]; });\n }; \n /**\n * @return {?} \n */\n SafeSelector.prototype.content =
/**\n * @return {?} \n */\n function () { return this._content; }; \n return SafeSelector;\n });\n nvar
_cssContentNextSelectorRe = /polyfill-next-selector[\\^]*content:[\\s]*?(\\\"|\\')(.*)\\1[;\\s]*{\\^}[\\^]*}/gim;\n nvar
_cssContentRuleRe = /(polyfill-rule)[\\^]*content:[\\s]*?(\\\"|\\')(.*)\\3[;\\s]*[\\^]*}/gim;\n nvar
_cssContentUnscopedRuleRe = /(polyfill-unscoped-rule)[\\^]*content:[\\s]*?(\\\"|\\')(.*)\\3[;\\s]*[\\^]*}/gim;\n nvar
_polyfillHost = '-shadowcsshost';\n // note: :host-context pre-processed to -shadowcsshostcontext.\n nvar
_polyfillHostContext = '-shadowcsscontext';\n nvar _parenSuffix = '(?:\\\\\\\\(\\'+n '(?:\\\\\\\\([\\^]\\\\\\\\|\\^)(\\'+n
')\\\\\\\\)?(\\^,\\{\\})?';\n nvar _cssColonHostRe = new RegExp('^ + _polyfillHost + _parenSuffix, 'gim');\n nvar
_cssColonHostContextRe = new RegExp('^ + _polyfillHostContext + _parenSuffix, 'gim');\n nvar
_polyfillHostNoCombinator = _polyfillHost + '-no-combinator';\n nvar _polyfillHostNoCombinatorRe = /-
shadowcsshost-no-combinator[\\^\\s]*;/;\n nvar _shadowDOMSelectorsRe = [\\n /::shadow/g,\n /::content/g,\n
\\^\\^shadow-deep\\^\\^/g,\n \\^\\^shadow\\^\\^/g,\n];\n // The deep combinator is deprecated in the CSS spec\n // Support for
`>>>`, `deep`, `:ng-deep` is then also deprecated and will be removed in the future.\n // see
https://github.com/angular/angular/pull/17677\n nvar _shadowDeepSelectors = /(?:>>>)|(?:\\^\\^deep\\^\\^)|(?::ng-
deep)/g;\n nvar _selectorReSuffix = '(\\[>\\\\\\\\s~+\\[\\[.,:\\{\\}\\}\\s\\\\\\\\S\\]*?\\$)';\n nvar _polyfillHostRe = /-
shadowcsshost/gim;\n nvar _colonHostRe = /:host/gim;\n nvar _colonHostContextRe = /:host-context/gim;\n nvar
_commentRe = \\^\\\\\\\\\\s*\\[\\s\\S\\]*?\\s*\\\\\\\\/g;\n /**\n * @param {?} input\n * @return {?} \n */\n function
stripComments(input) {\n return input.replace(_commentRe, \"\");\n }\n // all comments except inline source
mapping\n nvar _sourceMappingUrlRe = \\^\\\\\\\\\\s*\\s*#\\s*sourceMappingURL=\\[\\s\\S\\]+?\\s*\\\\\\\\/; \n /**\n * @param {?}
input\n * @return {?} \n */\n function extractSourceMappingUrl(input) {\n var /** @type {?} */ matcher =
input.match(_sourceMappingUrlRe);\n return matcher ? matcher[0] : \"\";\n }\n nvar _ruleRe =
/(\\s*)(\\^;\\[\\s\\]]+?)(\\s*)(?:%BLOCK%?\\s*?)(?:\\s*?);/g;\n nvar _curlyRe = /({})/g;\n nvar OPEN_CURLY =
'{';\n nvar CLOSE_CURLY = '}';\n nvar BLOCK_PLACEHOLDER = '%BLOCK%';\n nvar CssRule = /** @class */
(function () {\n function CssRule(selector, content) {\n this.selector = selector;\n this.content = content;\n
}\n return CssRule;\n });\n /**\n * @param {?} input\n * @param {?} ruleCallback\n * @return {?} \n */
function processRules(input, ruleCallback) {\n var /** @type {?} */ inputWithEscapedBlocks =
escapeBlocks(input);\n var /** @type {?} */ nextBlockIndex = 0;\n return
inputWithEscapedBlocks.escapedString.replace(_ruleRe, function () {\n var m = [];\n for (var _i = 0; _i <
arguments.length; _i++) {\n m[_i] = arguments[_i];\n }\n var /** @type {?} */ selector = m[2];\n nvar
/** @type {?} */ content = \"\";\n var /** @type {?} */ suffix = m[4];\n var /** @type {?} */
contentPrefix = \"\";\n if (suffix && suffix.startsWith('^ + BLOCK_PLACEHOLDER)) {\n content =
inputWithEscapedBlocks.blocks[nextBlockIndex++];\n suffix =
suffix.substr(BLOCK_PLACEHOLDER.length + 1);\n contentPrefix = '{';\n }\n var /** @type
{?} */ rule = ruleCallback(new CssRule(selector, content));\n return \"\" + m[1] + rule.selector + m[3] +
contentPrefix + rule.content + suffix;\n });\n }\n nvar StringWithEscapedBlocks = /** @class */ (function () {\n
function StringWithEscapedBlocks(escapedString, blocks) {\n this.escapedString = escapedString;\n
this.blocks = blocks;\n }\n return StringWithEscapedBlocks;\n });\n /**\n * @param {?} input\n * @return
{?} \n */\n function escapeBlocks(input) {\n var /** @type {?} */ inputParts = input.split(_curlyRe);\n var /**
@type {?} */ resultParts = [];\n var /** @type {?} */ escapedBlocks = [];\n var /** @type {?} */ bracketCount =

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0;\n var /** @type {?} */ currentBlockParts = [];\n for (var /** @type {?} */ partIndex = 0; partIndex <
inputParts.length; partIndex++) {\n var /** @type {?} */ part = inputParts[partIndex];\n if (part ==
CLOSE_CURLY) {\n bracketCount--;\n }\n if (bracketCount > 0) {\n
currentBlockParts.push(part);\n }\n else {\n if (currentBlockParts.length > 0) {\n
escapedBlocks.push(currentBlockParts.join("));\n resultParts.push(BLOCK_PLACEHOLDER);\n
currentBlockParts = [];\n }\n resultParts.push(part);\n }\n if (part == OPEN_CURLY) {\n
bracketCount++;\n }\n }\n if (currentBlockParts.length > 0) {\n
escapedBlocks.push(currentBlockParts.join("));\n resultParts.push(BLOCK_PLACEHOLDER);\n }\n return
new StringWithEscapedBlocks(resultParts.join(""), escapedBlocks);\n}\n\n/**\n * @fileoverview added by tsickle\n
* @suppress {checkTypes} checked by tsc\n * ^/>\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
*\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n * ^/>\nvar COMPONENT_VARIABLE = '%COMP%';\nvar HOST_ATTR = \"_ngghost-\" +
COMPONENT_VARIABLE;\nvar CONTENT_ATTR = \"_ngcontent-\" + COMPONENT_VARIABLE;\nvar
StylesCompileDependency = /** @class */ (function () {\n function StylesCompileDependency(name, moduleUrl,
setValue) {\n this.name = name;\n this.moduleUrl = moduleUrl;\n this.setValue = setValue;\n }\n return StylesCompileDependency;\n})();\nvar CompiledStylesheet = /** @class */ (function () {\n function
CompiledStylesheet(outputCtx, stylesVar, dependencies, isShimmed, meta) {\n this.outputCtx = outputCtx;\n this.stylesVar = stylesVar;\n this.dependencies = dependencies;\n this.isShimmed = isShimmed;\n
this.meta = meta;\n }\n return CompiledStylesheet;\n})();\nvar StyleCompiler = /** @class */ (function () {\n
function StyleCompiler(_urlResolver) {\n this._urlResolver = _urlResolver;\n this._shadowCss = new
ShadowCss();\n }\n /**\n * @param {?} outputCtx\n * @param {?} comp\n * @return {?} ^/>\n * ^/>\n
StyleCompiler.prototype.compileComponent = /**\n * @param {?} outputCtx\n * @param {?} comp\n *
@return {?} ^/>\n * ^/>\n function (outputCtx, comp) {\n var /** @type {?} */ template = /** @type {?} */
((comp.template));\n return this._compileStyles(outputCtx, comp, new CompileStylesheetMetadata({\n
styles: template.styles,\n styleUrls: template.styleUrls,\n moduleUrl:
identifierModuleUrl(comp.type)\n }), this.needsStyleShim(comp), true);\n }; \n /**\n * @param {?}
outputCtx\n * @param {?} comp\n * @param {?} stylesheet\n * @param {?=} shim\n * @return {?} ^/>\n
 * ^/>\n StyleCompiler.prototype.compileStyles = /**\n * @param {?} outputCtx\n * @param {?} comp\n
 * @param {?} stylesheet\n * @param {?=} shim\n * @return {?} ^/>\n * ^/>\n function (outputCtx, comp,
stylesheet, shim) {\n if (shim === void 0) { shim = this.needsStyleShim(comp); }\n return
this._compileStyles(outputCtx, comp, stylesheet, shim, false);\n }; \n /**\n * @param {?} comp\n
 * @return {?} ^/>\n * ^/>\n StyleCompiler.prototype.needsStyleShim = /**\n * @param {?} comp\n
 * @return {?} ^/>\n * ^/>\n function (comp) {\n return /** @type {?} */ ((comp.template)).encapsulation ===
ViewEncapsulation.Emulated;\n }; \n /**\n * @param {?} outputCtx\n * @param {?} comp\n * @param
 {?} stylesheet\n * @param {?} shim\n * @param {?} isComponentStylesheet\n * @return {?} ^/>\n * ^/>\n
StyleCompiler.prototype._compileStyles = /**\n * @param {?} outputCtx\n * @param {?} comp\n
 * @param {?} stylesheet\n * @param {?} shim\n * @param {?} isComponentStylesheet\n * @return {?} ^/>\n
 * ^/>\n function (outputCtx, comp, stylesheet, shim, isComponentStylesheet) {\n var _this = this;\n var /**
 * @type {?} */ styleExpressions = stylesheet.styles.map(function (plainStyle) { return
literal(_this._shimIfNeeded(plainStyle, shim)); });\n var /** @type {?} */ dependencies = [];\n
 stylesheet.styleUrls.forEach(function (styleUrl) {\n var /** @type {?} */ exprIndex =
styleExpressions.length;\n // Note: This placeholder will be filled later.\n styleExpressions.push(/**
 * @type {?} */ ((null));\n dependencies.push(new StylesCompileDependency(getStylesVarName(null),
styleUrl, function (value) { return styleExpressions[exprIndex] = outputCtx.importExpr(value); }));\n });\n
 // styles variable contains plain strings and arrays of other styles arrays (recursive),\n // so we set its type to
dynamic.\n var /** @type {?} */ stylesVar = getStylesVarName(isComponentStylesheet ? comp : null);\n
 var /** @type {?} */ stmt = variable(stylesVar)\n .set(literalArr(styleExpressions, new
ArrayType(DYNAMIC_TYPE, [TypeModifier.Const])))\n .toDeclStmt(null, isComponentStylesheet ?

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[StmtModifier.Final] : {\n StmtModifier.Final, StmtModifier.Exported\n });\n
outputCtx.statements.push(stmt);\n return new CompiledStylesheet(outputCtx, stylesVar, dependencies, shim,\n stylesheet);\n }\n /**\n * @param {?} style\n * @param {?} shim\n * @return {?}\n */\n StyleCompiler.prototype._shimIfNeeded = /**\n * @param {?} style\n * @param {?} shim\n * @return\n {?}\n */\n function (style, shim) {\n return shim ? this._shadowCss.shimCssText(style, CONTENT_ATTR,\n HOST_ATTR) : style;\n };\n return StyleCompiler;\n})(\n /**\n * @param {?} component\n * @return {?}\n */\n function getStylesVarName(component) {\n var /**\n * @type {?} */ result = \"styles\";\n if (component) {\n result += \"_\" + identifierName(component.type);\n }\n return result;\n }\n /**\n * @fileoverview added by\n tsickle\n * @suppress {checkTypes} checked by tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights\n Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\n LICENSE file at https://angular.io/license\n */\n nvar PRESERVE_WS_ATTR_NAME =\n 'ngPreserveWhitespaces';\n nvar SKIP_WS_TRIM_TAGS = new Set(['pre', 'template', 'textarea', 'script', 'style']);\n // Equivalent to \\s with \\u00a0 (non-breaking space) excluded.\n // Based on https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/RegExp\n nvar WS_CHARS = '\n \\f\\n\\r\\t\\v\\u1680\\u180e\\u2000-\\u200a\\u2028\\u2029\\u202f\\u205f\\u3000\\ufe0f';\n nvar NO_WS_REGEXP =\n new RegExp(\"^[^\" + WS_CHARS + \"]*\");\n nvar WS_REPLACE_REGEXP = new RegExp(\"^[^\" + WS_CHARS +\n '\\}{2,}\\\", 'g');\n /**\n * @param {?} attrs\n * @return {?}\n */\n function hasPreserveWhitespacesAttr(attrs) {\n return attrs.some(function (attr) { return attr.name === PRESERVE_WS_ATTR_NAME; });\n }\n /**\n * Angular\n Dart introduced as a placeholder for non-removable space, see:\n * https://github.com/dart-lang/angular/blob/0bb611387d29d65b5af7f9d2515ab571fd3fbee4/_tests/test/compiler/preserve_whitespace_test.dart\n #L25-L32\n * In Angular Dart is converted to the 0xE500 PUA (Private Use Areas) unicode character\n * and later on replaced by a space. We are re-implementing the same idea here.\n * @param {?} value\n * @return\n {?}\n */\n function replaceNgsp(value) {\n // lexer is replacing the pseudo-entity with NGSP_UNICODE\n return value.replace(new RegExp(NGSP_UNICODE, 'g'), ' ');\n }\n /**\n * This visitor can walk HTML parse tree\n and remove / trim text nodes using the following rules:\n * - consider spaces, tabs and new lines as whitespace\n characters;\n * - drop text nodes consisting of whitespace characters only;\n * - for all other text nodes replace\n consecutive whitespace characters with one space;\n * - convert pseudo-entity to a single space;\n */\n Removal and trimming of whitespaces have positive performance impact (less code to generate\n * while compiling\n templates, faster view creation). At the same time it can be \"destructive\" in some cases (whitespaces can\n influence layout). Because of the potential of breaking layout\n * this visitor is not activated by default in Angular 5\n and people need to explicitly opt-in for\n * whitespace removal. The default option for whitespace removal will be\n revisited in Angular 6\n * and might be changed to \"on\" by default.\n */\n nvar WhitespaceVisitor = /**\n * @class */\n (function () {\n function WhitespaceVisitor() {\n }\n /**\n * @param {?} element\n * @param {?} context\n * @return {?}\n */\n WhitespaceVisitor.prototype.visitElement = /**\n * @param {?} element\n * @param {?} context\n * @return {?}\n */\n function (element, context) {\n if\n (SKIP_WS_TRIM_TAGS.has(element.name) || hasPreserveWhitespacesAttr(element.attrs)) {\n // don't\n descent into elements where we need to preserve whitespaces\n // but still visit all attributes to eliminate one\n used as a market to preserve WS\n return new Element(element.name, visitAll(this, element.attrs),\n element.children, element.sourceSpan, element.startSourceSpan, element.endSourceSpan);\n }\n return new\n Element(element.name, element.attrs, visitAll(this, element.children), element.sourceSpan,\n element.startSourceSpan, element.endSourceSpan);\n };\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n WhitespaceVisitor.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n function (attribute, context) {\n return\n attribute.name !== PRESERVE_WS_ATTR_NAME ? attribute : null;\n };\n /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n WhitespaceVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?} context\n * @return {?}\n */\n function (text, context) {\n var /**\n * @type {?} */\n isNotBlank = text.value.match(NO_WS_REGEXP);\n if (isNotBlank) {\n return new\n Text(replaceNgsp(text.value).replace(WS_REPLACE_REGEXP, ' '), text.sourceSpan);\n }\n return null;\n }\n }());

```

```

};\n /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n
WhitespaceVisitor.prototype.visitComment = /**\n * @param {?} comment\n * @param {?} context\n *
@return {?}\n */\n function (comment, context) { return comment; };\n /**\n * @param {?} expansion\n *
@param {?} context\n * @return {?}\n */\n WhitespaceVisitor.prototype.visitExpansion = /**\n *
@param {?} expansion\n * @param {?} context\n * @return {?}\n */\n function (expansion, context) {
return expansion; };\n /**\n * @param {?} expansionCase\n * @param {?} context\n * @return {?}\n
*/\n WhitespaceVisitor.prototype.visitExpansionCase = /**\n * @param {?} expansionCase\n * @param {?}
context\n * @return {?}\n */\n function (expansionCase, context) { return expansionCase; };\n return
WhitespaceVisitor;\n})();\n/**\n * @param {?} htmlAstWithErrors\n * @return {?}\n */\nfunction
removeWhitespaces(htmlAstWithErrors) {\n return new ParseTreeResult(visitAll(new WhitespaceVisitor(),
htmlAstWithErrors.rootNodes), htmlAstWithErrors.errors);\n}\n\n/**\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
*\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n */\n\n * http://cldr.unicode.org/index/cldr-spec/plural-rules\n * nvar PLURAL_CASES =
['zero', 'one', 'two', 'few', 'many', 'other'];\n\n * Expands special forms into elements.\n *\n * For example,\n *\n * ``\n * { messages.length, plural,\n * =0 {zero}\n * =1 {one}\n * other {more than one}\n * }\n * ``\n * will
be expanded into\n *\n * ``\n * <ng-container [ngPlural]="messages.length">\n * <ng-template
ngPluralCase="=0">zero</ng-template>\n * <ng-template ngPluralCase="=1">one</ng-template>\n * <ng-
template ngPluralCase="other">more than one</ng-template>\n * </ng-container>\n * ``\n * @param {?} nodes\n
* @return {?}\n */\nfunction expandNodes(nodes) {\n var /** @type {?} */ expander = new _Expander();\n
return new ExpansionResult(visitAll(expander, nodes), expander.isExpanded, expander.errors);\n}\n\nvar
ExpansionResult = /** @class */ (function () {\n function ExpansionResult(nodes, expanded, errors) {\n
this.nodes = nodes;\n this.expanded = expanded;\n this.errors = errors;\n }\n return
ExpansionResult;\n})();\n\nvar ExpansionError = /** @class */ (function (_super) {\n __extends(ExpansionError,
_super);\n function ExpansionError(span, errorMsg) {\n return _super.call(this, span, errorMsg) || this;\n }\n
return ExpansionError;\n})(ParseError);\n\n * Expand expansion forms (plural, select) to directives\n *\n
*\n * @internal\n */\n\nvar _Expander = /** @class */ (function () {\n function _Expander() {\n this.isExpanded =
false;\n this.errors = [];\n }\n /**\n * @param {?} element\n * @param {?} context\n * @return
{?}\n */\n *\n */\n _Expander.prototype.visitElement = /**\n * @param {?} element\n * @param {?} context\n
* @return {?}\n */\n *\n */\n function (element, context) {\n return new Element(element.name, element.attrs,
visitAll(this, element.children), element.sourceSpan, element.startSourceSpan, element.endSourceSpan);\n };\n
/**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n *\n */\n
_Expander.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n * @return
{?}\n */\n *\n */\n function (attribute, context) { return attribute; };\n /**\n * @param {?} text\n * @param {?}
context\n * @return {?}\n */\n *\n */\n _Expander.prototype.visitText = /**\n * @param {?} text\n * @param
{?}\n * @return {?}\n */\n *\n */\n function (text, context) { return text; };\n /**\n * @param {?}
comment\n * @param {?} context\n * @return {?}\n */\n *\n */\n _Expander.prototype.visitComment = /**\n *
@param {?} comment\n * @param {?} context\n * @return {?}\n */\n *\n */\n function (comment, context) {
return comment; };\n /**\n * @param {?} icu\n * @param {?} context\n * @return {?}\n */\n *\n */\n
_Expander.prototype.visitExpansion = /**\n * @param {?} icu\n * @param {?} context\n * @return {?}\n
*/\n *\n */\n function (icu, context) {\n this.isExpanded = true;\n return icu.type === 'plural' ?
_expandPluralForm(icu, this.errors) :\n _expandDefaultForm(icu, this.errors);\n };\n /**\n * @param
{?}\n * @param {?} icuCase\n * @param {?} context\n * @return {?}\n */\n *\n */\n
_Expander.prototype.visitExpansionCase = /**\n * @param {?} icuCase\n * @param {?} context\n * @return
{?}\n */\n *\n */\n function (icuCase, context) {\n throw new Error('Should not be reached');\n };\n
return _Expander;\n})();\n\n * @param {?} ast\n * @param {?} errors\n * @return {?}\n */\n\nfunction _expandPluralForm(ast, errors) {\n var /** @type {?} */
children = ast.cases.map(function (c) {\n if (PLURAL_CASES.indexOf(c.value) === -1 &&
!c.value.match(/^=\d+$/)) {\n errors.push(new ExpansionError(c.valueSourceSpan, "Plural cases should be

```





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BindingParser.prototype.createDirectiveHostEventAsts = /**\n * @param {?} dirMeta\n * @param {?}
sourceSpan\n * @return {?}\n */\n function (dirMeta, sourceSpan) {\n var _this = this;\n if
(dirMeta.hostListeners) {\n var /** @type {?} */ targetEventAsts_1 = [];\n
Object.keys(dirMeta.hostListeners).forEach(function (propName) {\n var /** @type {?} */ expression =
dirMeta.hostListeners[propName];\n if (typeof expression === 'string') {\n
_this.parseEvent(propName, expression, sourceSpan, [], targetEventAsts_1);\n }
else {\n
_this._reportError("Value of the host listener \"" + propName + "\" needs to be a string representing an
expression but got \"" + expression + "\" (" + typeof expression + ")");\n }
});\n
return targetEventAsts_1;\n }
return null;\n };\n /**\n * @param {?} value\n * @param
{?} sourceSpan\n * @return {?}\n */\n BindingParser.prototype.parseInterpolation = /**\n * @param {?}
value\n * @param {?} sourceSpan\n * @return {?}\n */\n function (value, sourceSpan) {\n var /**
@type {?} */ sourceInfo = sourceSpan.start.toString();\n try {\n var /** @type {?} */ ast = /** @type
{?} */ ((this._exprParser.parseInterpolation(value, sourceInfo, this._interpolationConfig));\n if (ast)\n
this._reportExpressionParserErrors(ast.errors, sourceSpan);\n this._checkPipes(ast, sourceSpan);\n
return ast;\n }
catch (/** @type {?} */ e) {\n this._reportError("\" + e, sourceSpan);\n
return this._exprParser.wrapLiteralPrimitive('ERROR', sourceInfo);\n }
};\n /**\n * @param {?}
prefixToken\n * @param {?} value\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n
* @param {?} targetProps\n * @param {?} targetVars\n * @return {?}\n */\n
BindingParser.prototype.parseInlineTemplateBinding = /**\n * @param {?} prefixToken\n * @param {?}
value\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n
* @param {?} targetVars\n * @return {?}\n */\n function (prefixToken, value, sourceSpan,
targetMatchableAttrs, targetProps, targetVars) {\n var /** @type {?} */ bindings =
this._parseTemplateBindings(prefixToken, value, sourceSpan);\n for (var /** @type {?} */ i = 0; i <
bindings.length; i++) {\n var /** @type {?} */ binding = bindings[i];\n if (binding.keyIsVar) {\n
targetVars.push(new VariableAst(binding.key, binding.name, sourceSpan));\n }
else if
(binding.expression) {\n this._parsePropertyAst(binding.key, binding.expression, sourceSpan,
targetMatchableAttrs, targetProps);\n }
else {\n targetMatchableAttrs.push([binding.key,
"]);
this.parseLiteralAttr(binding.key, null, sourceSpan, targetMatchableAttrs, targetProps);\n }
};\n };\n /**\n * @param {?} prefixToken\n * @param {?} value\n * @param {?} sourceSpan\n
* @return {?}\n */\n BindingParser.prototype._parseTemplateBindings = /**\n * @param {?} prefixToken\n
* @param {?} value\n * @param {?} sourceSpan\n * @return {?}\n */\n function (prefixToken, value,
sourceSpan) {\n var _this = this;\n var /** @type {?} */ sourceInfo = sourceSpan.start.toString();\n
try {\n var /** @type {?} */ bindingsResult = this._exprParser.parseTemplateBindings(prefixToken, value,
sourceInfo);\n this._reportExpressionParserErrors(bindingsResult.errors, sourceSpan);\n
bindingsResult.templateBindings.forEach(function (binding) {\n if (binding.expression) {\n
_this._checkPipes(binding.expression, sourceSpan);\n }
});\n
bindingsResult.warnings.forEach(function (warning) { _this._reportError(warning, sourceSpan,
ParseErrorLevel.WARNING); });\n return bindingsResult.templateBindings;\n }
catch (/** @type
{?} */ e) {\n this._reportError("\" + e, sourceSpan);\n return [];\n }
};\n /**\n * @param
{?} name\n * @param {?} value\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n
* @param {?} targetProps\n * @return {?}\n */\n BindingParser.prototype.parseLiteralAttr = /**\n
* @param {?} name\n * @param {?} value\n * @param {?} sourceSpan\n * @param {?}
targetMatchableAttrs\n * @param {?} targetProps\n * @return {?}\n */\n function (name, value,
sourceSpan, targetMatchableAttrs, targetProps) {\n if (_isAnimationLabel(name)) {\n name =
name.substring(1);\n if (value) {\n this._reportError("Assigning animation triggers via
@prop=\\\"exp\\\" attributes with an expression is invalid.\" +\n
\" Use property bindings (e.g.
[@prop]=\\\"exp\\\") or use an attribute without a value (e.g. @prop) instead.\", sourceSpan,
ParseErrorLevel.ERROR);\n }
this._parseAnimation(name, value, sourceSpan,

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targetMatchableAttrs, targetProps);\n }\n else {\n targetProps.push(new BoundProperty(name,\n this._exprParser.wrapLiteralPrimitive(value, ""), BoundPropertyType.LITERAL_ATTR, sourceSpan));\n }\n};\n /**\n * @param {?} name\n * @param {?} expression\n * @param {?} isHost\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n * @return {?}\n */\n BindingParser.prototype.parsePropertyBinding = /**\n * @param {?} name\n * @param {?} expression\n * @param {?} isHost\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n * @return {?}\n */\n function (name, expression, isHost, sourceSpan, targetMatchableAttrs,\n targetProps) {\n var /** @type {?} */ isAnimationProp = false;\n if\n (name.startsWith(ANIMATE_PROP_PREFIX)) {\n isAnimationProp = true;\n name =\n name.substring(ANIMATE_PROP_PREFIX.length);\n }\n else if (_isAnimationLabel(name)) {\n isAnimationProp = true;\n name = name.substring(1);\n }\n if (isAnimationProp) {\n this._parseAnimation(name, expression, sourceSpan, targetMatchableAttrs, targetProps);\n }\n else {\n this._parsePropertyAst(name, this._parseBinding(expression, isHost, sourceSpan), sourceSpan,\n targetMatchableAttrs, targetProps);\n }\n};\n /**\n * @param {?} name\n * @param {?} value\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n * @return\n {?}\n */\n BindingParser.prototype.parsePropertyInterpolation = /**\n * @param {?} name\n * @param\n {?} value\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n * @return\n {?}\n */\n function (name, value, sourceSpan, targetMatchableAttrs, targetProps) {\n var /**\n @type {?} */ expr = this.parseInterpolation(value, sourceSpan);\n if (expr) {\n this._parsePropertyAst(name, expr, sourceSpan, targetMatchableAttrs, targetProps);\n return true;\n }\n return false;\n};\n /**\n * @param {?} name\n * @param {?} ast\n * @param {?} sourceSpan\n * @param\n {?} targetMatchableAttrs\n * @param {?} targetProps\n * @return {?}\n */\n BindingParser.prototype._parsePropertyAst = /**\n * @param {?} name\n * @param {?} ast\n * @param\n {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n * @return {?}\n */\n function (name, ast, sourceSpan, targetMatchableAttrs, targetProps) {\n targetMatchableAttrs.push([name, /** @type {?} */ ((ast.source))]);\n targetProps.push(new\n BoundProperty(name, ast, BoundPropertyType.DEFAULT, sourceSpan));\n };\n /**\n * @param {?} name\n * @param\n {?} expression\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param\n {?} targetProps\n * @return {?}\n */\n BindingParser.prototype._parseAnimation = /**\n * @param {?} name\n * @param\n {?} expression\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param\n {?} targetProps\n * @return {?}\n */\n function (name, expression, sourceSpan,\n targetMatchableAttrs, targetProps) {\n // This will occur when a @trigger is not paired with an expression.\n // For animations it is valid to not have an expression since */void\n // states will be applied by angular when the\n element is attached/detached\n var /** @type {?} */ ast = this._parseBinding(expression || 'undefined', false,\n sourceSpan);\n targetMatchableAttrs.push([name, /** @type {?} */ ((ast.source))]);\n targetProps.push(new\n BoundProperty(name, ast, BoundPropertyType.ANIMATION, sourceSpan));\n };\n /**\n * @param\n {?} value\n * @param\n {?} isHostBinding\n * @param\n {?} sourceSpan\n * @return\n {?}\n */\n BindingParser.prototype._parseBinding = /**\n * @param\n {?} value\n * @param\n {?} isHostBinding\n * @param\n {?} sourceSpan\n * @return\n {?}\n */\n function (value, isHostBinding, sourceSpan) {\n var /**\n @type\n {?} */ sourceInfo = sourceSpan.start.toString();\n try {\n var /** @type\n {?} */ ast =\n isHostBinding ?\n this._exprParser.parseSimpleBinding(value, sourceInfo, this._interpolationConfig) :\n this._exprParser.parseBinding(value, sourceInfo, this._interpolationConfig);\n if (ast)\n this._reportExpressionParserErrors(ast.errors, sourceSpan);\n this._checkPipes(ast, sourceSpan);\n return ast;\n }\n catch (** @type\n {?} */ e) {\n this._reportError("\\\" + e, sourceSpan);\n return this._exprParser.wrapLiteralPrimitive('ERROR', sourceInfo);\n }\n};\n /**\n * @param\n {?} elementSelector\n * @param\n {?} boundProp\n * @return\n {?}\n */\n BindingParser.prototype.createElementPropertyAst = /**\n * @param\n {?} elementSelector\n * @param\n {?} boundProp\n * @return\n {?}\n */\n function (elementSelector, boundProp) {\n if

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(boundsProp.isAnimation) {\n return new BoundElementPropertyAst(boundsProp.name,
PropertyBindingType.Animation, SecurityContext.NONE, boundsProp.expression, null, boundsProp.sourceSpan);\n
 }\n var /** @type {?} */ unit = null;\n var /** @type {?} */ bindingType = /** @type {?} */
((undefined));\n var /** @type {?} */ boundPropertyName = null;\n var /** @type {?} */ parts =
boundsProp.name.split(PROPERTY_PARTS_SEPARATOR);\n var /** @type {?} */ securityContexts = /**
@type {?} */ ((undefined));\n // Check check for special cases (prefix style, attr, class)\n if (parts.length >
1) {\n if (parts[0] == ATTRIBUTE_PREFIX) {\n boundPropertyName = parts[1];\n
this._validatePropertyOrAttributeName(boundPropertyName, boundsProp.sourceSpan, true);\n
securityContexts = calcPossibleSecurityContexts(this._schemaRegistry, elementSelector, boundPropertyName,
true);\n var /** @type {?} */ nsSeparatorIdx = boundPropertyName.indexOf(':');\n if
(nsSeparatorIdx > -1) {\n var /** @type {?} */ ns = boundPropertyName.substring(0, nsSeparatorIdx);\n
 var /** @type {?} */ name_1 = boundPropertyName.substring(nsSeparatorIdx + 1);\n
boundPropertyName = mergeNsAndName(ns, name_1);\n }\n bindingType =
PropertyBindingType.Attribute;\n }\n else if (parts[0] == CLASS_PREFIX) {\n
boundPropertyName = parts[1];\n bindingType = PropertyBindingType.Class;\n securityContexts
= [SecurityContext.NONE];\n }\n else if (parts[0] == STYLE_PREFIX) {\n unit =
parts.length > 2 ? parts[2] : null;\n boundPropertyName = parts[1];\n bindingType =
PropertyBindingType.Style;\n securityContexts = [SecurityContext.STYLE];\n }\n }\n // If
not a special case, use the full property name\n if (boundPropertyName === null) {\n
boundPropertyName = this._schemaRegistry.getMappedPropName(boundsProp.name);\n securityContexts =
calcPossibleSecurityContexts(this._schemaRegistry, elementSelector, boundPropertyName, false);\n
bindingType = PropertyBindingType.Property;\n
this._validatePropertyOrAttributeName(boundPropertyName, boundsProp.sourceSpan, false);\n }\n return
new BoundElementPropertyAst(boundPropertyName, bindingType, securityContexts[0], boundsProp.expression,
unit, boundsProp.sourceSpan);\n };\n /**\n * @param {?} name\n * @param {?} expression\n * @param
 {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetEvents\n * @return {?}
*\n *\n * BindingParser.prototype.parseEvent = /**\n * @param {?} name\n * @param {?} expression\n *
@param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetEvents\n * @return
 {?}\n * \n * function (name, expression, sourceSpan, targetMatchableAttrs, targetEvents) {\n if
(_isAnimationLabel(name)) {\n name = name.substr(1);\n this._parseAnimationEvent(name,
expression, sourceSpan, targetEvents);\n }\n else {\n this._parseEvent(name, expression,
sourceSpan, targetMatchableAttrs, targetEvents);\n }\n };\n /**\n * @param {?} name\n * @param {?}
expression\n * @param {?} sourceSpan\n * @param {?} targetEvents\n * @return {?}
*\n *\n * BindingParser.prototype._parseAnimationEvent = /**\n * @param {?} name\n * @param {?}
expression\n * @param {?} sourceSpan\n * @param {?} targetEvents\n * @return {?}
*\n * \n * function (name, expression, sourceSpan, targetEvents) {\n var /** @type {?} */
matches = splitAtPeriod(name, [name, "]);\n var /**
@type {?} */ eventName = matches[0];\n var /** @type {?} */ phase = matches[1].toLowerCase();\n if
(phase) {\n switch (phase) {\n case 'start':\n case 'done':\n var /** @type {?} */
*\n ast = this._parseAction(expression, sourceSpan);\n targetEvents.push(new BoundEventAst(eventName,
null, phase, ast, sourceSpan));\n break;\n default:\n this._reportError("The
provided animation output phase value '" + phase + "' for '" + name + "' is not supported (use
start or done)", sourceSpan);\n break;\n }\n }\n else {\n this._reportError("The
animation trigger output event (' + eventName + ') is missing its phase value name (start or done are currently
supported)", sourceSpan);\n }\n }\n };\n /**\n * @param {?} name\n * @param {?} expression\n *
@param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetEvents\n * @return
 {?}\n * \n * BindingParser.prototype._parseEvent = /**\n * @param {?} name\n * @param {?}
expression\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetEvents\n *
@return {?}
*\n * \n * function (name, expression, sourceSpan, targetMatchableAttrs, targetEvents) {\n // long

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format: 'target: eventName'\n var _a = splitAtColon(name, [/** @type {?} */ ((null)), name), target = _a[0],
eventName = _a[1];\n var /** @type {?} */ ast = this._parseAction(expression, sourceSpan);\n
targetMatchableAttrs.push([/** @type {?} */ ((name)), /** @type {?} */ ((ast.source)));\n
targetEvents.push(new BoundEventAst(eventName, target, null, ast, sourceSpan);\n // Don't detect directives
for event names for now,\n // so don't add the event name to the matchableAttrs\n];\n /**\n * @param
{?} value\n * @param {?} sourceSpan\n * @return {?}\n */\n BindingParser.prototype._parseAction =
/**\n * @param {?} value\n * @param {?} sourceSpan\n * @return {?}\n */\n function (value,
sourceSpan) {\n var /** @type {?} */ sourceInfo = sourceSpan.start.toString();\n try {\n var /**
@type {?} */ ast = this._exprParser.parseAction(value, sourceInfo, this._interpolationConfig);\n if (ast) {\n
this._reportExpressionParserErrors(ast.errors, sourceSpan);\n }\n if (!ast || ast.ast instanceof
EmptyExpr) {\n this._reportError("Empty expressions are not allowed", sourceSpan);\n return
this._exprParser.wrapLiteralPrimitive('ERROR', sourceInfo);\n }\n this._checkPipes(ast,
sourceSpan);\n return ast;\n }\n catch (/** @type {?} */ e) {\n this._reportError("\n" + e,
sourceSpan);\n return this._exprParser.wrapLiteralPrimitive('ERROR', sourceInfo);\n }\n };\n /**\n
* @param {?} message\n * @param {?} sourceSpan\n * @param {?=} level\n * @return {?}\n */\n
BindingParser.prototype._reportError = /**\n * @param {?} message\n * @param {?} sourceSpan\n *
@param {?=} level\n * @return {?}\n */\n function (message, sourceSpan, level) {\n if (level === void
0) { level = ParseErrorLevel.ERROR; }\n this._targetErrors.push(new ParseError(sourceSpan, message,
level));\n };\n /**\n * @param {?} errors\n * @param {?} sourceSpan\n * @return {?}\n */\n
BindingParser.prototype._reportExpressionParserErrors = /**\n * @param {?} errors\n * @param {?}
sourceSpan\n * @return {?}\n */\n function (errors, sourceSpan) {\n for (var _i = 0, errors_1 = errors; _i
< errors_1.length; _i++) {\n var error = errors_1[_i];\n this._reportError(error.message, sourceSpan);\n
}\n };\n /**\n * @param {?} ast\n * @param {?} sourceSpan\n * @return {?}\n */\n
BindingParser.prototype._checkPipes = /**\n * @param {?} ast\n * @param {?} sourceSpan\n * @return
{?}\n */\n function (ast, sourceSpan) {\n var _this = this;\n if (ast) {\n var /** @type {?} */
collector = new PipeCollector();\n ast.visit(collector);\n collector.pipes.forEach(function (ast,
pipeName) {\n var /** @type {?} */ pipeMeta = _this.pipesByName.get(pipeName);\n if
(!pipeMeta) {\n _this._reportError("The pipe \"" + pipeName + "\" could not be found", new
ParseSourceSpan(sourceSpan.start.moveBy(ast.span.start), sourceSpan.start.moveBy(ast.span.end)));\n }\n
else {\n _this._usedPipes.set(pipeName, pipeMeta);\n }\n });\n };\n };\n /**\n
* @param {?} propName the name of the property / attribute\n * @param {?} sourceSpan\n * @param
{?} isAttr true when binding to an attribute\n * @return {?}\n */\n
BindingParser.prototype._validatePropertyOrAttributeName = /**\n * @param {?} propName the name of the
property / attribute\n * @param {?} sourceSpan\n * @param {?} isAttr true when binding to an attribute\n
* @return {?}\n */\n function (propName, sourceSpan, isAttr) {\n var /** @type {?} */ report = isAttr ?
this._schemaRegistry.validateAttribute(propName) : this._schemaRegistry.validateProperty(propName);\n
if (report.error) {\n this._reportError(/** @type {?} */ ((report.msg)), sourceSpan,
ParseErrorLevel.ERROR);\n }\n };\n return BindingParser;\n }());\n nvar PipeCollector = /** @class */
(function (_super) {\n __extends(PipeCollector, _super);\n function PipeCollector() {\n var _this = _super
!== null && _super.apply(this, arguments) || this;\n _this.pipes = new Map();\n return _this;\n }\n /**\n
* @param {?} ast\n * @param {?} context\n * @return {?}\n */\n
PipeCollector.prototype.visitPipe =
/**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n function (ast, context) {\n
this.pipes.set(ast.name, ast);\n ast.exp.visit(this);\n this.visitAll(ast.args, context);\n return null;\n
};\n return PipeCollector;\n })(RecursiveAstVisitor);\n /**\n * @param {?} name\n * @return {?}\n */\n
function _isAnimationLabel(name) {\n return name[0] === '@';\n }\n /**\n * @param {?} registry\n * @param {?} selector\n
* @param {?} propName\n * @param {?} isAttribute\n * @return {?}\n */\n
function calcPossibleSecurityContexts(registry, selector, propName, isAttribute) {\n var /** @type {?} */ ctxs = [];\n
CssSelector.parse(selector).forEach(function (selector) {\n var /** @type {?} */ elementNames =

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((result.templateAst)), pipes: /** @type {?} */ ((result.usedPipes)) });\n });\n /**\n * @param {?} component\n * @param {?} template\n * @param {?} directives\n * @param {?} pipes\n * @param {?} schemas\n * @param {?} templateUrl\n * @param {?} preserveWhitespaces\n * @return {?}\n */\n TemplateParser.prototype.tryParse = /**\n * @param {?} component\n * @param {?} template\n * @param {?} directives\n * @param {?} pipes\n * @param {?} schemas\n * @param {?} templateUrl\n * @param {?} preserveWhitespaces\n * @return {?}\n */\n function (component, template, directives, pipes, schemas, templateUrl, preserveWhitespaces) {\n var /** @type {?} */ htmlParseResult = typeof template === 'string' ?\n /** @type {?} */ ((this._htmlParser)).parse(template, templateUrl, true, this.getInterpolationConfig(component)) : \n template;\n if (!preserveWhitespaces) {\n htmlParseResult =\n removeWhitespaces(htmlParseResult);\n }\n return this.tryParseHtml(this.expandHtml(htmlParseResult),\n component, directives, pipes, schemas);\n });\n /**\n * @param {?} htmlAstWithErrors\n * @param {?} component\n * @param {?} directives\n * @param {?} pipes\n * @param {?} schemas\n * @return {?}\n */\n TemplateParser.prototype.tryParseHtml = /**\n * @param {?} htmlAstWithErrors\n * @param {?} component\n * @param {?} directives\n * @param {?} pipes\n * @param {?} schemas\n * @return {?}\n */\n function (htmlAstWithErrors, component, directives, pipes, schemas) {\n var /** @type {?} */ result;\n var /** @type {?} */ errors = htmlAstWithErrors.errors;\n var /** @type {?} */ usedPipes = [];\n if\n (htmlAstWithErrors.rootNodes.length > 0) {\n var /** @type {?} */ uniqDirectives =\n removeSummaryDuplicates(directives);\n var /** @type {?} */ uniqPipes =\n removeSummaryDuplicates(pipes);\n var /** @type {?} */ providerViewContext = new\n ProviderViewContext(this._reflector, component);\n var /** @type {?} */ interpolationConfig = /** @type\n {?} */ ((undefined));\n if (component.template && component.template.interpolation) {\n interpolationConfig = {\n start: component.template.interpolation[0],\n end:\n component.template.interpolation[1]\n };\n }\n var /** @type {?} */ bindingParser = new\n BindingParser(this._exprParser, /** @type {?} */ ((interpolationConfig)), this._schemaRegistry, uniqPipes,\n errors);\n var /** @type {?} */ parseVisitor = new TemplateParseVisitor(this._reflector, this._config,\n providerViewContext, uniqDirectives, bindingParser, this._schemaRegistry, schemas, errors);\n result =\n visitAll(parseVisitor, htmlAstWithErrors.rootNodes, EMPTY_ELEMENT_CONTEXT);\n errors.push.apply(errors, providerViewContext.errors);\n usedPipes.push.apply(usedPipes,\n bindingParser.getUsedPipes());\n }\n else {\n result = [];\n }\n this._assertNoReferenceDuplicationOnTemplate(result, errors);\n if (errors.length > 0) {\n return new\n TemplateParseResult(result, usedPipes, errors);\n }\n if (this.transforms) {\n this.transforms.forEach(function (transform) {\n result = templateVisitAll(transform, result);\n });\n return\n new TemplateParseResult(result, usedPipes, errors);\n }\n /**\n * @param {?} htmlAstWithErrors\n * @param {?}=? forced\n * @return {?}\n */\n TemplateParser.prototype.expandHtml = /**\n * @param {?} htmlAstWithErrors\n * @param {?}=? forced\n * @return {?}\n */\n function (htmlAstWithErrors, forced)\n {\n if (forced === void 0) {\n forced = false;\n }\n var /** @type {?} */ errors = htmlAstWithErrors.errors;\n if (errors.length === 0 || forced) {\n // Transform ICU messages to angular directives\n var /** @type\n {?} */ expandedHtmlAst = expandNodes(htmlAstWithErrors.rootNodes);\n errors.push.apply(errors,\n expandedHtmlAst.errors);\n htmlAstWithErrors = new ParseTreeResult(expandedHtmlAst.nodes, errors);\n }\n return htmlAstWithErrors;\n });\n /**\n * @param {?} component\n * @return {?}\n */\n TemplateParser.prototype.getInterpolationConfig = /**\n * @param {?} component\n * @return {?}\n */\n function (component) {\n if (component.template) {\n return\n InterpolationConfig.fromArray(component.template.interpolation);\n }\n return undefined;\n }; \n /**\n * @internal\n * @param {?} result\n * @param {?} errors\n * @return {?}\n */\n TemplateParser.prototype._assertNoReferenceDuplicationOnTemplate = /**\n * @internal\n * @param\n {?} result\n * @param {?} errors\n * @return {?}\n */\n function (result, errors) {\n var /** @type {?} */\n existingReferences = [];\n result.filter(function (element) {\n return !(/** @type {?} */ (element)).references;\n })\n .forEach(function (element) {\n return (/** @type {?} */ (element)).references.forEach(function

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(reference) {\n var /** @type {?} */ name = reference.name;\n if\n (existingReferences.indexOf(name) < 0) {\n existingReferences.push(name);\n }\n else {\n var /** @type {?} */ error = new TemplateParseError("Reference '\\\\#" + name + "\\\" is\n defined several times", reference.sourceSpan, ParseErrorLevel.ERROR);\n errors.push(error);\n }\n });\n });\n });\n return TemplateParser;\n };\n nvar TemplateParseVisitor = /** @class */\n (function () {\n function TemplateParseVisitor(reflector, config, providerViewContext, directives, _bindingParser,\n _schemaRegistry, _schemas, _targetErrors) {\n var _this = this;\n this.reflector = reflector;\n this.config\n = config;\n this.providerViewContext = providerViewContext;\n this._bindingParser = _bindingParser;\n this._schemaRegistry = _schemaRegistry;\n this._schemas = _schemas;\n this._targetErrors =\n _targetErrors;\n this.selectorMatcher = new SelectorMatcher();\n this.directivesIndex = new Map();\n this.ngContentCount = 0;\n // Note: queries start with id 1 so we can use the number in a Bloom filter!\n this.contentQueryStartId = providerViewContext.component.viewQueries.length + 1;\n directives.forEach(function (directive, index) {\n var /** @type {?} */ selector = CssSelector.parse(/**\n @type {?} */ ((directive.selector));\n _this.selectorMatcher.addSelectable(selector, directive);\n _this.directivesIndex.set(directive, index);\n });\n }\n /**\n * @param {?} expansion\n * @param {?} context\n * @return {?}\n */\n TemplateParseVisitor.prototype.visitExpansion = /**\n * @param {?} expansion\n * @param {?} context\n * @return {?}\n */\n function (expansion, context) {\n return null;\n };\n /**\n * @param {?} expansionCase\n * @param {?} context\n * @return {?}\n */\n TemplateParseVisitor.prototype.visitExpansionCase = /**\n * @param {?} expansionCase\n * @param {?} context\n * @return {?}\n */\n function (expansionCase, context) {\n return null;\n };\n /**\n * @param {?} parent\n * @return {?}\n */\n TemplateParseVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?} parent\n * @return {?}\n */\n function (text, parent) {\n var /**\n @type {?} */ ngContentIndex = /** @type {?} */ ((parent.findNgContentIndex(TEXT_CSS_SELECTOR));\n var /** @type {?} */ valueNoNgsp = replaceNgsp(text.value);\n var /** @type {?} */ expr =\n this._bindingParser.parseInterpolation(valueNoNgsp, /** @type {?} */ ((text.sourceSpan));\n return expr ?\n new BoundTextAst(expr, ngContentIndex, /** @type {?} */ ((text.sourceSpan))) : new\n TextAst(valueNoNgsp, ngContentIndex, /** @type {?} */ ((text.sourceSpan));\n });\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n TemplateParseVisitor.prototype.visitAttribute =\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n function (attribute,\n context) {\n return new AttrAst(attribute.name, attribute.value, attribute.sourceSpan);\n };\n /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n TemplateParseVisitor.prototype.visitComment = /**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n function (comment, context) {\n return null;\n };\n /**\n * @param {?} element\n * @param {?} parent\n * @return {?}\n */\n TemplateParseVisitor.prototype.visitElement = /**\n * @param {?} element\n * @param {?} parent\n * @return {?}\n */\n function (element, parent) {\n var _this =\n this;\n var /** @type {?} */ queryStartIndex = this.contentQueryStartId;\n var /** @type {?} */ nodeName\n = element.name;\n var /** @type {?} */ preparedElement = prepareElement(element);\n if\n (preparedElement.type === PreparedElementType.SCRIPT ||\n preparedElement.type ===\n PreparedElementType.STYLE) {\n // Skipping <script> for security reasons\n // Skipping <style> as\n we already processed them\n // in the StyleCompiler\n return null;\n }\n if\n (preparedElement.type === PreparedElementType.STYLESHEET &&\n isStyleUrlResolvable(preparedElement.hrefAttr)) {\n // Skipping stylesheets with either relative urls or\n package scheme as we already processed\n // them in the StyleCompiler\n return null;\n }\n var /** @type {?} */ matchableAttrs = [];\n var /** @type {?} */ elementOrDirectiveProps = [];\n var /**\n @type {?} */ elementOrDirectiveRefs = [];\n var /** @type {?} */ elementVars = [];\n var /** @type {?} */\n events = [];\n var /** @type {?} */ templateElementOrDirectiveProps = [];\n var /** @type {?} */\n templateMatchableAttrs = [];\n var /** @type {?} */ templateElementVars = [];\n var /** @type {?} */\n hasInlineTemplates = false;\n var /** @type {?} */ attrs = [];\n var /** @type {?} */ isTemplateElement =

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isTemplate(element, this.config.enableLegacyTemplate, function (m, span) { return _this._reportError(m, span,
ParseErrorLevel.WARNING); });\n element.attrs.forEach(function (attr) {\n var /** @type {?} */
hasBinding = _this._parseAttr(isTemplateElement, attr, matchableAttrs, elementOrDirectiveProps, events,
elementOrDirectiveRefs, elementVars);\n var /** @type {?} */ templateBindingsSource;\n var /**
@type {?} */ prefixToken;\n var /** @type {?} */ normalizedName =
_this._normalizeAttributeName(attr.name);\n if (_this.config.enableLegacyTemplate && normalizedName
== TEMPLATE_ATTR) {\n _this._reportError(TEMPLATE_ATTR_DEPRECATION_WARNING,
attr.sourceSpan, ParseErrorLevel.WARNING);\n templateBindingsSource = attr.value;\n }\n else if (normalizedName.startsWith(TEMPLATE_ATTR_PREFIX)) {\n templateBindingsSource =
attr.value;\n prefixToken = normalizedName.substr(TEMPLATE_ATTR_PREFIX.length) + ':';\n }\n var /** @type {?} */ hasTemplateBinding = templateBindingsSource != null;\n if
(hasTemplateBinding) {\n if (hasInlineTemplates) {\n _this._reportError("Can't have multiple
template bindings on one element. Use only one attribute named 'template' or prefixed with *", attr.sourceSpan);\n }\n hasInlineTemplates = true;\n _this._bindingParser.parseInlineTemplateBinding(/**
@type {?} */ ((prefixToken)), /** @type {?} */ ((templateBindingsSource)), attr.sourceSpan,
templateMatchableAttrs, templateElementOrDirectiveProps, templateElementVars);\n }\n if
(!hasBinding && !hasTemplateBinding) {\n // don't include the bindings as attributes as well in the AST\n attrs.push(_this.visitAttribute(attr, null));\n matchableAttrs.push([attr.name, attr.value]);\n }\n });\n var /** @type {?} */ elementCssSelector = createElementCssSelector(nodeName,
matchableAttrs);\n var _a = this._parseDirectives(this.selectorMatcher, elementCssSelector), directiveMetas =
_a.directives, matchElement = _a.matchElement;\n var /** @type {?} */ references = [];\n var /** @type
{?} */ boundDirectivePropNames = new Set();\n var /** @type {?} */ directiveAsts =
this._createDirectiveAsts(isTemplateElement, element.name, directiveMetas, elementOrDirectiveProps,
elementOrDirectiveRefs, /** @type {?} */ ((element.sourceSpan)), references, boundDirectivePropNames);\n var /** @type {?} */ elementProps = this._createElementPropertyAsts(element.name, elementOrDirectiveProps,
boundDirectivePropNames);\n var /** @type {?} */ isViewRoot = parent.isTemplateElement ||
hasInlineTemplates;\n var /** @type {?} */ providerContext = new
ProviderElementContext(this.providerViewContext, /** @type {?} */ ((parent.providerContext)), isViewRoot,
directiveAsts, attrs, references, isTemplateElement, queryStartIndex, /** @type {?} */ ((element.sourceSpan));\n var /** @type {?} */ children = visitAll(preparedElement.nonBindable ? NON_BINDABLE_VISITOR : this,
element.children, ElementContext.create(isTemplateElement, directiveAsts, isTemplateElement ? /** @type {?} */
((parent.providerContext)) : providerContext));\n providerContext.afterElement();\n // Override the actual
selector when the `ngProjectAs` attribute is provided\n var /** @type {?} */ projectionSelector =
preparedElement.projectAs != null ?\n CssSelector.parse(preparedElement.projectAs)[0] :\n elementCssSelector;\n var /** @type {?} */ ngContentIndex = /** @type {?} */
((parent.findNgContentIndex(projectionSelector));\n var /** @type {?} */ parsedElement;\n if
(preparedElement.type === PreparedElementType.NG_CONTENT) {\n if (element.children &&
!element.children.every(_isEmptyTextNode)) {\n this._reportError("<ng-content> element cannot have
content.", /** @type {?} */ ((element.sourceSpan));\n }\n parsedElement = new
NgContentAst(this.ngContentCount++, hasInlineTemplates ? /** @type {?} */ ((null)) : ngContentIndex, /** @type
{?} */ ((element.sourceSpan));\n }\n else if (isTemplateElement) {\n this._assertAllEventsPublishedByDirectives(directiveAsts, events);\n this._assertNoComponentsNorElementBindingsOnTemplate(directiveAsts, elementProps, /** @type {?} */
((element.sourceSpan));\n parsedElement = new EmbeddedTemplateAst(attrs, events, references,
elementVars, providerContext.transformedDirectiveAsts, providerContext.transformProviders,
providerContext.transformedHasViewContainer, providerContext.queryMatches, children, hasInlineTemplates ? /**
@type {?} */ ((null)) : ngContentIndex, /** @type {?} */ ((element.sourceSpan));\n }\n else {\n this._assertElementExists(matchElement, element);\n this._assertOnlyOneComponent(directiveAsts, /**

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@type {?} */ ((element.sourceSpan));\n var /** @type {?} */ ngContentIndex_1 = hasInlineTemplates ? null
: parent.findNgContentIndex(projectionSelector);\n parsedElement = new ElementAst(nodeName, attrs,
elementProps, events, references, providerContext.transformedDirectiveAsts, providerContext.transformProviders,
providerContext.transformedHasViewContainer, providerContext.queryMatches, children, hasInlineTemplates ?
null : ngContentIndex_1, element.sourceSpan, element.endSourceSpan || null);\n }\n if
(hasInlineTemplates) {\n var /** @type {?} */ templateQueryStartIndex = this.contentQueryStartId;\n
var /** @type {?} */ templateSelector = createElementCssSelector(TEMPLATE_ELEMENT,
templateMatchableAttrs);\n var templateDirectiveMetas = this._parseDirectives(this.selectorMatcher,
templateSelector).directives;\n var /** @type {?} */ templateBoundDirectivePropNames = new Set();\n
var /** @type {?} */ templateDirectiveAsts = this._createDirectiveAsts(true, element.name,
templateDirectiveMetas, templateElementOrDirectiveProps, [], /** @type {?} */ ((element.sourceSpan)), [],
templateBoundDirectivePropNames);\n var /** @type {?} */ templateElementProps =
this._createElementPropertyAsts(element.name, templateElementOrDirectiveProps,
templateBoundDirectivePropNames);\n
this._assertNoComponentsNorElementBindingsOnTemplate(templateDirectiveAsts, templateElementProps, /**
@type {?} */ ((element.sourceSpan));\n var /** @type {?} */ templateProviderContext = new
ProviderElementContext(this.providerViewContext, /** @type {?} */ ((parent.providerContext)),
parent.isTemplateElement, templateDirectiveAsts, [], [], true, templateQueryStartIndex, /** @type {?} */
((element.sourceSpan));\n templateProviderContext.afterElement();\n parsedElement = new
EmbeddedTemplateAst([], [], [], templateElementVars, templateProviderContext.transformedDirectiveAsts,
templateProviderContext.transformProviders, templateProviderContext.transformedHasViewContainer,
templateProviderContext.queryMatches, [parsedElement], ngContentIndex, /** @type {?} */
((element.sourceSpan));\n }\n return parsedElement;\n };\n /**\n * @param {?}
isTemplateElement\n * @param {?} attr\n * @param {?} targetMatchableAttrs\n * @param {?}
targetProps\n * @param {?} targetEvents\n * @param {?} targetRefs\n * @param {?} targetVars\n *
@return {?} \n * \n * TemplateParseVisitor.prototype._parseAttr = /**\n * @param {?} isTemplateElement\n
* @param {?} attr\n * @param {?} targetMatchableAttrs\n * @param {?} targetProps\n * @param {?}
targetEvents\n * @param {?} targetRefs\n * @param {?} targetVars\n * @return {?} \n * \n * function
(isTemplateElement, attr, targetMatchableAttrs, targetProps, targetEvents, targetRefs, targetVars) {\n var /**
@type {?} */ name = this._normalizeAttributeName(attr.name);\n var /** @type {?} */ value = attr.value;\n
var /** @type {?} */ srcSpan = attr.sourceSpan;\n var /** @type {?} */ bindParts =
name.match(BIND_NAME_REGEXP);\n var /** @type {?} */ hasBinding = false;\n if (bindParts !==
null) {\n hasBinding = true;\n if (bindParts[KW_BIND_IDX] != null) {\n
this._bindingParser.parsePropertyBinding(bindParts[IDENT_KW_IDX], value, false, srcSpan,
targetMatchableAttrs, targetProps);\n }\n else if (bindParts[KW_LET_IDX]) {\n if
(isTemplateElement) {\n var /** @type {?} */ identifier = bindParts[IDENT_KW_IDX];\n
this._parseVariable(identifier, value, srcSpan, targetVars);\n }\n else {\n
this._reportError("\"let-\" is only supported on ng-template elements.\", srcSpan);\n }\n }\n
else if (bindParts[KW_REF_IDX]) {\n var /** @type {?} */ identifier = bindParts[IDENT_KW_IDX];\n
this._parseReference(identifier, value, srcSpan, targetRefs);\n }\n else if
(bindParts[KW_ON_IDX]) {\n this._bindingParser.parseEvent(bindParts[IDENT_KW_IDX], value,
srcSpan, targetMatchableAttrs, targetEvents);\n }\n else if (bindParts[KW_BINDON_IDX]) {\n
this._bindingParser.parsePropertyBinding(bindParts[IDENT_KW_IDX], value, false, srcSpan,
targetMatchableAttrs, targetProps);\n }\n this._parseAssignmentEvent(bindParts[IDENT_KW_IDX], value,
srcSpan, targetMatchableAttrs, targetEvents);\n }\n else if (bindParts[KW_AT_IDX]) {\n
this._bindingParser.parseLiteralAttr(name, value, srcSpan, targetMatchableAttrs, targetProps);\n }\n
else if (bindParts[IDENT_BANANA_BOX_IDX]) {\n this._bindingParser.parsePropertyBinding(bindParts[IDENT_BANANA_BOX_IDX], value, false, srcSpan,

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targetMatchableAttrs, targetProps);\n
this._parseAssignmentEvent(bindParts[IDENT_BANANA_BOX_IDX], value, srcSpan, targetMatchableAttrs,\n
targetEvents);\n }\n else if (bindParts[IDENT_PROPERTY_IDX]) {\n
this._bindingParser.parsePropertyBinding(bindParts[IDENT_PROPERTY_IDX], value, false, srcSpan,\n
targetMatchableAttrs, targetProps);\n }\n else if (bindParts[IDENT_EVENT_IDX]) {\n
this._bindingParser.parseEvent(bindParts[IDENT_EVENT_IDX], value, srcSpan, targetMatchableAttrs,\n
targetEvents);\n }\n }\n else {\n hasBinding =\n
this._bindingParser.parsePropertyInterpolation(name, value, srcSpan, targetMatchableAttrs, targetProps);\n }\n
 if (!hasBinding) {\n this._bindingParser.parseLiteralAttr(name, value, srcSpan, targetMatchableAttrs,\n
targetProps);\n }\n return hasBinding;\n };\n /**\n * @param {?} attrName\n * @return {?} \n
*/\n TemplateParseVisitor.prototype._normalizeAttributeName = /**\n * @param {?} attrName\n * @return\n
{?}\n */\n function (attrName) {\n return /^data-/.test(attrName) ? attrName.substring(5) : attrName;\n
};\n /**\n * @param {?} identifier\n * @param {?} value\n * @param {?} sourceSpan\n * @param {?}\n
targetVars\n * @return {?} \n
*/\n TemplateParseVisitor.prototype._parseVariable = /**\n * @param {?} identifier\n * @param {?} value\n * @param {?} sourceSpan\n * @param {?} targetVars\n * @return\n
{?}\n */\n function (identifier, value, sourceSpan, targetVars) {\n if (identifier.indexOf('-') > -1) {\n
this._reportError("\\\\\\" is not allowed in variable names", sourceSpan);\n }\n targetVars.push(new\n
VariableAst(identifier, value, sourceSpan));\n };\n /**\n * @param {?} identifier\n * @param {?} value\n
*/\n * @param {?} sourceSpan\n * @param {?} targetRefs\n * @return {?} \n
*/\n TemplateParseVisitor.prototype._parseReference = /**\n * @param {?} identifier\n * @param {?} value\n *\n
@param {?} sourceSpan\n * @param {?} targetRefs\n * @return {?} \n
*/\n function (identifier, value,\n
sourceSpan, targetRefs) {\n if (identifier.indexOf('-') > -1) {\n this._reportError("\\\\\\" is not allowed\n
in reference names", sourceSpan);\n }\n targetRefs.push(new ElementOrDirectiveRef(identifier, value,\n
sourceSpan));\n };\n /**\n * @param {?} name\n * @param {?} expression\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetEvents\n * @return {?} \n
*/\n TemplateParseVisitor.prototype._parseAssignmentEvent = /**\n * @param {?} name\n * @param {?} expression\n
*/\n * @param {?} sourceSpan\n * @param {?} targetMatchableAttrs\n * @param {?} targetEvents\n
*/\n * @return {?} \n
*/\n function (name, expression, sourceSpan, targetMatchableAttrs,\n
targetEvents) {\n this._bindingParser.parseEvent(name + "Change", expression + "=$event", sourceSpan,\n
targetMatchableAttrs, targetEvents);\n };\n /**\n * @param {?} selectorMatcher\n * @param {?} elementCssSelector\n * @return {?} \n
*/\n TemplateParseVisitor.prototype._parseDirectives = /**\n * @param {?} selectorMatcher\n * @param {?} elementCssSelector\n * @return {?} \n
*/\n function\n
(selectorMatcher, elementCssSelector) {\n var _this = this;\n // Need to sort the directives so that we get\n
consistent results throughout,\n // as selectorMatcher uses Maps inside.\n // Also deduplicate directives as\n
they might match more than one time!\n var /** @type {?} */ directives = new\n
Array(this.directivesIndex.size);\n // Whether any directive selector matches on the element name\n var /**\n
@type {?} */ matchElement = false;\n selectorMatcher.match(elementCssSelector, function (selector, directive)\n
{\n directives[/** @type {?} */ (_this.directivesIndex.get(directive))] = directive;\n matchElement =\n
matchElement || selector.hasElementSelector();\n });\n return {\n directives: directives.filter(function\n
(dir) { return !!dir; }),\n matchElement: matchElement,\n };\n };\n /**\n * @param {?} isTemplateElement\n * @param {?} elementName\n * @param {?} directives\n * @param {?} props\n *\n
@param {?} elementOrDirectiveRefs\n * @param {?} elementSourceSpan\n * @param {?} targetReferences\n
*/\n * @param {?} targetBoundDirectivePropNames\n * @return {?} \n
*/\n TemplateParseVisitor.prototype._createDirectiveAsts = /**\n * @param {?} isTemplateElement\n * @param\n
{?} elementName\n * @param {?} directives\n * @param {?} props\n * @param {?} elementOrDirectiveRefs\n
*/\n * @param {?} elementSourceSpan\n * @param {?} targetReferences\n *\n
@param {?} targetBoundDirectivePropNames\n * @return {?} \n
*/\n function (isTemplateElement,\n
elementName, directives, props, elementOrDirectiveRefs, elementSourceSpan, targetReferences,\n

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targetBoundDirectivePropNames) {\n var _this = this;\n var /** @type {?} */ matchedReferences = new
Set();\n var /** @type {?} */ component = /** @type {?} */ ((null));\n var /** @type {?} */ directiveAsts
= directives.map(function (directive) {\n var /** @type {?} */ sourceSpan = new
ParseSourceSpan(elementSourceSpan.start, elementSourceSpan.end, "Directive \" +
identifierName(directive.type));\n if (directive.isComponent) {\n component = directive;\n
}\n var /** @type {?} */ directiveProperties = [];\n var /** @type {?} */ hostProperties = /** @type
{?} */ ((_this._bindingParser.createDirectiveHostPropertyAsts(directive, elementName, sourceSpan));\n //
Note: We need to check the host properties here as well,\n // as we don't know the element name in the
DirectiveWrapperCompiler yet.\n hostProperties = _this._checkPropertiesInSchema(elementName,
hostProperties);\n var /** @type {?} */ hostEvents = /** @type {?} */
((_this._bindingParser.createDirectiveHostEventAsts(directive, sourceSpan));\n _this._createDirectivePropertyAsts(directive.inputs, props, directiveProperties, targetBoundDirectivePropNames);\n
 elementOrDirectiveRefs.forEach(function (elOrDirRef) {\n if ((elOrDirRef.value.length === 0 &&
directive.isComponent) ||\n (elOrDirRef.isReferenceToDirective(directive))) {\n
targetReferences.push(new ReferenceAst(elOrDirRef.name, createTokenForReference(directive.type.reference),
elOrDirRef.sourceSpan));\n matchedReferences.add(elOrDirRef.name);\n }\n });\n
 var /** @type {?} */ contentQueryStartId = _this.contentQueryStartId;\n _this.contentQueryStartId +=
directive.queries.length;\n return new DirectiveAst(directive, directiveProperties, hostProperties, hostEvents,
contentQueryStartId, sourceSpan);\n });\n elementOrDirectiveRefs.forEach(function (elOrDirRef) {\n
if (elOrDirRef.value.length > 0) {\n if (!matchedReferences.has(elOrDirRef.name)) {\n
_this._reportError("There is no directive with \"exportAs\" set to \"\" + elOrDirRef.value + "\"",
elOrDirRef.sourceSpan);\n }\n } else if (!component) {\n var /** @type {?} */
refToken = /** @type {?} */ ((null));\n if (isTemplateElement) {\n refToken =
createTokenForExternalReference(_this.reflector, Identifiers.TemplateRef);\n }\n
targetReferences.push(new ReferenceAst(elOrDirRef.name, refToken, elOrDirRef.sourceSpan));\n }\n
});\n return directiveAsts;\n };\n /**\n * @param {?} directiveProperties\n * @param {?}
boundProps\n * @param {?} targetBoundDirectiveProps\n * @param {?} targetBoundDirectivePropNames\n
 * @return {?}\n */\n TemplateParseVisitor.prototype._createDirectivePropertyAsts = /**\n * @param {?}
directiveProperties\n * @param {?} boundProps\n * @param {?} targetBoundDirectiveProps\n * @param
{?} targetBoundDirectivePropNames\n * @return {?}\n */\n function (directiveProperties, boundProps,
targetBoundDirectiveProps, targetBoundDirectivePropNames) {\n if (directiveProperties) {\n var /**
@type {?} */ boundPropsByName_1 = new Map();\n boundProps.forEach(function (boundProp) {\n
var /** @type {?} */ prevValue = boundPropsByName_1.get(boundProp.name);\n if (!prevValue ||
prevValue.isLiteral) {\n // give [a]=\"b\" a higher precedence than a=\"b\" on the same element\n
 // give [a]=\"b\" a higher precedence than a=\"b\" on the same element\n
boundPropsByName_1.set(boundProp.name, boundProp);\n }\n });\n
Object.keys(directiveProperties).forEach(function (dirProp) {\n var /** @type {?} */ elProp =
directiveProperties[dirProp];\n var /** @type {?} */ boundProp = boundPropsByName_1.get(elProp);\n
 // Bindings are optional, so this binding only needs to be set up if an expression is given.\n if
(boundProp) {\n targetBoundDirectivePropNames.add(boundProp.name);\n if
(!isEmptyExpression(boundProp.expression)) {\n targetBoundDirectiveProps.push(new
BoundDirectivePropertyAst(dirProp, boundProp.name, boundProp.expression, boundProp.sourceSpan));\n }\n
 }\n });\n };\n /**\n * @param {?} elementName\n * @param {?} props\n *
@param {?} boundDirectivePropNames\n * @return {?}\n */\n function (elementName,
props, boundDirectivePropNames) {\n var _this = this;\n var /** @type {?} */ boundElementProps = [];\n
 props.forEach(function (prop) {\n if (!prop.isLiteral && !boundDirectivePropNames.has(prop.name)) {\n

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 boundElementProps.push(_this._bindingParser.createElementPropertyAst(elementName, prop));\n
 });\n
 return this._checkPropertiesInSchema(elementName, boundElementProps);\n
};\n
/**\n
 * @param {?} directives\n
 * @return {?}\n
 */\n
TemplateParseVisitor.prototype._findComponentDirectives =\n
/**\n
 * @param {?} directives\n
 * @return {?}\n
 */\n
function (directives) {\n
 return\n
 directives.filter(function (directive) { return directive.directive.isComponent; });\n
};\n
/**\n
 * @param {?} directives\n
 * @return {?}\n
 */\n
TemplateParseVisitor.prototype._findComponentDirectiveNames = /**\n
 * @param {?} directives\n
 * @return {?}\n
 */\n
function (directives) {\n
 return\n
 this._findComponentDirectives(directives)\n
 .map(function (directive) { return\n
 ((identifierName(directive.directive.type))); });\n
};\n
/**\n
 * @param {?} directives\n
 * @param {?} sourceSpan\n
 * @return {?}\n
 */\n
TemplateParseVisitor.prototype._assertOnlyOneComponent = /**\n
 * @param {?} directives\n
 * @param {?} sourceSpan\n
 * @return {?}\n
 */\n
function (directives,\n
 sourceSpan) {\n
 var /** @type {?} */ componentTypeNames =\n
 this._findComponentDirectiveNames(directives);\n
 if (componentTypeNames.length > 1) {\n
 this._reportError("More than one component matched on this element.\\n" +\n
 "Make sure that only one\n
 component's selector can match a given element.\\n" +\n
 ("Conflicting components: '" +\n
 componentTypeNames.join(','), sourceSpan);\n
 }\n
};\n
/**\n
 * Make sure that non-angular tags conform\n
to the schemas.\n
 * Note: An element is considered an angular tag when at least one directive selector\n
matches the\n
 * tag name.\n
 * @param {?} matchElement Whether any directive has matched on the tag\n
name\n
 * @param {?} element the html element\n
 * @return {?}\n
 */\n
TemplateParseVisitor.prototype._assertElementExists = /**\n
 * Make sure that non-angular tags conform to the\n
schemas.\n
 * Note: An element is considered an angular tag when at least one directive selector matches\n
the\n
 * tag name.\n
 * @param {?} matchElement Whether any directive has matched on the tag name\n
 * @param {?} element the html element\n
 * @return {?}\n
 */\n
function (matchElement, element) {\n
 var /** @type {?} */ elName = element.name.replace(/^(?:xhtml:\/, ");\n
 if (!matchElement &&\n
 !this._schemaRegistry.hasElement(elName, this._schemas)) {\n
 var /** @type {?} */ errorMsg = "" +\n
 elName + "' is not a known element:\\n";\n
 errorMsg +=\n
 "1. If '" + elName + "' is an Angular\n
 component, then verify that it is part of this module.\\n";\n
 if (elName.indexOf('-') > -1) {\n
 errorMsg +=\n
 "2. If '" + elName + "' is a Web Component then add\n
 'CUSTOM_ELEMENTS_SCHEMA' to the '@NgModule.schemas' of this component to suppress this message.\\n";\n
 }\n
 else {\n
 errorMsg +=\n
 "2. To allow any element add\n
 'NO_ERRORS_SCHEMA' to the '@NgModule.schemas' of this component.\\n";\n
 }\n
 }\n
 this._reportError(errorMsg, /** @type {?} */ ((element.sourceSpan));\n
 });\n
};\n
/**\n
 * @param {?} directives\n
 * @param {?} elementProps\n
 * @param {?} sourceSpan\n
 * @return {?}\n
 */\n
TemplateParseVisitor.prototype._assertNoComponentsNorElementBindingsOnTemplate = /**\n
 * @param {?} directives\n
 * @param {?} elementProps\n
 * @param {?} sourceSpan\n
 * @return {?}\n
 */\n
function\n
(directives, elementProps, sourceSpan) {\n
 var _this = this;\n
 var /** @type {?} */ componentTypeNames\n
 = this._findComponentDirectiveNames(directives);\n
 if (componentTypeNames.length > 0) {\n
 this._reportError("Components on an embedded template: '" + componentTypeNames.join(',')\n
 ");\n
 }\n
 elementProps.forEach(function (prop) {\n
 _this._reportError("Property binding '" + prop.name + "'\n
 not used by any directive on an embedded template. Make sure that the property name is spelled correctly and all\n
 directives are listed in the '\\n@NgModule.declarations\\n'.", sourceSpan);\n
 });\n
};\n
/**\n
 * @param\n
 * {?} directives\n
 * @param {?} events\n
 * @return {?}\n
 */\n
TemplateParseVisitor.prototype._assertAllEventsPublishedByDirectives = /**\n
 * @param {?} directives\n
 * @param {?} events\n
 * @return {?}\n
 */\n
function (directives, events) {\n
 var _this = this;\n
 var /**\n
 * @type {?} */ allDirectiveEvents = new Set();\n
 directives.forEach(function (directive) {\n
 Object.keys(directive.directive.outputs).forEach(function (k) {\n
 var /** @type {?} */ eventName =\n
 directive.directive.outputs[k];\n
 allDirectiveEvents.add(eventName);\n
 });\n
 });\n
 events.forEach(function (event) {\n
 if (event.target != null || !allDirectiveEvents.has(event.name)) {\n

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 _this._reportError("\Event binding \" + event.fullName + \" not emitted by any directive on an embedded template.
Make sure that the event name is spelled correctly and all directives are listed in the
\\"\@NgModule.declarations\|\".", event.sourceSpan);\n }\n });\n };\n /**\n * @param {?}
elementName\n * @param {?} boundProps\n * @return {?}\n */\n
TemplateParseVisitor.prototype._checkPropertiesInSchema = /**\n * @param {?} elementName\n * @param
{?} boundProps\n * @return {?}\n */\n function (elementName, boundProps) {\n var _this = this;\n
// Note: We can't filter out empty expressions before this method,\n // as we still want to validate them!\n
return boundProps.filter(function (boundProp) {\n if (boundProp.type === PropertyBindingType.Property
&&\n !_this._schemaRegistry.hasProperty(elementName, boundProp.name, _this._schemas)) {\n
var /** @type {?} */ errorMsg = \"Can't bind to \" + boundProp.name + \" since it isn't a known property of \" +
elementName + \".\";\n if (elementName.startsWith('ng-')) {\n errorMsg +=\n
\`\n1. If \" + boundProp.name + \" is an Angular directive, then add 'CommonModule' to the '@NgModule.imports'
of this component.\` +\n \`\n2. To allow any property add 'NO_ERRORS_SCHEMA' to the
'@NgModule.schemas' of this component.\";\n }\n else if (elementName.indexOf('-') > -1) {\n
errorMsg +=\n \`\n1. If \" + elementName + \" is an Angular component and it has \" +
boundProp.name + \" input, then verify that it is part of this module.\` +\n \`\n2. If \" +
elementName + \" is a Web Component then add 'CUSTOM_ELEMENTS_SCHEMA' to the
'@NgModule.schemas' of this component to suppress this message.\` +\n \`\n3. To allow any
property add 'NO_ERRORS_SCHEMA' to the '@NgModule.schemas' of this component.\`; \n }\n
_this._reportError(errorMsg, boundProp.sourceSpan);\n }\n return
!isEmptyExpression(boundProp.value);\n });\n };\n /**\n * @param {?} message\n * @param {?}
sourceSpan\n * @param {?=} level\n * @return {?}\n */\n TemplateParseVisitor.prototype._reportError =
/**\n * @param {?} message\n * @param {?} sourceSpan\n * @param {?=} level\n * @return {?}\n
*/\n function (message, sourceSpan, level) {\n if (level === void 0) { level = ParseErrorLevel.ERROR; }\n
this._targetErrors.push(new ParseError(sourceSpan, message, level));\n };\n return
TemplateParseVisitor;\n });\n nvar NonBindableVisitor = /** @class */ (function () {\n function
NonBindableVisitor() {\n }\n /**\n * @param {?} ast\n * @param {?} parent\n * @return {?}\n */\n NonBindableVisitor.prototype.visitElement = /**\n * @param {?} ast\n * @param {?} parent\n * @return
{?}\n */\n function (ast, parent) {\n var /** @type {?} */ preparedElement = prepareElement(ast);\n
if (preparedElement.type === PreparedElementType.SCRIPT ||\n preparedElement.type ===
PreparedElementType.STYLE ||\n preparedElement.type === PreparedElementType.STYLESHEET) {\n
// Skipping <script> for security reasons\n // Skipping <style> and stylesheets as we already processed
them\n // in the StyleCompiler\n return null;\n }\n var /** @type {?} */ attrNameAndValues
= ast.attrs.map(function (attr) { return [attr.name, attr.value]; });\n var /** @type {?} */ selector =
createElementCssSelector(ast.name, attrNameAndValues);\n var /** @type {?} */ ngContentIndex =
parent.findNgContentIndex(selector);\n var /** @type {?} */ children = visitAll(this, ast.children,
EMPTY_ELEMENT_CONTEXT);\n return new ElementAst(ast.name, visitAll(this, ast.attrs, [], [], [], [],
false, [], children, ngContentIndex, ast.sourceSpan, ast.endSourceSpan);\n };\n /**\n * @param {?}
comment\n * @param {?} context\n * @return {?}\n */\n NonBindableVisitor.prototype.visitComment =
/**\n * @param {?} comment\n * @param {?} context\n * @return {?}\n */\n function (comment,
context) { return null; };\n /**\n * @param {?} attribute\n * @param {?} context\n * @return {?}\n */\n NonBindableVisitor.prototype.visitAttribute = /**\n * @param {?} attribute\n * @param {?} context\n *
@return {?}\n */\n function (attribute, context) {\n return new AttrAst(attribute.name, attribute.value,
attribute.sourceSpan);\n };\n /**\n * @param {?} text\n * @param {?} parent\n * @return
{?}\n */\n NonBindableVisitor.prototype.visitText = /**\n * @param {?} text\n * @param {?} parent\n * @return
{?}\n */\n function (text, parent) {\n var /** @type {?} */ ngContentIndex = /** @type {?} */
((parent.findNgContentIndex(TEXT_CSS_SELECTOR)));\n return new TextAst(text.value, ngContentIndex,
/** @type {?} */ ((text.sourceSpan)));\n };\n /**\n * @param {?} expansion\n * @param {?} context\n *

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@return {?} \n * \n NonBindableVisitor.prototype.visitExpansion = /** \n * @param {?} expansion \n *
@param {?} context \n * @return {?} \n * \n function (expansion, context) { return expansion; }; \n /** \n
* @param {?} expansionCase \n * @param {?} context \n * @return {?} \n * \n
NonBindableVisitor.prototype.visitExpansionCase = /** \n * @param {?} expansionCase \n * @param {?}
context \n * @return {?} \n * \n function (expansionCase, context) { return expansionCase; }; \n return
NonBindableVisitor; \n }()); \n /** \n * A reference to an element or directive in a template. E.g., the reference in this
template: \n * \n * <div #myMenu="coolMenu"> \n * \n * would be {name: 'myMenu', value: 'coolMenu',
sourceSpan: ...} \n * \n var ElementOrDirectiveRef = /** @class */ (function () \n function
ElementOrDirectiveRef(name, value, sourceSpan) { \n this.name = name; \n this.value = value; \n
this.sourceSpan = sourceSpan; \n } \n /** Gets whether this is a reference to the given directive. \n * \n /** \n *
Gets whether this is a reference to the given directive. \n * @param {?} directive \n * @return {?} \n * \n
ElementOrDirectiveRef.prototype.isReferenceToDirective = /** \n * Gets whether this is a reference to the given
directive. \n * @param {?} directive \n * @return {?} \n * \n function (directive) { \n return
splitExportAs(directive.exportAs).indexOf(this.value) !== -1; \n } \n return
ElementOrDirectiveRef; \n }()); \n /** \n * Splits a raw, potentially comma-delimited `exportAs` value into an array of
names. \n * @param {?} exportAs \n * @return {?} \n * \n function splitExportAs(exportAs) { \n return exportAs ?
exportAs.split(',') .map(function (e) { return e.trim(); }) : []; \n } \n /** \n * @param {?} classAttrValue \n * @return
 {?} \n * \n function splitClasses(classAttrValue) { \n return classAttrValue.trim().split(/\s+/g); \n } \n var
ElementContext = /** @class */ (function () \n function ElementContext(isTemplateElement,
_ngContentIndexMatcher, _wildcardNgContentIndex, providerContext) { \n this.isTemplateElement =
isTemplateElement; \n this._ngContentIndexMatcher = _ngContentIndexMatcher; \n
this._wildcardNgContentIndex = _wildcardNgContentIndex; \n this.providerContext = providerContext; \n } \n
/** \n * @param {?} isTemplateElement \n * @param {?} directives \n * @param {?} providerContext \n *
@return {?} \n * \n ElementContext.create = /** \n * @param {?} isTemplateElement \n * @param {?}
directives \n * @param {?} providerContext \n * @return {?} \n * \n function (isTemplateElement,
directives, providerContext) { \n var /** @type {?} */ matcher = new SelectorMatcher(); \n var /** @type
 {?} */ wildcardNgContentIndex = /** @type {?} */ ((null)); \n var /** @type {?} */ component =
directives.find(function (directive) { return directive.directive.isComponent; }); \n if (component) { \n var
/** @type {?} */ ngContentSelectors = /** @type {?} */ ((component.directive.template)).ngContentSelectors; \n
for (var /** @type {?} */ i = 0; i < ngContentSelectors.length; i++) { \n var /** @type {?} */ selector =
ngContentSelectors[i]; \n if (selector === '*') { \n wildcardNgContentIndex = i; \n } \n
else { \n matcher.addSelectable(CssSelector.parse(ngContentSelectors[i]), i); \n } \n
} \n } \n return new ElementContext(isTemplateElement, matcher, wildcardNgContentIndex,
providerContext); \n }; \n /** \n * @param {?} selector \n * @return {?} \n * \n
ElementContext.prototype.findNgContentIndex = /** \n * @param {?} selector \n * @return {?} \n * \n
function (selector) { \n var /** @type {?} */ ngContentIndices = []; \n
this._ngContentIndexMatcher.match(selector, function (selector, ngContentIndex) {
ngContentIndices.push(ngContentIndex); }); \n ngContentIndices.sort(); \n if (this._wildcardNgContentIndex
!== null) { \n ngContentIndices.push(this._wildcardNgContentIndex); \n } \n return
ngContentIndices.length > 0 ? ngContentIndices[0] : null; \n }; \n return ElementContext; \n }()); \n /** \n * @param
 {?} elementName \n * @param {?} attributes \n * @return {?} \n * \n function
createElementCssSelector(elementName, attributes) { \n var /** @type {?} */ cssSelector = new CssSelector(); \n
var /** @type {?} */ elNameNoNs = splitNsName(elementName)[1]; \n cssSelector.setElement(elNameNoNs); \n
for (var /** @type {?} */ i = 0; i < attributes.length; i++) { \n var /** @type {?} */ attrName = attributes[i][0]; \n
var /** @type {?} */ attrNameNoNs = splitNsName(attrName)[1]; \n var /** @type {?} */ attrValue =
attributes[i][1]; \n cssSelector.addAttribute(attrNameNoNs, attrValue); \n if (attrName.toLowerCase() ===
CLASS_ATTR) { \n var /** @type {?} */ classes = splitClasses(attrValue); \n classes.forEach(function
(className) { return cssSelector.addClassName(className); }); \n } \n } \n return cssSelector; \n } \n var

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EMPTY_ELEMENT_CONTEXT = new ElementContext(true, new SelectorMatcher(), null, null);\nvar
NON_BINDABLE_VISITOR = new NonBindableVisitor();\n/**\n * @param {?} node\n * @return {?}\n */\nfunction _isEmptyTextNode(node) {\n return node instanceof Text && node.value.trim().length ==
0;\n}\n/**\n * @template T\n * @param {?} items\n * @return {?}\n */\nfunction
removeSummaryDuplicates(items) {\n var /** @type {?} */ map = new Map();\n items.forEach(function (item)
{\n if (!map.get(item.type.reference)) {\n map.set(item.type.reference, item);\n }\n });\n return
Array.from(map.values());\n}\n/**\n * @param {?} ast\n * @return {?}\n */\nfunction isEmptyExpression(ast) {\n
if (ast instanceof ASTWithSource) {\n ast = ast.ast;\n }\n return ast instanceof EmptyExpr;\n}\n/**\n *
@param {?} el\n * @param {?} enableLegacyTemplate\n * @param {?} reportDeprecation\n * @return {?}\n */\nfunction
isTemplate(el, enableLegacyTemplate, reportDeprecation) {\n if (isNgTemplate(el.name))\n return true;\n var /** @type {?} */ tagNoNs = splitNsName(el.name)[1];\n // `<template>` is HTML and case
insensitive\n if (tagNoNs.toLowerCase() === TEMPLATE_ELEMENT) {\n if (enableLegacyTemplate &&
tagNoNs.toLowerCase() === TEMPLATE_ELEMENT) {\n
reportDeprecation(TEMPLATE_ELEMENT_DEPRECATION_WARNING, /** @type {?} */ ((el.sourceSpan)));\n
return true;\n }\n }\n return false;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress
{checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n */\n\n * Use of
this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n */\n\nvar EventHandlerVars = /** @class */ (function () {\n function
EventHandlerVars() {\n }\n EventHandlerVars.event = variable('$event');\n return
EventHandlerVars;\n }());\n\n/**\n * @record\n */\n\nvar ConvertActionBindingResult = /** @class */ (function ()
{\n function ConvertActionBindingResult(stmts, allowDefault) {\n this.stmts = stmts;\n this.allowDefault
= allowDefault;\n }\n return ConvertActionBindingResult;\n }());\n\n/**\n * Converts the given expression AST
into an executable output AST, assuming the expression is\n * used in an action binding (e.g. an event handler).\n *
@param {?} localResolver\n * @param {?} implicitReceiver\n * @param {?} action\n * @param {?} bindingId\n *
@return {?}\n */\nfunction convertActionBinding(localResolver, implicitReceiver, action, bindingId) {\n if
(!localResolver) {\n localResolver = new DefaultLocalResolver();\n }\n var /** @type {?} */
actionWithoutBuiltins = convertPropertyBindingBuiltins({\n createLiteralArrayConverter: function (argCount)
{\n // Note: no caching for literal arrays in actions.\n return function (args) { return literalArr(args);
};\n },\n createLiteralMapConverter: function (keys) {\n // Note: no caching for literal maps in
actions.\n return function (values) {\n var /** @type {?} */ entries = keys.map(function (k, i) {\n
return ({\n key: k.key,\n value: values[i],\n quoted: k.quoted,\n
});\n });\n return literalMap(entries);\n });\n },\n createPipeConverter:
function (name) {\n throw new Error(`Illegal State: Actions are not allowed to contain pipes. Pipe: ` +
name);\n } }, action);\n var /** @type {?} */ visitor = new _AstToIrVisitor(localResolver,
implicitReceiver, bindingId);\n var /** @type {?} */ actionStmts = [];\n flattenStatements(actionWithoutBuiltins.visit(visitor, _Mode.Statement), actionStmts);\n
prependTemporaryDecls(visitor.temporaryCount, bindingId, actionStmts);\n var /** @type {?} */ lastIndex =
actionStmts.length - 1;\n var /** @type {?} */ preventDefaultVar = /** @type {?} */ ((null));\n if (lastIndex >=
0) {\n var /** @type {?} */ lastStatement = actionStmts[lastIndex];\n var /** @type {?} */ returnExpr =
convertStmtIntoExpression(lastStatement);\n if (returnExpr) {\n // Note: We need to cast the result of the
method call to dynamic,\n // as it might be a void method!\n preventDefaultVar =
createPreventDefaultVar(bindingId);\n actionStmts[lastIndex] =\n preventDefaultVar.set(returnExpr.cast(DYNAMIC_TYPE).notIdentical(literal(false)))\n .toDeclStmt(null, [StmtModifier.Final]);\n }\n }\n return new ConvertActionBindingResult(actionStmts,
preventDefaultVar);\n}\n\n/**\n * @record\n */\n\n/**\n * @record\n */\n\n/**\n * @param {?} converterFactory\n *
@param {?} ast\n * @return {?}\n */\nfunction convertPropertyBindingBuiltins(converterFactory, ast) {\n return
convertBuiltins(converterFactory, ast);\n}\n\nvar ConvertPropertyBindingResult = /** @class */ (function () {\n
function ConvertPropertyBindingResult(stmts, currValExpr) {\n this.stmts = stmts;\n this.currValExpr =

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currValExpr;\n }\n return ConvertPropertyBindingResult;\n}());\n/** @enum {number} *\nvar BindingForm =
{\n // The general form of binding expression, supports all expressions.\n General: 0,\n // Try to generate a
simple binding (no temporaries or statements)\n // otherwise generate a general binding\n TrySimple:
1,\n};\nBindingForm[BindingForm.General] = \"General\";\nBindingForm[BindingForm.TrySimple] =
\"TrySimple\";\n/**\n * Converts the given expression AST into an executable output AST, assuming the
expression\n * is used in property binding. The expression has to be preprocessed via\n *
`convertPropertyBindingBuiltins`.\n * @param {?} localResolver\n * @param {?} implicitReceiver\n * @param
 {?} expressionWithoutBuiltins\n * @param {?} bindingId\n * @param {?} form\n * @return {?} *\n *^function
convertPropertyBinding(localResolver, implicitReceiver, expressionWithoutBuiltins, bindingId, form) {\n if
(!localResolver) {\n localResolver = new DefaultLocalResolver();\n }\n var /** @type {?} */ currValExpr =
createCurrValueExpr(bindingId);\n var /** @type {?} */ stmts = [];\n var /** @type {?} */ visitor = new
_AstToIrVisitor(localResolver, implicitReceiver, bindingId);\n var /** @type {?} */ outputExpr =
expressionWithoutBuiltins.visit(visitor, _Mode.Expression);\n if (visitor.temporaryCount) {\n for (var /**
@type {?} */ i = 0; i < visitor.temporaryCount; i++) {\n stmts.push(temporaryDeclaration(bindingId, i));\n
 }\n }\n else if (form == BindingForm.TrySimple) {\n return new ConvertPropertyBindingResult([],
outputExpr);\n }\n stmts.push(currValExpr.set(outputExpr).toDeclStmt(DYNAMIC_TYPE,
[StmtModifier.Final]));\n return new ConvertPropertyBindingResult(stmts, currValExpr);\n}\n/**\n * @param
 {?} converterFactory\n * @param {?} ast\n * @return {?} *\n *^function convertBuiltins(converterFactory, ast) {\n
var /** @type {?} */ visitor = new _BuiltinAstConverter(converterFactory);\n return ast.visit(visitor);\n}\n/**\n *
@param {?} bindingId\n * @param {?} temporaryNumber\n * @return {?} *\n *^function
temporaryName(bindingId, temporaryNumber) {\n return \"tmp_\" + bindingId + \"_\" +
temporaryNumber;\n}\n/**\n * @param {?} bindingId\n * @param {?} temporaryNumber\n * @return {?} *\n
*^function temporaryDeclaration(bindingId, temporaryNumber) {\n return new
DeclareVarStmt(temporaryName(bindingId, temporaryNumber), NULL_EXPR);\n}\n/**\n * @param {?}
temporaryCount\n * @param {?} bindingId\n * @param {?} statements\n * @return {?} *\n *^function
prependTemporaryDecls(temporaryCount, bindingId, statements) {\n for (var /** @type {?} */ i =
temporaryCount - 1; i >= 0; i--) {\n statements.unshift(temporaryDeclaration(bindingId, i));\n }\n}\n/**
 * @enum {number} *\nvar _Mode = {\n Statement: 0,\n Expression: 1,\n};\n_Mode[_Mode.Statement] =
\"Statement\";\n_Mode[_Mode.Expression] = \"Expression\";\n/**\n * @param {?} mode\n * @param {?} ast\n *
@return {?} *\n *^function ensureStatementMode(mode, ast) {\n if (mode !== _Mode.Statement) {\n throw
new Error(\"Expected a statement, but saw \" + ast);\n }\n}\n/**\n * @param {?} mode\n * @param {?} ast\n *
@return {?} *\n *^function ensureExpressionMode(mode, ast) {\n if (mode !== _Mode.Expression) {\n throw
new Error(\"Expected an expression, but saw \" + ast);\n }\n}\n/**\n * @param {?} mode\n * @param {?} expr\n
 * @return {?} *\n *^function convertToStatementIfNeeded(mode, expr) {\n if (mode === _Mode.Statement) {\n
return expr.toStmt();\n }\n else {\n return expr;\n }\n}\nvar _BuiltinAstConverter = /** @class */
(function (_super) {\n __extends(_BuiltinAstConverter, _super);\n function
_BuiltinAstConverter(_converterFactory) {\n var _this = _super.call(this) || this;\n _this._converterFactory
= _converterFactory;\n return _this;\n }\n /**\n * @param {?} ast\n * @param {?} context\n *
@return {?} *\n *^function _BuiltinAstConverter.prototype.visitPipe = /**\n * @param {?} ast\n * @param {?}
context\n * @return {?} *\n *^function (ast, context) {\n var _this = this;\n var /** @type {?} */
args = [ast.exp].concat(ast.args).map(function (ast) { return ast.visit(_this, context); });\n return new
BuiltinFunctionCall(ast.span, args, this._converterFactory.createPipeConverter(ast.name, args.length));\n };\n
 /**\n * @param {?} ast\n * @param {?} context\n * @return {?} *\n *^function
_BuiltinAstConverter.prototype.visitLiteralArray = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?} *\n *^function (ast, context) {\n var _this = this;\n var /** @type {?} */ args =
ast.expressions.map(function (ast) { return ast.visit(_this, context); });\n return new
BuiltinFunctionCall(ast.span, args, this._converterFactory.createLiteralArrayConverter(ast.expressions.length));\n
 };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?} *\n *^function

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_BuiltinAstConverter.prototype.visitLiteralMap = /**\n
 * @param {?} ast\n
 * @param {?} context\n
 * @return {?}\n
 */\n
function (ast, context) {\n
 var _this = this;\n
 var /** @type {?} */ args =
 ast.values.map(function (ast) { return ast.visit(_this, context); });\n
 return new BuiltinFunctionCall(ast.span,
 args, this._converterFactory.createLiteralMapConverter(ast.keys));\n
};\n
return
_BuiltinAstConverter;\n
})(AstTransformer);\n
var _AstToIrVisitor = /** @class */ (function () {\n
function
_AstToIrVisitor(_localResolver, _implicitReceiver, bindingId) {\n
 this._localResolver = _localResolver;\n
 this._implicitReceiver = _implicitReceiver;\n
 this.bindingId = bindingId;\n
 this._nodeMap = new Map();\n
 this._resultMap = new Map();\n
 this._currentTemporary = 0;\n
 this._temporaryCount = 0;\n
}
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitBinary =
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
function (ast, mode) {\n
 var
 /** @type {?} */ op;\n
 switch (ast.operation) {\n
 case '+':\n
 op = BinaryOperator.Plus;\n
 break;\n
 case '-':\n
 op = BinaryOperator.Minus;\n
 break;\n
 case '*':\n
 op =
 BinaryOperator.Multiply;\n
 break;\n
 case '/':\n
 op = BinaryOperator.Divide;\n
 break;\n
 case '%':\n
 op = BinaryOperator.Modulo;\n
 break;\n
 case '&&':\n
 op = BinaryOperator.And;\n
 break;\n
 case '||':\n
 op = BinaryOperator.Or;\n
 break;\n
 case '==':\n
 op = BinaryOperator.Equals;\n
 break;\n
 case '!=':\n
 op
 = BinaryOperator.NotEquals;\n
 break;\n
 case '===':\n
 op = BinaryOperator.Identical;\n
 break;\n
 case '!==':\n
 op = BinaryOperator.NotIdentical;\n
 break;\n
 case '<':\n
 op = BinaryOperator.Lower;\n
 break;\n
 case '>':\n
 op = BinaryOperator.Bigger;\n
 break;\n
 case '<=':\n
 op = BinaryOperator.LowerEquals;\n
 break;\n
 case
 '>=':\n
 op = BinaryOperator.BiggerEquals;\n
 break;\n
 default:\n
 throw new
 Error("\nUnsupported operation\n" + ast.operation);\n
 }\n
 return convertToStatementIfNeeded(mode, new
 BinaryOperatorExpr(op, this._visit(ast.left, _Mode.Expression), this._visit(ast.right, _Mode.Expression));\n
};\n
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitChain = /**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
function (ast, mode) {\n
 ensureStatementMode(mode, ast);\n
 return this.visitAll(ast.expressions,
 mode);\n
};\n
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitConditional = /**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return
 {?}\n
 */\n
function (ast, mode) {\n
 var /** @type {?} */ value = this._visit(ast.condition,
 _Mode.Expression);\n
 return convertToStatementIfNeeded(mode, value.conditional(this._visit(ast.trueExp,
 _Mode.Expression), this._visit(ast.falseExp, _Mode.Expression));\n
};\n
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitPipe = /**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
function (ast, mode) {\n
 throw new Error("\nIllegal state:\n
Pipes should have been converted into functions. Pipe:\n" + ast.name);\n
};\n
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitFunctionCall = /**\n
 * @param
 {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
function (ast, mode) {\n
 var /** @type {?} */
 convertedArgs = this.visitAll(ast.args, _Mode.Expression);\n
 var /** @type {?} */ fnResult;\n
 if (ast
 instanceof BuiltinFunctionCall) {\n
 fnResult = ast.converter(convertedArgs);\n
 }\n
 else {\n
 fnResult = this._visit(/** @type {?} */ ((ast.target)), _Mode.Expression).callFn(convertedArgs);\n
 }\n
 return convertToStatementIfNeeded(mode, fnResult);\n
};\n
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitImplicitReceiver = /**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
function (ast, mode) {\n
 ensureExpressionMode(mode,
 ast);\n
 return this._implicitReceiver;\n
};\n
/**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
_AstToIrVisitor.prototype.visitInterpolation = /**\n
 * @param {?} ast\n
 * @param {?} mode\n
 * @return {?}\n
 */\n
function (ast, mode) {\n
 ensureExpressionMode(mode, ast);\n
 var /**
 @type {?} */ args = [literal(ast.expressions.length)];\n
 for (var /** @type {?} */ i = 0; i < ast.strings.length - 1;
 i++) {\n
 args.push(literal(ast.strings[i]));\n
 args.push(this._visit(ast.expressions[i],
 _Mode.Expression));\n
 }\n
 args.push(literal(ast.strings[ast.strings.length - 1]));\n
 return

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ast.expressions.length <= 9 ?\n importExpr(Identifiers.inlineInterpolate).callFn(args) :\nimportExpr(Identifiers.interpolate).callFn([args[0], literalArr(args.slice(1))]);\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitKeyedRead = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n var /** @type {?} */ leftMostSafe = this.leftMostSafeNode(ast);\n if (leftMostSafe) {\n return this.convertSafeAccess(ast, leftMostSafe, mode);\n }\n else {\n return convertToStatementIfNeeded(mode, this._visit(ast.obj, _Mode.Expression).key(this._visit(ast.key, _Mode.Expression)));\n }\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitKeyedWrite = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n var /** @type {?} */ obj = this._visit(ast.obj, _Mode.Expression);\n var /** @type {?} */ key = this._visit(ast.key, _Mode.Expression);\n var /** @type {?} */ value = this._visit(ast.value, _Mode.Expression);\n return convertToStatementIfNeeded(mode, obj.key(key).set(value));\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitLiteralArray = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n throw new Error("Illegal State: literal arrays should have been converted into functions");\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitLiteralMap = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n throw new Error("Illegal State: literal maps should have been converted into functions");\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitLiteralPrimitive = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n // For literal values of null, undefined, true, or false allow type inference\n // to infer the type.\n var /** @type {?} */ type = ast.value === null || ast.value === undefined || ast.value === true || ast.value === true ?\n INFERRED_TYPE :\n undefined;\n return convertToStatementIfNeeded(mode, literal(ast.value, type));\n };\n /**\n * @param {?} name\n * @return {?}\n */\n _AstToIrVisitor.prototype._getLocal = /**\n * @param {?} name\n * @return {?}\n */\n function (name) {\n return this._localResolver.getLocal(name);\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitMethodCall = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n if (ast.receiver instanceof ImplicitReceiver && ast.name === '$any') {\n var /** @type {?} */ args = /** @type {?} */ (this.visitAll(ast.args, _Mode.Expression));\n if (args.length !== 1) {\n throw new Error("Invalid call to $any, expected 1 argument but received '" + (args.length || 'none'));\n }\n return (/** @type {?} */ (args[0])).cast(DYNAMIC_TYPE);\n }\n var /** @type {?} */ leftMostSafe = this.leftMostSafeNode(ast);\n if (leftMostSafe) {\n return this.convertSafeAccess(ast, leftMostSafe, mode);\n }\n else {\n var /** @type {?} */ args = this.visitAll(ast.args, _Mode.Expression);\n var /** @type {?} */ result = null;\n var /** @type {?} */ receiver = this._visit(ast.receiver, _Mode.Expression);\n if (receiver === this._implicitReceiver) {\n var /** @type {?} */ varExpr = this._getLocal(ast.name);\n if (varExpr) {\n result = varExpr.callFn(args);\n }\n if (result === null) {\n result = receiver.callMethod(ast.name, args);\n }\n return convertToStatementIfNeeded(mode, result);\n }\n }\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitPrefixNot = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n return convertToStatementIfNeeded(mode, not(this._visit(ast.expression, _Mode.Expression)));\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitNonNullAssert = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n return convertToStatementIfNeeded(mode, assertNotNull(this._visit(ast.expression, _Mode.Expression)));\n };\n /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n _AstToIrVisitor.prototype.visitPropertyRead = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n function (ast, mode) {\n var /** @type {?} */ leftMostSafe

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= this.leftMostSafeNode(ast);\n if (leftMostSafe) {\n return this.convertSafeAccess(ast, leftMostSafe,\nmode);\n }\n else {\n var /** @type {?} */ result = null;\n var /** @type {?} */ receiver =\nthis._visit(ast.receiver, _Mode.Expression);\n if (receiver === this._implicitReceiver) {\n result =\nthis._getLocal(ast.name);\n }\n if (result == null) {\n result = receiver.prop(ast.name);\n }\n return convertToStatementIfNeeded(mode, result);\n }\n};\n/**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype.visitPropertyWrite = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\nfunction (ast, mode) {\n var /** @type {?} */\nreceiver = this._visit(ast.receiver, _Mode.Expression);\n if (receiver === this._implicitReceiver) {\n var\n/** @type {?} */ varExpr = this._getLocal(ast.name);\n if (varExpr) {\n throw new Error('Cannot\nassign to a reference or variable!');\n }\n }\n return convertToStatementIfNeeded(mode,\nreceiver.prop(ast.name).set(this._visit(ast.value, _Mode.Expression)));\n};\n/**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype.visitSafePropertyRead = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\nfunction (ast, mode) {\n return\nthis.convertSafeAccess(ast, this.leftMostSafeNode(ast), mode);\n};\n/**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype.visitSafeMethodCall = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\nfunction (ast, mode) {\n return\nthis.convertSafeAccess(ast, this.leftMostSafeNode(ast), mode);\n};\n/**\n * @param {?} asts\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype.visitAll = /**\n * @param {?} asts\n * @param {?} mode\n * @return {?}\n */\nfunction (asts, mode) {\n var _this = this;\n return\nasts.map(function (ast) { return _this._visit(ast, mode); });\n};\n/**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype.visitQuote = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\nfunction (ast, mode) {\n throw new Error('"Quotes are not\nsupported for evaluation!\\n Statement: \'' + ast.uninterpretedExpression + '\\n located at \'' + ast.location);\n};\n/**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype._visit = /**\n * @param {?} ast\n * @param {?} mode\n * @return {?}\n */\nfunction (ast, mode) {\n var /** @type {?} */ result = this._resultMap.get(ast);\n if (result)\n return\nresult;\n return (this._nodeMap.get(ast) || ast).visit(this, mode);\n};\n/**\n * @param {?} ast\n * @param {?} leftMostSafe\n * @param {?} mode\n * @return {?}\n */\n_AstToIrVisitor.prototype.convertSafeAccess = /**\n * @param {?} ast\n * @param {?} leftMostSafe\n * @param {?} mode\n * @return {?}\n */\nfunction (ast, leftMostSafe, mode) {\n // If the expression\ncontains a safe access node on the left it needs to be converted to\n // an expression that guards the access to the\nmember by checking the receiver for blank. As\n // execution proceeds from left to right, the left most part of\nthe expression must be guarded\n // first but, because member access is left associative, the right side of the\nexpression is at\n // the top of the AST. The desired result requires lifting a copy of the the left part of the\n// expression up to test it for blank before generating the unguarded version.\n // Consider, for example the\nfollowing expression: a?.b.c?.d.e\n // This results in the ast:\n // .\n // /\\n // ?. e\n // /\\n // . d\n // /\\n // ?. c\n // /\\n // a b\n // The following tree should\nbe generated:\n // /\\n // /---- ? ----\\n // / | \\n // a /--- ? ---\\ null\n // / | \\n // . . null\n // /\\n // . c . e\n // /\\n // a b , d\n // /\\n // . c\n // /\\n // a b\n // Notice that the first guard condition is the left\nhand of the left most safe access node\n // which comes in as leftMostSafe to this routine.\n var /** @type\n{?} */ guardedExpression = this._visit(leftMostSafe.receiver, _Mode.Expression);\n var /** @type {?} */\ntemporary = /** @type {?} */ ((undefined));\n if (this.needsTemporary(leftMostSafe.receiver)) {\n // If\nthe expression has method calls or pipes then we need to save the result into a\n // temporary variable to avoid\ncalling stateful or impure code more than once.\n temporary = this.allocateTemporary();\n // Preserve\nthe result in the temporary variable\n guardedExpression = temporary.set(guardedExpression);\n //\nEnsure all further references to the guarded expression refer to the temporary instead.\n this._resultMap.set(leftMostSafe.receiver, temporary);\n }\n var /** @type {?} */ condition =

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guardedExpression.isBlank());\n // Convert the ast to an unguarded access to the receiver's member. The map
will substitute\n // leftMostNode with its unguarded version in the call to `this.visit()`. \n if (leftMostSafe
instanceof SafeMethodCall) {\n this._nodeMap.set(leftMostSafe, new MethodCall(leftMostSafe.span,
leftMostSafe.receiver, leftMostSafe.name, leftMostSafe.args));\n }\n else {\n
this._nodeMap.set(leftMostSafe, new PropertyRead(leftMostSafe.span, leftMostSafe.receiver,
leftMostSafe.name));\n }\n // Recursively convert the node now without the guarded member access.\n
var /** @type {?} */ access = this._visit(ast, _Mode.Expression);\n // Remove the mapping. This is not strictly
required as the converter only traverses each node\n // once but is safer if the conversion is changed to traverse
the nodes more than once.\n this._nodeMap.delete(leftMostSafe);\n // If we allocated a temporary, release
it.\n if (temporary) {\n this.releaseTemporary(temporary);\n }\n // Produce the conditional\n
return convertToStatementIfNeeded(mode, condition.conditional(literal(null), access));\n };\n /**\n * @param
{?} ast\n * @return {?}\n */\n _AstToIrVisitor.prototype.leftMostSafeNode = /**\n * @param {?} ast\n
 * @return {?}\n */\n function (ast) {\n var _this = this;\n var /** @type {?} */ visit = function (visitor,
ast) {\n return (_this._nodeMap.get(ast) || ast).visit(visitor);\n };\n return ast.visit({\n
visitBinary: /**\n * @param {?} ast\n * @return {?}\n */\n function (ast) { return null;
},\n visitChain: /**\n * @param {?} ast\n * @return {?}\n */\n function (ast) {
return null; },\n visitConditional: /**\n * @param {?} ast\n * @return {?}\n */\n
 function (ast) { return null; },\n visitFunctionCall: /**\n * @param {?} ast\n * @return {?}\n
 */\n function (ast) { return null; },\n visitImplicitReceiver: /**\n * @param {?} ast\n
 * @return {?}\n */\n function (ast) { return null; },\n visitInterpolation: /**\n *
@param {?} ast\n * @return {?}\n */\n function (ast) { return null; },\n visitKeyedRead: /**\n
 * @param {?} ast\n * @return {?}\n */\n function (ast) { return
visit(this, ast.obj); },\n visitKeyedWrite: /**\n * @param {?} ast\n * @return {?}\n
 */\n function (ast) { return null; },\n visitLiteralArray: /**\n * @param {?} ast\n
 * @return {?}\n */\n function (ast) { return null; },\n visitLiteralMap: /**\n * @param
{?} ast\n * @return {?}\n */\n function (ast) { return null; },\n visitLiteralPrimitive:
/**\n * @param {?} ast\n * @return {?}\n */\n function (ast) { return null; },\n
 visitMethodCall: /**\n * @param {?} ast\n * @return {?}\n */\n function (ast) { return
visit(this, ast.receiver); },\n visitPipe: /**\n * @param {?} ast\n * @return {?}\n */\n
 function (ast) { return null; },\n visitPrefixNot: /**\n * @param {?} ast\n * @return {?}\n
 */\n function (ast) { return null; },\n visitNonNullAssert: /**\n * @param {?} ast\n
 * @return {?}\n */\n function (ast) { return null; },\n visitPropertyRead: /**\n *
@param {?} ast\n * @return {?}\n */\n function (ast) { return visit(this, ast.receiver); },\n
 visitPropertyWrite: /**\n * @param {?} ast\n * @return {?}\n */\n function (ast) {
return null; },\n visitQuote: /**\n * @param {?} ast\n * @return {?}\n */\n
 function (ast) { return null; },\n visitSafeMethodCall: /**\n * @param {?} ast\n * @return
{?}\n */\n function (ast) { return visit(this, ast.receiver) || ast; },\n visitSafePropertyRead: /**\n
 * @param {?} ast\n * @return {?}\n */\n function (ast) {\n return visit(this,
ast.receiver) || ast;\n }\n });\n };\n /**\n * @param {?} ast\n * @return {?}\n */\n
_AstToIrVisitor.prototype.needsTemporary = /**\n * @param {?} ast\n * @return {?}\n */\n function (ast)
{\n var _this = this;\n var /** @type {?} */ visit = function (visitor, ast) {\n return ast &&
(_this._nodeMap.get(ast) || ast).visit(visitor);\n };\n var /** @type {?} */ visitSome = function (visitor, ast)
{\n return ast.some(function (ast) { return visit(visitor, ast); });\n };\n return ast.visit({\n
visitBinary: /**\n * @param {?} ast\n * @return {?}\n */\n function (ast) { return
visit(this, ast.left) || visit(this, ast.right); },\n visitChain: /**\n * @param {?} ast\n * @return
{?}\n */\n function (ast) { return false; },\n visitConditional: /**\n * @param {?} ast\n
 * @return {?}\n */\n function (ast) {\n return visit(this, ast.condition) || visit(this,
ast.trueExp) ||\n visit(this, ast.falseExp);\n },\n visitFunctionCall: /**\n * @param

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{?} ast\n * @return {?}\n *\n function (ast) { return true; },\n visitImplicitReceiver: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return false; },\n visitInterpolation: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) {\n return visitSome(this, ast.expressions); },\n visitKeyedRead: /**\n *\n * @param {?} ast\n *\n * @return {?}\n *\n function (ast) { return false; },\n visitKeyedWrite: /**\n *\n * @param\n {?} ast\n * @return {?}\n *\n function (ast) { return false; },\n visitLiteralArray: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return true; },\n visitLiteralMap: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return\n true; },\n visitLiteralPrimitive: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return false; },\n visitMethodCall: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return true; },\n visitPipe: /**\n *\n * @param {?} ast\n * @return\n {?}\n *\n function (ast) { return true; },\n visitPrefixNot: /**\n *\n * @param {?} ast\n *\n * @return {?}\n *\n function (ast) { return visit(this, ast.expression); },\n visitNonNullAssert: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) {\n return visit(this, ast.expression); },\n visitPropertyRead: /**\n *\n * @param {?} ast\n * @return\n {?}\n *\n function (ast) { return false; },\n visitPropertyWrite: /**\n *\n * @param {?}\n ast\n * @return {?}\n *\n function (ast) { return false; },\n visitQuote: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return false; },\n visitSafeMethodCall: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) {\n return true; },\n visitSafePropertyRead: /**\n *\n * @param {?} ast\n * @return {?}\n *\n function (ast) { return false; }\n });\n /**\n *\n * @return {?}\n *\n *\n _AstToIrVisitor.prototype.allocateTemporary = /**\n *\n * @return {?}\n *\n function () {\n var /** @type\n {?} */ tempNumber = this._currentTemporary++;\n this._temporaryCount = Math.max(this._currentTemporary,\n this._temporaryCount);\n return new ReadVarExpr(temporaryName(this.bindingId, tempNumber));\n }\n /**\n *\n * @param {?} temporary\n * @return {?}\n *\n _AstToIrVisitor.prototype.releaseTemporary =\n /**\n *\n * @param {?} temporary\n * @return {?}\n *\n function (temporary) {\n this._currentTemporary--;\n if (temporary.name !== temporaryName(this.bindingId, this._currentTemporary))\n {\n throw new Error("Temporary " + temporary.name + " released out of order");\n }\n }\n return\n _AstToIrVisitor;\n });\n /**\n *\n * @param {?} arg\n * @param {?} output\n * @return {?}\n *\n function\n flattenStatements(arg, output) {\n if (Array.isArray(arg)) {\n (** @type {?} */ (arg)).forEach(function (entry)\n {\n return flattenStatements(entry, output);\n });\n }\n else {\n output.push(arg);\n }\n }\n nvar\n DefaultLocalResolver = /** @class */ (function () {\n function DefaultLocalResolver() {\n }\n /**\n *\n * @param {?} name\n * @return {?}\n *\n DefaultLocalResolver.prototype.getLocal = /**\n *\n * @param {?}\n name\n * @return {?}\n *\n function (name) {\n if (name === EventHandlerVars.event.name) {\n return EventHandlerVars.event;\n }\n return null;\n }\n return DefaultLocalResolver;\n });\n /**\n *\n * @param {?} bindingId\n * @return {?}\n *\n function createCurrValueExpr(bindingId) {\n return\n variable("currVal_" + bindingId); // fix syntax highlighting: `}\n /**\n *\n * @param {?} bindingId\n * @return\n {?}\n *\n function createPreventDefaultVar(bindingId) {\n return variable("pd_" + bindingId);\n }\n /**\n *\n * @param {?} stmt\n * @return {?}\n *\n function convertStmtIntoExpression(stmt) {\n if (stmt instanceof\n ExpressionStatement) {\n return stmt.expr;\n }\n else if (stmt instanceof ReturnStatement) {\n return\n stmt.value;\n }\n return null;\n }\n nvar BuiltinFunctionCall = /** @class */ (function (_super) {\n __extends(BuiltinFunctionCall, _super);\n function BuiltinFunctionCall(span, args, converter) {\n var _this =\n _super.call(this, span, null, args) || this;\n _this.args = args;\n _this.converter = converter;\n return\n _this;\n }\n return BuiltinFunctionCall;\n })(FunctionCall);\n /**\n *\n * @fileoverview added by tsickle\n *\n * @suppress {checkTypes} checked by tsc\n *\n *\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n https://angular.io/license\n *\n *\n * Generates code that is used to type check templates.\n *\n nvar\n TypeCheckCompiler = /** @class */ (function () {\n function TypeCheckCompiler(options, reflector) {\n }

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```

this.options = options;\n this.reflector = reflector;\n }\n /**\n * Important notes:\n * - This must not
produce new `import` statements, but only refer to types outside\n * of the file via the variables provided via
externalReferenceVars.\n * This allows Typescript to reuse the old program's structure as no imports have
changed.\n * - This must not produce any exports, as this would pollute the .d.ts file\n * and also violate the
point above.\n */\n /**\n * Important notes:\n * - This must not produce new `import` statements, but only
refer to types outside\n * of the file via the variables provided via externalReferenceVars.\n * This allows
Typescript to reuse the old program's structure as no imports have changed.\n * - This must not produce any
exports, as this would pollute the .d.ts file\n * and also violate the point above.\n */\n @param {?}
componentId\n @param {?} component\n @param {?} template\n @param {?} usedPipes\n @param {?} externalReferenceVars\n @param {?} ctx\n @return {?}\n */\n TypeCheckCompiler.prototype.compileComponent = /**\n * Important notes:\n * - This must not produce new
`import` statements, but only refer to types outside\n * of the file via the variables provided via
externalReferenceVars.\n * This allows Typescript to reuse the old program's structure as no imports have
changed.\n * - This must not produce any exports, as this would pollute the .d.ts file\n * and also violate the
point above.\n */\n @param {?} componentId\n @param {?} component\n @param {?} template\n @param {?} usedPipes\n @param {?} externalReferenceVars\n @param {?} ctx\n @return {?}\n */\n function (componentId, component, template, usedPipes, externalReferenceVars, ctx) {\n var _this =
this;\n var /** @type {?} */ pipes = new Map();\n usedPipes.forEach(function (p) { return
pipes.set(p.name, p.type.reference); });\n var /** @type {?} */ embeddedViewCount = 0;\n var /** @type
{?} */ viewBuilderFactory = function (parent, guards) {\n var /** @type {?} */ embeddedViewIndex =
embeddedViewCount++;\n return new ViewBuilder(_this.options, _this.reflector, externalReferenceVars,
parent, component.type.reference, component.isHost, embeddedViewIndex, pipes, guards, ctx,
viewBuilderFactory);\n }; \n var /** @type {?} */ visitor = viewBuilderFactory(null, []);\n visitor.visitAll([], template);\n return visitor.build(componentId);\n };\n return
TypeCheckCompiler;\n})();\nvar DYNAMIC_VAR_NAME = '_any';\nvar TypeCheckLocalResolver = /** @class
*/ (function () {\n function TypeCheckLocalResolver() {\n }\n /**\n * @param {?} name\n * @return
{?}\n */\n TypeCheckLocalResolver.prototype.getLocal = /**\n * @param {?} name\n * @return {?}\n */\n function (name) {\n if (name === EventHandlerVars.event.name) {\n // References to the event
should not be type-checked.\n // TODO(chuckj): determine a better type for the event.\n return
variable(DYNAMIC_VAR_NAME);\n }\n return null;\n };\n return
TypeCheckLocalResolver;\n})();\nvar defaultResolver = new TypeCheckLocalResolver();\nvar ViewBuilder = /**
@class */ (function () {\n function ViewBuilder(options, reflector, externalReferenceVars, parent, component,
isHostComponent, embeddedViewIndex, pipes, guards, ctx, viewBuilderFactory) {\n this.options = options;\n
this.reflector = reflector;\n this.externalReferenceVars = externalReferenceVars;\n this.parent = parent;\n
this.component = component;\n this.isHostComponent = isHostComponent;\n this.embeddedViewIndex =
embeddedViewIndex;\n this.pipes = pipes;\n this.guards = guards;\n this.ctx = ctx;\n
this.viewBuilderFactory = viewBuilderFactory;\n this.refOutputVars = new Map();\n this.variables = [];\n
this.children = [];\n this.updates = [];\n this.actions = [];\n }\n /**\n * @param {?} type\n *
@return {?}\n */\n ViewBuilder.prototype.getOutputVar = /**\n * @param {?} type\n * @return {?}\n */\n function (type) {\n var /** @type {?} */ varName;\n if (type === this.component &&
this.isHostComponent) {\n varName = DYNAMIC_VAR_NAME;\n } else if (type instanceof
StaticSymbol) {\n varName = this.externalReferenceVars.get(type);\n } else {\n varName =
DYNAMIC_VAR_NAME;\n }\n if (!varName) {\n throw new Error("Illegal State: referring to a
type without a variable \" + JSON.stringify(type));\n }\n return varName;\n };\n /**\n * @param {?}
ast\n * @return {?}\n */\n ViewBuilder.prototype.getTypeGuardExpressions = /**\n * @param {?} ast\n *
@return {?}\n */\n function (ast) {\n var /** @type {?} */ result = this.guards.slice();\n for (var _i =
0, _a = ast.directives; _i < _a.length; _i++) {\n var directive = _a[_i];\n for (var _b = 0, _c =
directive.inputs; _b < _c.length; _b++) {\n var input = _c[_b];\n var /** @type {?} */ guard =

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directive.directive.guards[input.directiveName];\n if (guard) {\n var /** @type {?} */ useIf =\n guard === 'UseIf';\n result.push({\n guard: guard,\n useIf: useIf,\n expression: /** @type {?} */ ({ context: this.component, value: input.value })\n });\n }\n }\n return result;\n };\n /**\n * @param {?} variables\n * @param {?} astNodes\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitAll = /**\n * @param {?} variables\n * @param {?} astNodes\n * @return {?}\n */\n ^\n function (variables, astNodes) {\n this.variables = variables;\n templateVisitAll(this, astNodes);\n };\n /**\n * @param {?} componentId\n * @param {?}=\n targetStatements\n * @return {?}\n */\n ^\n ViewBuilder.prototype.build = /**\n * @param {?}=\n componentId\n * @param {?}=\n targetStatements\n * @return {?}\n */\n ^\n function (componentId,\n targetStatements) {\n var _this = this;\n if (targetStatements === void 0) { targetStatements = []; }\n this.children.forEach(function (child) { return child.build(componentId, targetStatements); });\n var /** @type\n {?} */ viewStmts = [variable(DYNAMIC_VAR_NAME).set(NULL_EXPR).toDeclStmt(DYNAMIC_TYPE)];\n var /** @type\n {?} */ bindingCount = 0;\n this.updates.forEach(function (expression) {\n var _a =\n _this.preprocessUpdateExpression(expression), sourceSpan = _a.sourceSpan, context = _a.context, value =\n _a.value;\n var /** @type\n {?} */ bindingId = \"\" + bindingCount++;\n var /** @type\n {?} */\n nameResolver = context === _this.component ? _this : defaultResolver;\n var _b =\n convertPropertyBinding(nameResolver, variable(_this.getOutputVar(context)), value, bindingId,\n BindingForm.General), stmts = _b.stmts, currValExpr = _b.currValExpr;\n stmts.push(new\n ExpressionStatement(currValExpr));\n viewStmts.push.apply(viewStmts, stmts.map(function (stmt) { return\n applySourceSpanToStatementIfNeeded(stmt, sourceSpan); }));\n });\n this.actions.forEach(function (_a)\n {\n var sourceSpan = _a.sourceSpan, context = _a.context, value = _a.value;\n var /** @type\n {?} */\n bindingId = \"\" + bindingCount++;\n var /** @type\n {?} */ nameResolver = context === _this.component ?\n _this : defaultResolver;\n var stmts = convertActionBinding(nameResolver,\n variable(_this.getOutputVar(context)), value, bindingId).stmts;\n viewStmts.push.apply(viewStmts,\n stmts.map(function (stmt) { return applySourceSpanToStatementIfNeeded(stmt, sourceSpan); }));\n });\n if\n (this.guards.length) {\n var /** @type\n {?} */ guardExpression = undefined;\n for (var _i = 0, _a =\n this.guards; _i < _a.length; _i++) {\n var guard = _a[_i];\n var _b =\n this.preprocessUpdateExpression(guard.expression), context = _b.context, value = _b.value;\n var /**\n @type\n {?} */ bindingId = \"\" + bindingCount++;\n var /** @type\n {?} */ nameResolver = context ===\n this.component ? this : defaultResolver;\n // We only support support simple expressions and ignore others\n as they\n // are unlikely to affect type narrowing.\n var _c =\n convertPropertyBinding(nameResolver, variable(this.getOutputVar(context)), value, bindingId,\n BindingForm.TrySimple), stmts = _c.stmts, currValExpr = _c.currValExpr;\n if (stmts.length === 0) {\n var /** @type\n {?} */ guardClause = guard.useIf ? currValExpr :\n this.ctx.importExpr(guard.guard).callFn([currValExpr]);\n guardExpression = guardExpression ?\n guardExpression.and(guardClause) : guardClause;\n }\n }\n if (guardExpression) {\n viewStmts = [new IfStmt(guardExpression, viewStmts)];\n }\n }\n var /** @type\n {?} */ viewName\n = \"_View_\" + componentId + \"_\" + this.embeddedViewIndex;\n var /** @type\n {?} */ viewFactory = new\n DeclareFunctionStmt(viewName, [], viewStmts);\n targetStatements.push(viewFactory);\n return\n targetStatements;\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitBoundText = /**\n * @param {?} ast\n * @param {?} context\n * @return\n {?}\n */\n ^\n function (ast, context) {\n var _this = this;\n var /** @type\n {?} */ astWithSource = /**\n @type\n {?} */ (ast.value);\n var /** @type\n {?} */ inter = /** @type\n {?} */ (astWithSource.ast);\n inter.expressions.forEach(function (expr) {\n return _this.updates.push({ context: _this.component, value:\n expr, sourceSpan: ast.sourceSpan });\n });\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitEmbeddedTemplate = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n this.visitElementOrTemplate(ast);\n // Note: The old view compiler used to use an `any` type\n // for the

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context in any embedded view.\n // We keep this behavior behind a flag for now.\n if
(this.options.fullTemplateTypeCheck) {\n // Find any applicable type guards. For example, NgIf has a type
guard on ngIf\n // (see NgIf.ngIfTypeGuard) that can be used to indicate that a template is only\n //
stamped out if ngIf is truthy so any bindings in the template can assume that,\n // if a nullable type is used for
ngIf, that expression is not null or undefined.\n var /** @type {?} */ guards =
this.getTypeGuardExpressions(ast);\n var /** @type {?} */ childVisitor = this.viewBuilderFactory(this,
guards);\n this.children.push(childVisitor);\n childVisitor.visitAll(ast.variables, ast.children);\n }\n
};\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n
ViewBuilder.prototype.visitElement = /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n
*/\n function (ast, context) {\n var _this = this;\n this.visitElementOrTemplate(ast);\n var /** @type
{?} */ inputDefs = [];\n var /** @type {?} */ updateRendererExpressions = [];\n var /** @type {?} */
outputDefs = [];\n ast.inputs.forEach(function (inputAst) {\n _this.updates.push({ context:
_this.component, value: inputAst.value, sourceSpan: inputAst.sourceSpan });\n });\n templateVisitAll(this,
ast.children);\n });\n /**\n * @param {?} ast\n * @return {?}\n */\n
ViewBuilder.prototype.visitElementOrTemplate = /**\n * @param {?} ast\n * @return {?}\n */\n function
(ast) {\n var _this = this;\n ast.directives.forEach(function (dirAst) { _this.visitDirective(dirAst); });\n
ast.references.forEach(function (ref) {\n var /** @type {?} */ outputVarType = /** @type {?} */ ((null));\n
 // Note: The old view compiler used to use an `any` type\n // for directives exposed via `exportAs`.\n
 // We keep this behavior behind a flag for now.\n if (ref.value && ref.value.identifier &&
_this.options.fullTemplateTypeCheck) {\n outputVarType = ref.value.identifier.reference;\n }\n
 else {\n outputVarType = BuiltinTypeName.Dynamic;\n }\n _this.refOutputVars.set(ref.name, outputVarType);\n });\n ast.outputs.forEach(function (outputAst) {\n
 _this.actions.push({ context: _this.component, value: outputAst.handler, sourceSpan: outputAst.sourceSpan });\n
 });\n });\n /**\n * @param {?} dirAst\n * @return {?}\n */\n
ViewBuilder.prototype.visitDirective =
/**\n * @param {?} dirAst\n * @return {?}\n */\n function (dirAst) {\n var _this = this;\n var /**
@type {?} */ dirType = dirAst.directive.type.reference;\n dirAst.inputs.forEach(function (input) {\n
return _this.updates.push({ context: _this.component, value: input.value, sourceSpan: input.sourceSpan });\n
 });\n // Note: The old view compiler used to use an `any` type\n // for expressions in host properties /
events.\n // We keep this behavior behind a flag for now.\n if (this.options.fullTemplateTypeCheck) {\n
 dirAst.hostProperties.forEach(function (inputAst) {\n return _this.updates.push({ context: dirType,
value: inputAst.value, sourceSpan: inputAst.sourceSpan });\n });\n dirAst.hostEvents.forEach(function
(hostEventAst) {\n return _this.actions.push({\n context: dirType,\n value:
hostEventAst.handler,\n sourceSpan: hostEventAst.sourceSpan\n });\n });\n }\n
};\n /**\n * @param {?} name\n * @return {?}\n */\n
ViewBuilder.prototype.getLocal = /**\n *
@param {?} name\n * @return {?}\n */\n function (name) {\n if (name ==
EventHandlerVars.event.name) {\n return variable(this.getOutputVar(BuiltinTypeName.Dynamic));\n }\n
 for (var /** @type {?} */ currBuilder = this; currBuilder; currBuilder = currBuilder.parent) {\n var
/** @type {?} */ outputVarType = void 0;\n // check references\n outputVarType =
currBuilder.refOutputVars.get(name);\n if (outputVarType == null) {\n // check variables\n
var /** @type {?} */ varAst = currBuilder.variables.find(function (varAst) { return varAst.name === name; });\n
 if (varAst) {\n outputVarType = BuiltinTypeName.Dynamic;\n }\n }\n if
(outputVarType != null) {\n return variable(this.getOutputVar(outputVarType));\n }\n }\n
 return null;\n });\n /**\n * @param {?} name\n * @return {?}\n */\n
ViewBuilder.prototype.pipeOutputVar = /**\n * @param {?} name\n * @return {?}\n */\n function
(name) {\n var /** @type {?} */ pipe = this.pipes.get(name);\n if (!pipe) {\n throw new
Error("Illegal State: Could not find pipe \" + name + \" in template of \" + this.component);\n }\n return
this.getOutputVar(pipe);\n });\n /**\n * @param {?} expression\n * @return {?}\n */\n
ViewBuilder.prototype.preprocessUpdateExpression = /**\n * @param {?} expression\n * @return {?}\n

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*\n function (expression) {\n var _this = this;\n return {\n sourceSpan: expression.sourceSpan,\n context: expression.context,\n value: convertPropertyBindingBuiltins({\n createLiteralArrayConverter: function (argCount) {\n return function (args) {\n var /** @type {?} */\n @type {?} */ arr = literalArr(args);\n // Note: The old view compiler used to use an `any` type\n // for arrays.\n return _this.options.fullTemplateTypeCheck ? arr :\n arr.cast(DYNAMIC_TYPE);\n };\n },\n createLiteralMapConverter: function (keys)\n {\n return function (values) {\n var /** @type {?} */\n @type {?} */ entries = keys.map(function (k, i) {\n return ({\n key: k.key,\n value: values[i],\n quoted: k.quoted,\n });\n });\n var /** @type {?} */\n @type {?} */ map =\n literalMap(entries);\n // Note: The old view compiler used to use an `any` type\n // for maps.\n return _this.options.fullTemplateTypeCheck ? map : map.cast(DYNAMIC_TYPE);\n };\n },\n createPipeConverter: function (name, argCount) {\n return function (args)\n {\n // Note: The old view compiler used to use an `any` type\n // for pipes.\n var /** @type {?} */\n @type {?} */ pipeExpr = _this.options.fullTemplateTypeCheck ?\n variable(_this.pipeOutputVar(name)) :\n variable(_this.getOutputVar(BuiltinTypeName.Dynamic));\n return pipeExpr.callMethod('transform',\n args);\n };\n },\n expression.value)\n });\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitNgContent = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitText = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitDirectiveProperty = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitReference = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitVariable = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitEvent = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitElementProperty = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n ViewBuilder.prototype.visitAttr = /**\n * @param\n * @param {?} ast\n * @param {?} context\n * @return {?}\n */\n ^\n function (ast, context) {\n return\n ViewBuilder;\n });\n });\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by\n * an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n nvar\n CLASS_ATTR$1 = 'class';\n nvar\n STYLE_ATTR = 'style';\n nvar\n IMPLICIT_TEMPLATE_VAR = '\\$implicit';\n nvar\n ViewCompileResult = /** @class */ (function () {\n function ViewCompileResult(viewClassVar,\n rendererTypeVar) {\n this.viewClassVar = viewClassVar;\n this.rendererTypeVar = rendererTypeVar;\n }\n return ViewCompileResult;\n });\n nvar\n ViewCompiler = /** @class */ (function () {\n function\n ViewCompiler(_reflector) {\n this._reflector = _reflector;\n }\n /**\n * @param {?} outputCtx\n * @param {?} component\n * @param {?} template\n * @param {?} styles\n * @param {?} usedPipes\n * @return {?}\n */\n ^\n ViewCompiler.prototype.compileComponent = /**\n * @param\n * @param {?} outputCtx\n * @param {?} component\n * @param {?} template\n * @param {?} styles\n * @param {?} usedPipes\n * @return {?}\n */\n ^\n function (outputCtx, component, template, styles, usedPipes) {\n var _this = this;\n var /** @type {?} */\n @type {?} */ embeddedViewCount = 0;\n var /** @type {?} */\n @type {?} */ staticQueryIds =\n findStaticQueryIds(template);\n var /** @type {?} */\n @type {?} */ renderComponentVarName = /** @type {?} */

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((undefined));\n if (!component.isHost) {\n var /** @type {?} */ template_1 = /** @type {?} */
((component.template));\n var /** @type {?} */ customRenderData = [];\n if (template_1.animations
&& template_1.animations.length) {\n customRenderData.push(new LiteralMapEntry('animation',
convertValueToOutputAst(outputCtx, template_1.animations), true));\n }\n var /** @type {?} */
renderComponentVar = variable(rendererTypeName(component.type.reference));\n
renderComponentVarName = /** @type {?} */ ((renderComponentVar.name));\n
outputCtx.statements.push(renderComponentVar\n
.set(importExpr(Identifiers.createRendererType2).callFn([new LiteralMapExpr([\n new
LiteralMapEntry('encapsulation', literal(template_1.encapsulation), false),\n new
LiteralMapEntry('styles', styles, false),\n new LiteralMapEntry('data', new
LiteralMapExpr(customRenderData), false)\n]])))\n
.toDeclStmt(importType(Identifiers.RendererType2), [StmtModifier.Final, StmtModifier.Exported]));\n }\n
var /** @type {?} */ viewBuilderFactory = function (parent) {\n var /** @type {?} */ embeddedViewIndex
= embeddedViewCount++;\n return new ViewBuilder$1(_this._reflector, outputCtx, parent, component,
embeddedViewIndex, usedPipes, staticQueryIds, viewBuilderFactory);\n };\n var /** @type {?} */ visitor
= viewBuilderFactory(null);\n visitor.visitAll([], template);\n (_a = outputCtx.statements).push.apply(_a,
visitor.build());\n return new ViewCompileResult(visitor.viewName, renderComponentVarName);\n var
_a;\n };\n return ViewCompiler;\n})();\nvar LOG_VAR$1 = variable('_l');\nvar VIEW_VAR =
variable('_v');\nvar CHECK_VAR = variable('_ck');\nvar COMP_VAR = variable('_co');\nvar
EVENT_NAME_VAR = variable('en');\nvar ALLOW_DEFAULT_VAR = variable('ad');\nvar ViewBuilder$1 =
/** @class */ (function () {\n function ViewBuilder(reflector, outputCtx, parent, component,
embeddedViewIndex, usedPipes, staticQueryIds, viewBuilderFactory) {\n this.reflector = reflector;\n
this.outputCtx = outputCtx;\n this.parent = parent;\n this.component = component;\n
this.embeddedViewIndex = embeddedViewIndex;\n this.usedPipes = usedPipes;\n this.staticQueryIds =
staticQueryIds;\n this.viewBuilderFactory = viewBuilderFactory;\n this.nodes = [];\n
this.purePipeNodeIndices = Object.create(null);\n this.refNodeIndices = Object.create(null);\n this.variables
= [];\n this.children = [];\n // TODO(tbosch): The old view compiler used to use an `any` type\n // for
the context in any embedded view. We keep this behavior for now\n // to be able to introduce the new view
compiler without too many errors.\n this.compType = this.embeddedViewIndex > 0 ?\n
DYNAMIC_TYPE : /** @type {?} */\n
((expressionType(outputCtx.importExpr(this.component.type.reference))));\n this.viewName =
viewClassName(this.component.type.reference, this.embeddedViewIndex);\n }\n /**\n * @param {?}
variables\n * @param {?} astNodes\n * @return {?}\n */\n ViewBuilder.prototype.visitAll = /**\n *
@param {?} variables\n * @param {?} astNodes\n * @return {?}\n */\n function (variables, astNodes) {\n
 var _this = this;\n this.variables = variables;\n // create the pipes for the pure pipes immediately, so that
we know their indices.\n if (!this.parent) {\n this.usedPipes.forEach(function (pipe) {\n if
(pipe.pure) {\n _this.purePipeNodeIndices[pipe.name] = _this._createPipe(null, pipe);\n }\n
 });\n }\n if (!this.parent) {\n var /** @type {?} */ queryIds_1 =
staticViewQueryIds(this.staticQueryIds);\n this.component.viewQueries.forEach(function (query,
queryIndex) {\n // Note: queries start with id 1 so we can use the number in a Bloom filter!\n var
/** @type {?} */ queryId = queryIndex + 1;\n var /** @type {?} */ bindingType = query.first ? 0 /* First
*/ : 1;\n var /** @type {?} */ flags = 134217728 /* TypeViewQuery */ |\n
calcStaticDynamicQueryFlags(queryIds_1, queryId, query.first);\n _this.nodes.push(function () {\n
 return ({\n sourceSpan: null,\n nodeFlags: flags,\n nodeDef:
importExpr(Identifiers.queryDef).callFn([\n literal(flags), literal(queryId),\n new
LiteralMapExpr([new LiteralMapEntry(query.propertyName, literal(bindingType), false)])\n])\n });\n });\n });\n templateVisitAll(this, astNodes);\n if (this.parent &&
(astNodes.length === 0 || needsAdditionalRootNode(astNodes))) {\n // if the view is an embedded view, then

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importExpr(Identifiers.textDef).callFn([\n literal(checkIndex),\n literal(ast.ngContentIndex),\n literalArr(inter.strings.map(function (s) { return literal(s); })),\n]),\n updateRenderer: updateRendererExpressions\n });\n });\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?} */\n ^\n ViewBuilder.prototype.visitEmbeddedTemplate =\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?} */\n ^\n function (ast, context) {\n var _this = this;\n var /** @type {?} */ nodeIndex = this.nodes.length;\n // reserve the space in the\n nodeDefs array\n this.nodes.push(/** @type {?} */ ((null)));\n var _a =\n this._visitElementOrTemplate(nodeIndex, ast), flags = _a.flags, queryMatchesExpr = _a.queryMatchesExpr,\n hostEvents = _a.hostEvents;\n var /** @type {?} */ childVisitor = this.viewBuilderFactory(this);\n this.children.push(childVisitor);\n childVisitor.visitAll(ast.variables, ast.children);\n var /** @type {?} */\n childCount = this.nodes.length - nodeIndex - 1;\n // anchorDef(\n // flags: NodeFlags, matchedQueries:\n [string, QueryValueType][], ngContentIndex: number,\n // childCount: number, handleEventFn?:\n ElementHandleEventFn, templateFactory?:\n // ViewDefinitionFactory): NodeDef;\n this.nodes[nodeIndex] = function () {\n return ({\n sourceSpan: ast.sourceSpan,\n nodeFlags: 1 /* TypeElement */ | flags,\n nodeDef: importExpr(Identifiers.anchorDef).callFn([\n literal(flags),\n queryMatchesExpr,\n literal(ast.ngContentIndex),\n literal(childCount),\n _this._createElementHandleEventFn(nodeIndex, hostEvents),\n variable(childVisitor.viewName),\n])\n });\n });\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?} */\n ^\n ViewBuilder.prototype.visitElement = /**\n * @param {?} ast\n * @param {?} context\n * @return {?} */\n ^\n function (ast, context) {\n var _this = this;\n var /** @type {?} */ nodeIndex = this.nodes.length;\n // reserve the space in the nodeDefs array so we can add\n children\n this.nodes.push(/** @type {?} */ ((null)));\n // Using a null element name creates an anchor.\n var /** @type {?} */ elName = isNgContainer(ast.name) ? null : ast.name;\n var _a =\n this._visitElementOrTemplate(nodeIndex, ast), flags = _a.flags, usedEvents = _a.usedEvents, queryMatchesExpr =\n _a.queryMatchesExpr, dirHostBindings = _a.hostBindings, hostEvents = _a.hostEvents;\n var /** @type {?} */\n inputDefs = [];\n var /** @type {?} */ updateRendererExpressions = [];\n var /** @type {?} */ outputDefs = [];\n if (elName) {\n var /** @type {?} */ hostBindings = ast.inputs\n .map(function\n (inputAst) {\n return ({\n context: /** @type {?} */ (COMP_VAR),\n inputAst:\n inputAst,\n dirAst: /** @type {?} */ (null),\n });\n })\n .concat(dirHostBindings);\n if (hostBindings.length) {\n updateRendererExpressions =\n hostBindings.map(function (hostBinding, bindingIndex) {\n return\n _this._preprocessUpdateExpression({\n context: hostBinding.context,\n nodeIndex: nodeIndex,\n bindingIndex: bindingIndex,\n sourceSpan:\n hostBinding.inputAst.sourceSpan,\n value: hostBinding.inputAst.value\n });\n });\n inputDefs = hostBindings.map(function (hostBinding) { return\n elementBindingDef(hostBinding.inputAst, hostBinding.dirAst); });\n }\n outputDefs =\n usedEvents.map(function (_a) {\n var target = _a[0], eventName = _a[1];\n return\n literalArr([literal(target), literal(eventName)]);\n });\n templateVisitAll(this, ast.children);\n var /** @type {?} */ childCount = this.nodes.length - nodeIndex - 1;\n var /** @type {?} */ compAst =\n ast.directives.find(function (dirAst) { return dirAst.directive.isComponent; });\n var /** @type {?} */\n compRendererType = /** @type {?} */ (NULL_EXPR);\n var /** @type {?} */ compView = /** @type {?} */\n (NULL_EXPR);\n if (compAst) {\n compView =\n this.outputCtx.importExpr(compAst.directive.componentViewType);\n compRendererType =\n this.outputCtx.importExpr(compAst.directive.rendererType);\n }\n // Check index is the same as the node\n index during compilation\n // They might only differ at runtime\n var /** @type {?} */ checkIndex =\n nodeIndex;\n this.nodes[nodeIndex] = function () {\n return ({\n sourceSpan: ast.sourceSpan,\n nodeFlags: 1 /* TypeElement */ | flags,\n nodeDef: importExpr(Identifiers.elementDef).callFn([\n literal(checkIndex),\n literal(flags),\n queryMatchesExpr,\n
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@param {?} directiveIndex\n * @param {?} elementNodeIndex\n * @param {?} refs\n * @param {?}
queryMatches\n * @param {?} usedEvents\n * @param {?} queryIds\n * @return {?}\n *^\n function
(providerAst, dirAst, directiveIndex, elementNodeIndex, refs, queryMatches, usedEvents, queryIds) {\n var
_this = this;\n var /** @type {?} */ nodeIndex = this.nodes.length;\n // reserve the space in the nodeDefs
array so we can add children\n this.nodes.push(/** @type {?} */ ((null)));\n
dirAst.directive.queries.forEach(function (query, queryIndex) {\n var /** @type {?} */ queryId =
dirAst.contentQueryStartId + queryIndex;\n var /** @type {?} */ flags = 67108864 /* TypeContentQuery */ |
calcStaticDynamicQueryFlags(queryIds, queryId, query.first);\n var /** @type {?} */ bindingType =
query.first ? 0 /* First */ : 1;\n _this.nodes.push(function () {\n return ({\n sourceSpan:
dirAst.sourceSpan,\n nodeFlags: flags,\n nodeDef:
importExpr(Identifiers.queryDef).callFn([\n literal(flags), literal(queryId),\n new
LiteralMapExpr([new LiteralMapEntry(query.propertyName, literal(bindingType), false)])\n]),\n
});\n });\n });\n // Note: the operation below might also create new nodeDefs,\n // but we don't
want them to be a child of a directive,\n // as they might be a provider/pipe on their own.\n // I.e. we only
allow queries as children of directives nodes.\n var /** @type {?} */ childCount = this.nodes.length - nodeIndex
- 1;\n var _a = this._visitProviderOrDirective(providerAst, queryMatches), flags = _a.flags, queryMatchExprs =
_a.queryMatchExprs, providerExpr = _a.providerExpr, depsExpr = _a.depsExpr;\n refs.forEach(function (ref)
{\n if (ref.value && tokenReference(ref.value) === tokenReference(providerAst.token)) {\n
_this.refNodeIndices[ref.name] = nodeIndex;\n queryMatchExprs.push(literalArr([literal(ref.name),
literal(4 /* Provider */)]));\n }\n });\n if (dirAst.directive.isComponent) {\n flags |= 32768 /*
Component */;\n }\n var /** @type {?} */ inputDefs = dirAst.inputs.map(function (inputAst, inputIndex)
{\n var /** @type {?} */ mapValue = literalArr([literal(inputIndex), literal(inputAst.directiveName)]);\n
// Note: it's important to not quote the key so that we can capture renames by minifiers!\n return new
LiteralMapEntry(inputAst.directiveName, mapValue, false);\n });\n var /** @type {?} */ outputDefs = [];\n
var /** @type {?} */ dirMeta = dirAst.directive;\n Object.keys(dirMeta.outputs).forEach(function
(propName) {\n var /** @type {?} */ eventName = dirMeta.outputs[propName];\n if
(usedEvents.has(eventName)) {\n // Note: it's important to not quote the key so that we can capture
renames by minifiers!\n outputDefs.push(new LiteralMapEntry(propName, literal(eventName), false));\n
}\n });\n var /** @type {?} */ updateDirectiveExpressions = [];\n if (dirAst.inputs.length || (flags
& (262144 /* DoCheck */ | 65536 /* OnInit */)) > 0) {\n updateDirectiveExpressions =\n
dirAst.inputs.map(function (input, bindingIndex) {\n return _this._preprocessUpdateExpression({\n
nodeIndex: nodeIndex,\n bindingIndex: bindingIndex,\n sourceSpan:
input.sourceSpan,\n context: COMP_VAR,\n value: input.value\n });\n
});\n }\n var /** @type {?} */ dirContextExpr =
importExpr(Identifiers.nodeValue).callFn([VIEW_VAR, literal(nodeIndex)]);\n var /** @type {?} */
hostBindings = dirAst.hostProperties.map(function (inputAst) {\n return ({\n context:
dirContextExpr,\n dirAst: dirAst,\n inputAst: inputAst,\n });\n });\n var /** @type
{?} */ hostEvents = dirAst.hostEvents.map(function (hostEventAst) {\n return ({\n context:
dirContextExpr,\n eventAst: hostEventAst, dirAst: dirAst,\n });\n });\n // Check index is the
same as the node index during compilation\n // They might only differ at runtime\n var /** @type {?} */
checkIndex = nodeIndex;\n this.nodes[nodeIndex] = function () {\n return ({\n sourceSpan:
dirAst.sourceSpan,\n nodeFlags: 16384 /* TypeDirective */ | flags,\n nodeDef:
importExpr(Identifiers.directiveDef).callFn([\n literal(checkIndex),\n literal(flags),\n
queryMatchExprs.length ? literalArr(queryMatchExprs) : NULL_EXPR,\n literal(childCount),\n
providerExpr,\n depsExpr,\n inputDefs.length ? new LiteralMapExpr(inputDefs) :
NULL_EXPR,\n outputDefs.length ? new LiteralMapExpr(outputDefs) : NULL_EXPR,\n]),\n
updateDirectives: updateDirectiveExpressions,\n directive: dirAst.directive.type,\n });\n
});\n return { hostBindings: hostBindings, hostEvents: hostEvents }; }\n /**\n * @param {?}

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providerAst\n * @param {?} queryMatches\n * @return {?}\n *\n ViewBuilder.prototype._visitProvider
= /**\n * @param {?} providerAst\n * @param {?} queryMatches\n * @return {?}\n *\n function
(providerAst, queryMatches) {\n this._addProviderNode(this._visitProviderOrDirective(providerAst,
queryMatches));\n };\n /**\n * @param {?} directives\n * @return {?}\n *\n ViewBuilder.prototype._visitComponentFactoryResolverProvider = /**\n * @param {?} directives\n *
@return {?}\n *\n function (directives) {\n var /** @type {?} */ componentDirMeta =
directives.find(function (dirAst) { return dirAst.directive.isComponent; });\n if (componentDirMeta &&
componentDirMeta.directive.entryComponents.length) {\n var _a =
componentFactoryResolverProviderDef(this.reflector, this.outputCtx, 8192 /* PrivateProvider */,
componentDirMeta.directive.entryComponents), providerExpr = _a.providerExpr, depsExpr = _a.depsExpr, flags =
_a.flags, tokenExpr = _a.tokenExpr;\n this._addProviderNode({\n providerExpr: providerExpr,\n
depsExpr: depsExpr,\n flags: flags,\n tokenExpr: tokenExpr,\n queryMatchExprs:
[],\n sourceSpan: componentDirMeta.sourceSpan\n });\n };\n };\n /**\n * @param {?}
data\n * @return {?}\n *\n ViewBuilder.prototype._addProviderNode = /**\n * @param {?} data\n *
@return {?}\n *\n function (data) {\n var /** @type {?} */ nodeIndex = this.nodes.length;\n //
providerDef(\n // flags: NodeFlags, matchedQueries: [string, QueryValueType][], token:any,\n // value:
any, deps: ([DepFlags, any] | any)[]: NodeDef;\n this.nodes.push(function () {\n return ({\n
sourceSpan: data.sourceSpan,\n nodeFlags: data.flags,\n nodeDef:
importExpr(Identifiers.providerDef).callFn([\n literal(data.flags),\n
data.queryMatchExprs.length ? literalArr(data.queryMatchExprs) : NULL_EXPR,\n data.tokenExpr,
data.providerExpr, data.depsExpr\n])\n });\n };\n };\n /**\n * @param {?}
providerAst\n * @param {?} queryMatches\n * @return {?}\n *\n ViewBuilder.prototype._visitProviderOrDirective = /**\n * @param {?} providerAst\n * @param {?}
queryMatches\n * @return {?}\n *\n function (providerAst, queryMatches) {\n var /** @type {?} */
flags = 0;\n var /** @type {?} */ queryMatchExprs = [];\n queryMatches.forEach(function (match) {\n
if (tokenReference(match.value) === tokenReference(providerAst.token)) {\n
queryMatchExprs.push(literalArr([literal(match.queryId), literal(4 /* Provider */)]);\n }\n });\n var
_a = providerDef(this.outputCtx, providerAst), providerExpr = _a.providerExpr, depsExpr = _a.depsExpr,
providerFlags = _a.flags, tokenExpr = _a.tokenExpr;\n return {\n flags: flags | providerFlags,\n
queryMatchExprs: queryMatchExprs,\n providerExpr: providerExpr,\n depsExpr: depsExpr,\n
tokenExpr: tokenExpr,\n sourceSpan: providerAst.sourceSpan\n };\n };\n /**\n * @param {?}
name\n * @return {?}\n *\n ViewBuilder.prototype.getLocal = /**\n * @param {?} name\n * @return
{?}\n *\n function (name) {\n if (name === EventHandlerVars.event.name) {\n return
EventHandlerVars.event;\n }\n var /** @type {?} */ currViewExpr = VIEW_VAR;\n for (var /**
@type {?} */ currBuilder = this; currBuilder; currBuilder = currBuilder.parent,\n currViewExpr =
currViewExpr.prop('parent').cast(DYNAMIC_TYPE)) {\n // check references\n var /** @type {?} */
refNodeIndex = currBuilder.refNodeIndices[name];\n if (refNodeIndex !== null) {\n return
importExpr(Identifiers.nodeValue).callFn([currViewExpr, literal(refNodeIndex)]);\n }\n // check
variables\n var /** @type {?} */ varAst = currBuilder.variables.find(function (varAst) { return varAst.name
=== name; });\n if (varAst) {\n var /** @type {?} */ varValue = varAst.value ||
IMPLICIT_TEMPLATE_VAR;\n return currViewExpr.prop('context').prop(varValue);\n }\n }\n
return null;\n };\n /**\n * @param {?} sourceSpan\n * @param {?} argCount\n * @return {?}\n
*\n ViewBuilder.prototype._createLiteralArrayConverter = /**\n * @param {?} sourceSpan\n * @param
{?} argCount\n * @return {?}\n *\n function (sourceSpan, argCount) {\n if (argCount === 0) {\n
var /** @type {?} */ valueExpr_1 = importExpr(Identifiers.EMPTY_ARRAY);\n return function () { return
valueExpr_1; };\n }\n var /** @type {?} */ checkIndex = this.nodes.length;\n this.nodes.push(function
() {\n return ({\n sourceSpan: sourceSpan,\n nodeFlags: 32 /* TypePureArray */,\n
nodeDef: importExpr(Identifiers.pureArrayDef).callFn([\n literal(checkIndex),\n

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elementAst.directives.forEach(function (dirAst) {\n
Object.keys(dirAst.directive.hostAttributes).forEach(function (name) {\n var /** @type {?} */ value =
dirAst.directive.hostAttributes[name];\n var /** @type {?} */ prevValue = mapResult[name];\n
mapResult[name] = prevValue != null ? mergeAttributeValue(name, prevValue, value) : value;\n });\n });\n
// Note: We need to sort to get a defined output order\n // for tests and for caching generated artifacts...\n return
literalArr(Object.keys(mapResult).sort().map(function (attrName) { return literalArr([literal(attrName),
literal(mapResult[attrName])]); }));\n}\n\n/**\n * @param {?} attrName\n * @param {?} attrValue1\n * @param {?}
attrValue2\n * @return {?} */\n *^\nfunction mergeAttributeValue(attrName, attrValue1, attrValue2) {\n if
(attrName === CLASS_ATTR$1 || attrName === STYLE_ATTR) {\n return attrValue1 + \" \" + attrValue2;\n
 }\n else {\n return attrValue2;\n }\n}\n\n/**\n * @param {?} nodeIndex\n * @param {?} exprs\n * @return
{?} */\n *^\nfunction callCheckStmt(nodeIndex, exprs) {\n if (exprs.length > 10) {\n return
CHECK_VAR.callFn([VIEW_VAR, literal(nodeIndex), literal(1 /* Dynamic */), literalArr(exprs)]);\n }\n else
{\n return CHECK_VAR.callFn([VIEW_VAR, literal(nodeIndex), literal(0 /* Inline */)].concat(exprs));\n
 }\n}\n\n/**\n * @param {?} nodeIndex\n * @param {?} bindingIdx\n * @param {?} expr\n * @return {?} */\n
*^\nfunction callUnwrapValue(nodeIndex, bindingIdx, expr) {\n return
importExpr(Identifiers.unwrapValue).callFn([\n VIEW_VAR, literal(nodeIndex), literal(bindingIdx), expr\n
]);\n}\n\n/**\n * @param {?} nodes\n * @param {?=} result\n * @return {?} */\n *^\nfunction
findStaticQueryIds(nodes, result) {\n if (result === void 0) { result = new Map();\n }\n nodes.forEach(function
(node) {\n var /** @type {?} */ staticQueryIds = new Set();\n var /** @type {?} */ dynamicQueryIds =
new Set();\n var /** @type {?} */ queryMatches = /** @type {?} */ ((undefined));\n if (node instanceof
ElementAst) {\n findStaticQueryIds(node.children, result);\n node.children.forEach(function (child)
{\n var /** @type {?} */ childData = /** @type {?} */ ((result.get(child)));\n
childData.staticQueryIds.forEach(function (queryId) { return staticQueryIds.add(queryId); });\n
childData.dynamicQueryIds.forEach(function (queryId) { return dynamicQueryIds.add(queryId); });\n });\n
 queryMatches = node.queryMatches;\n }\n else if (node instanceof EmbeddedTemplateAst) {\n
findStaticQueryIds(node.children, result);\n node.children.forEach(function (child) {\n var /**
@type {?} */ childData = /** @type {?} */ ((result.get(child)));\n
childData.staticQueryIds.forEach(function (queryId) { return dynamicQueryIds.add(queryId); });\n
childData.dynamicQueryIds.forEach(function (queryId) { return dynamicQueryIds.add(queryId); });\n });\n
 queryMatches = node.queryMatches;\n }\n if (queryMatches) {\n
queryMatches.forEach(function (match) { return staticQueryIds.add(match.queryId); });\n }\n
dynamicQueryIds.forEach(function (queryId) { return staticQueryIds.delete(queryId); });\n result.set(node, {\n
staticQueryIds: staticQueryIds, dynamicQueryIds: dynamicQueryIds });\n });\n return result;\n}\n\n/**\n *
@param {?} nodeStaticQueryIds\n * @return {?} */\n *^\nfunction staticViewQueryIds(nodeStaticQueryIds) {\n var
/** @type {?} */ staticQueryIds = new Set();\n var /** @type {?} */ dynamicQueryIds = new Set();\n
Array.from(nodeStaticQueryIds.values()).forEach(function (entry) {\n entry.staticQueryIds.forEach(function
(queryId) { return staticQueryIds.add(queryId); });\n entry.dynamicQueryIds.forEach(function (queryId) {\n
return dynamicQueryIds.add(queryId); });\n });\n dynamicQueryIds.forEach(function (queryId) { return
staticQueryIds.delete(queryId); });\n return { staticQueryIds: staticQueryIds, dynamicQueryIds: dynamicQueryIds
};\n}\n\n/**\n * @param {?} eventAst\n * @param {?} dirAst\n * @return {?} */\n *^\nfunction
elementEventNameAndTarget(eventAst, dirAst) {\n if (eventAst.isAnimation) {\n return {\n name:
\"@\" + eventAst.name + \".\" + eventAst.phase,\n target: dirAst && dirAst.directive.isComponent ?
'component' : null\n }; \n }\n else {\n return eventAst;\n }\n}\n\n/**\n * @param {?} queryIds\n *
@param {?} queryId\n * @param {?} isFirst\n * @return {?} */\n *^\nfunction
calcStaticDynamicQueryFlags(queryIds, queryId, isFirst) {\n var /** @type {?} */ flags = 0;\n // Note: We only
make queries static that query for a single item.\n // This is because of backwards compatibility with the old view
compiler...\n if (isFirst && (queryIds.staticQueryIds.has(queryId) || !queryIds.dynamicQueryIds.has(queryId))) {\n
flags |= 268435456 /* StaticQuery */;\n }\n else {\n flags |= 536870912 /* DynamicQuery */;\n }\n}

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return flags;\n\n/**\n * @param {?} target\n * @param {?} name\n * @return {?} */\nfunction
elementEventFullName(target, name) {\n return target ? target + \"\":" + name : name;\n}\n\n/**\n * @fileoverview
added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All
Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\n/**\n * A container for message extracted from the templates.\n
*/\nvar MessageBundle = /** @class */ (function () {\n function MessageBundle(_htmlParser, _implicitTags,
_implicitAttrs, _locale) {\n if (_locale === void 0) { _locale = null; }\n this._htmlParser = _htmlParser;\n
this._implicitTags = _implicitTags;\n this._implicitAttrs = _implicitAttrs;\n this._locale = _locale;\n
this._messages = [];\n }\n /**\n * @param {?} html\n * @param {?} url\n * @param {?}
interpolationConfig\n * @return {?} */\n MessageBundle.prototype.updateFromTemplate = /**\n *
@param {?} html\n * @param {?} url\n * @param {?} interpolationConfig\n * @return {?} */\n function (html, url, interpolationConfig) {\n var /** @type {?} */ htmlParserResult =
this._htmlParser.parse(html, url, true, interpolationConfig);\n if (htmlParserResult.errors.length) {\n
return htmlParserResult.errors;\n }\n var /** @type {?} */ i18nParserResult =
extractMessages(htmlParserResult.rootNodes, interpolationConfig, this._implicitTags, this._implicitAttrs);\n if
(i18nParserResult.errors.length) {\n return i18nParserResult.errors;\n }\n (_a =
this._messages).push.apply(_a, i18nParserResult.messages);\n return [];\n var _a;\n }; // Return the
message in the internal format\n // The public (serialized) format might be different, see the `write` method.\n
/**\n * @return {?} */\n MessageBundle.prototype.getMessages = /**\n * @return {?} */\n function () { return this._messages; }; // **\n * @param {?} serializer\n * @param {?=} filterSources\n *
@return {?} */\n MessageBundle.prototype.write = /**\n * @param {?} serializer\n * @param {?=}
filterSources\n * @return {?} */\n function (serializer, filterSources) {\n var /** @type {?} */
messages = {};\n var /** @type {?} */ mapperVisitor = new MapPlaceholderNames(); // Deduplicate
messages based on their ID\n this._messages.forEach(function (message) {\n var /** @type {?} */ id =
serializer.digest(message);\n if (!messages.hasOwnProperty(id)) {\n messages[id] = message;\n
 }\n else {\n (_a = messages[id].sources).push.apply(_a, message.sources);\n }\n var
_a;\n }); // Transform placeholder names using the serializer mapping\n var /** @type {?} */
msgList = Object.keys(messages).map(function (id) {\n var /** @type {?} */ mapper =
serializer.createNameMapper(messages[id]);\n var /** @type {?} */ src = messages[id];\n var /**
@type {?} */ nodes = mapper ? mapperVisitor.convert(src.nodes, mapper) : src.nodes;\n var /** @type {?} */
transformedMessage = new Message(nodes, {}, {}, src.meaning, src.description, id);\n transformedMessage.sources = src.sources;\n if (filterSources) {\n
transformedMessage.sources.forEach(function (source) { return source.filePath = filterSources(source.filePath);
});\n }\n return transformedMessage;\n });\n return serializer.write(msgList, this._locale);\n
};\n return MessageBundle;\n})();\nvar MapPlaceholderNames = /** @class */ (function (_super) {\n __extends(MapPlaceholderNames, _super);\n function MapPlaceholderNames() {\n return _super !== null
&& _super.apply(this, arguments) || this;\n }\n /**\n * @param {?} nodes\n * @param {?} mapper\n *
@return {?} */\n MapPlaceholderNames.prototype.convert = /**\n * @param {?} nodes\n * @param
{?} mapper\n * @return {?} */\n function (nodes, mapper) {\n var _this = this;\n return mapper ?
nodes.map(function (n) { return n.visit(_this, mapper); }) : nodes;\n }; // **\n * @param {?} ph\n *
@param {?} mapper\n * @return {?} */\n MapPlaceholderNames.prototype.visitTagPlaceholder = /**\n *
@param {?} ph\n * @param {?} mapper\n * @return {?} */\n function (ph, mapper) {\n var _this
= this;\n var /** @type {?} */ startName = /** @type {?} */ ((mapper.toPublicName(ph.startName)));\n var
/** @type {?} */ closeName = ph.closeName ? /** @type {?} */ ((mapper.toPublicName(ph.closeName))) :
ph.closeName;\n var /** @type {?} */ children = ph.children.map(function (n) { return n.visit(_this, mapper);
});\n return new TagPlaceholder(ph.tag, ph.attrs, startName, closeName, children, ph.isVoid, ph.sourceSpan);\n
};\n /**\n * @param {?} ph\n * @param {?} mapper\n * @return {?} */\n MapPlaceholderNames.prototype.visitPlaceholder = /**\n * @param {?} ph\n * @param {?} mapper\n *

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@return {?} \n * \n function (ph, mapper) { \n return new Placeholder(ph.value, /** @type {?} */
((mapper.toPublicName(ph.name))), ph.sourceSpan); \n }; \n /** \n * @param {?} ph \n * @param {?}
mapper \n * @return {?} \n * \n MapPlaceholderNames.prototype.visitIcuPlaceholder = /** \n * @param
 {?} ph \n * @param {?} mapper \n * @return {?} \n * \n function (ph, mapper) { \n return new
IcuPlaceholder(ph.value, /** @type {?} */ ((mapper.toPublicName(ph.name))), ph.sourceSpan); \n }; \n return
MapPlaceholderNames; \n } (CloneVisitor)); \n \n /** \n * @fileoverview added by tsickle \n * @suppress {checkTypes}
checked by tsc \n * \n /** \n * @license \n * Copyright Google Inc. All Rights Reserved. \n * \n * Use of this source
code is governed by an MIT-style license that can be \n * found in the LICENSE file at https://angular.io/license \n
* \n \n var GeneratedFile = /** @class */ (function () { \n function GeneratedFile(srcFileUrl, genFileUrl,
sourceOrStmts) { \n this.srcFileUrl = srcFileUrl; \n this.genFileUrl = genFileUrl; \n if (typeof
sourceOrStmts === 'string') { \n this.source = sourceOrStmts; \n this.stmts = null; \n } \n else { \n
this.source = null; \n this.stmts = sourceOrStmts; \n } \n } \n /** \n * @param {?} other \n *
@return {?} \n * \n GeneratedFile.prototype.isEquivalent = /** \n * @param {?} other \n * @return {?} \n
* \n function (other) { \n if (this.genFileUrl !== other.genFileUrl) { \n return false; \n } \n if
(this.source) { \n return this.source === other.source; \n } \n if (other.stmts === null) { \n return
false; \n } \n // Note: the constructor guarantees that if this.source is not filled, \n // then this.stmts is. \n
return areAllEquivalent(/** @type {?} */ ((this.stmts)), /** @type {?} */ ((other.stmts))); \n }; \n return
GeneratedFile; \n }()); \n \n /** \n * @param {?} file \n * @param {?} preamble \n * @return {?} \n * \n function
toTypeScript(file, preamble) { \n if (preamble === void 0) { preamble = ""; } \n if (!file.stmts) { \n throw new
Error("Illegal state: No stmts present on GeneratedFile " + file.genFileUrl); \n } \n return new
TypeScriptEmitter().emitStatements(file.genFileUrl, file.stmts, preamble); \n } \n \n \n /** \n * @fileoverview added by
tsickle \n * @suppress {checkTypes} checked by tsc \n * \n /** \n * @license \n * Copyright Google Inc. All Rights
Reserved. \n * \n * Use of this source code is governed by an MIT-style license that can be \n * found in the
LICENSE file at https://angular.io/license \n * \n \n /** \n * @record \n * \n /** \n * @param {?} moduleMeta \n *
@param {?} reflector \n * @return {?} \n * \n function listLazyRoutes(moduleMeta, reflector) { \n var /** @type
 {?} */ allLazyRoutes = []; \n for (var _i = 0, _a = moduleMeta.transitiveModule.providers; _i < _a.length; _i++)
{ \n var _b = _a[_i], provider = _b.provider, module = _b.module; \n if (tokenReference(provider.token) ===
reflector.ROUTES) { \n var /** @type {?} */ loadChildren = _collectLoadChildren(provider.useValue); \n
for (var _c = 0, loadChildren_1 = loadChildren; _c < loadChildren_1.length; _c++) { \n var route =
loadChildren_1[_c]; \n allLazyRoutes.push(parseLazyRoute(route, reflector, module.reference)); \n
} \n } \n } \n return allLazyRoutes; \n } \n \n /** \n * @param {?} routes \n * @param {?} target \n * @return {?} \n
* \n function _collectLoadChildren(routes, target) { \n if (target === void 0) { target = []; } \n if (typeof routes
=== 'string') { \n target.push(routes); \n } \n else if (Array.isArray(routes)) { \n for (var _i = 0, routes_1 =
routes; _i < routes_1.length; _i++) { \n var route = routes_1[_i]; \n _collectLoadChildren(route,
target); \n } \n } \n else if (routes.loadChildren) { \n _collectLoadChildren(routes.loadChildren, target); \n
} \n else if (routes.children) { \n _collectLoadChildren(routes.children, target); \n } \n return
target; \n } \n \n /** \n * @param {?} route \n * @param {?} reflector \n * @param {?} module \n * @return {?} \n
* \n function parseLazyRoute(route, reflector, module) { \n var _a = route.split('#'), routePath = _a[0], routeName =
_a[1]; \n var /** @type {?} */ referencedModule = reflector.resolveExternalReference({ \n moduleName:
routePath, \n name: routeName, \n }, module ? module.filePath : undefined); \n return { route: route, module:
module || referencedModule, referencedModule: referencedModule }; \n } \n \n \n /** \n * @fileoverview added by
tsickle \n * @suppress {checkTypes} checked by tsc \n * \n /** \n * @license \n * Copyright Google Inc. All Rights
Reserved. \n * \n * Use of this source code is governed by an MIT-style license that can be \n * found in the
LICENSE file at https://angular.io/license \n * \n \n var ResolvedStaticSymbol = /** @class */ (function () { \n
function ResolvedStaticSymbol(symbol, metadata) { \n this.symbol = symbol; \n this.metadata = metadata; \n
} \n return ResolvedStaticSymbol; \n }()); \n \n /** \n * The host of the SymbolResolverHost disconnects the
implementation from TypeScript / other \n * language \n * services and from underlying file systems. \n * @record \n
* \n \n var SUPPORTED_SCHEMA_VERSION = 4; \n \n /** \n * This class is responsible for loading metadata per

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symbol,\n * and normalizing references between symbols.\n *\n * Internally, it only uses symbols without
members,\n * and deduces the values for symbols with members based\n * on these symbols.\n */\nvar
StaticSymbolResolver = /** @class */ (function () {\n function StaticSymbolResolver(host, staticSymbolCache,
summaryResolver, errorRecorder) {\n this.host = host;\n this.staticSymbolCache = staticSymbolCache;\n
 this.summaryResolver = summaryResolver;\n this.errorRecorder = errorRecorder;\n this.metadataCache =
new Map();\n this.resolvedSymbols = new Map();\n this.resolvedFilePaths = new Set();\n
this.importAs = new Map();\n this.symbolResourcePaths = new Map();\n this.symbolFromFile = new
Map();\n this.knownFileNameToModuleNames = new Map();\n }\n /**\n * @param {?} staticSymbol\n
 * @return {?} \n */\n StaticSymbolResolver.prototype.resolveSymbol = /**\n * @param {?} staticSymbol\n
 * @return {?} \n */\n function (staticSymbol) {\n if (staticSymbol.members.length > 0) {\n return
/** @type {?} */ ((this._resolveSymbolMembers(staticSymbol)));\n }\n // Note: always ask for a summary
first,\n // as we might have read shallow metadata via a .d.ts file\n // for the symbol.\n var /** @type
{?} */ resultFromSummary = /** @type {?} */ ((this._resolveSymbolFromSummary(staticSymbol));\n if
(resultFromSummary) {\n return resultFromSummary;\n }\n var /** @type {?} */ resultFromCache
= this.resolvedSymbols.get(staticSymbol);\n if (resultFromCache) {\n return resultFromCache;\n }\n
 // Note: Some users use libraries that were not compiled with ngc, i.e. they don't\n // have summaries, only
.d.ts files. So we always need to check both, the summary\n // and metadata.\n
this._createSymbolsOf(staticSymbol.filePath);\n return /** @type {?} */
((this.resolvedSymbols.get(staticSymbol));\n });\n /**\n * getImportAs produces a symbol that can be used to
import the given symbol.\n * The import might be different than the symbol if the symbol is exported from\n *
a library with a summary; in which case we want to import the symbol from the\n * ngfactory re-export instead of
directly to avoid introducing a direct dependency\n * on an otherwise indirect dependency.\n */\n * @param
staticSymbol the symbol for which to generate a import symbol\n */\n /**\n * getImportAs produces a
symbol that can be used to import the given symbol.\n * The import might be different than the symbol if the
symbol is exported from\n * a library with a summary; in which case we want to import the symbol from the\n *
ngfactory re-export instead of directly to avoid introducing a direct dependency\n * on an otherwise indirect
dependency.\n */\n * @param {?} staticSymbol the symbol for which to generate a import symbol\n *
@param {=?} useSummaries\n * @return {?} \n */\n StaticSymbolResolver.prototype.getImportAs = /**\n *
getImportAs produces a symbol that can be used to import the given symbol.\n * The import might be different
than the symbol if the symbol is exported from\n * a library with a summary; in which case we want to import the
symbol from the\n * ngfactory re-export instead of directly to avoid introducing a direct dependency\n * on an
otherwise indirect dependency.\n */\n * @param {?} staticSymbol the symbol for which to generate a import
symbol\n * @param {=?} useSummaries\n * @return {?} \n */\n function (staticSymbol, useSummaries)
{\n if (useSummaries === void 0) { useSummaries = true; }\n if (staticSymbol.members.length) {\n
var /** @type {?} */ baseSymbol = this.getStaticSymbol(staticSymbol.filePath, staticSymbol.name);\n var
/** @type {?} */ baseImportAs = this.getImportAs(baseSymbol, useSummaries);\n return baseImportAs ?\n
this.getStaticSymbol(baseImportAs.filePath, baseImportAs.name, staticSymbol.members) :\n
null;\n }\n var /** @type {?} */ summarizedFileName =
stripSummaryForJitFileSuffix(staticSymbol.filePath);\n if (summarizedFileName !== staticSymbol.filePath) {\n
var /** @type {?} */ summarizedName = stripSummaryForJitNameSuffix(staticSymbol.name);\n var
/** @type {?} */ baseSymbol = this.getStaticSymbol(summarizedFileName, summarizedName,
staticSymbol.members);\n var /** @type {?} */ baseImportAs = this.getImportAs(baseSymbol,
useSummaries);\n return baseImportAs ?\n
this.getStaticSymbol(summaryForJitFileName(baseImportAs.filePath), summaryForJitName(baseImportAs.name),
baseSymbol.members) :\n null;\n }\n var /** @type {?} */ result = (useSummaries &&
this.summaryResolver.getImportAs(staticSymbol)) || null;\n if (!result) {\n result = /** @type {?} */
((this.importAs.get(staticSymbol)));\n }\n return result;\n });\n /**\n * getResourcePath produces the
path to the original location of the symbol and should\n * be used to determine the relative location of resource

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references recorded in\n * symbol metadata.\n *\n /**\n * getResourcePath produces the path to the
original location of the symbol and should\n * be used to determine the relative location of resource references
recorded in\n * symbol metadata.\n * @param {?} staticSymbol\n * @return {?}\n *\n StaticSymbolResolver.prototype.getResourcePath = /**\n * getResourcePath produces the path to the original
location of the symbol and should\n * be used to determine the relative location of resource references recorded
in\n * symbol metadata.\n * @param {?} staticSymbol\n * @return {?}\n *\n */\n function (staticSymbol)\n {\n return this.symbolResourcePaths.get(staticSymbol) || staticSymbol.filePath;\n };\n /**\n *
getTypeAry returns the number of generic type parameters the given symbol\n * has. If the symbol is not a type
the result is null.\n *\n */\n /**\n * getTypeAry returns the number of generic type parameters the given
symbol\n * has. If the symbol is not a type the result is null.\n * @param {?} staticSymbol\n * @return {?}\n *\n */\n StaticSymbolResolver.prototype.getTypeAry = /**\n * getTypeAry returns the number of generic type
parameters the given symbol\n * has. If the symbol is not a type the result is null.\n * @param {?}
staticSymbol\n * @return {?}\n */\n function (staticSymbol) {\n // If the file is a factory/ngsummary file,
don't resolve the symbol as doing so would\n // cause the metadata for an factory/ngsummary file to be loaded
which doesn't exist.\n // All references to generated classes must include the correct arity whenever\n //
generating code.\n if (isGeneratedFile(staticSymbol.filePath)) {\n return null;\n }\n var /**
@type {?} */ resolvedSymbol = unwrapResolvedMetadata(this.resolveSymbol(staticSymbol));\n while
(resolvedSymbol && resolvedSymbol.metadata instanceof StaticSymbol) {\n resolvedSymbol =
unwrapResolvedMetadata(this.resolveSymbol(resolvedSymbol.metadata));\n }\n return (resolvedSymbol
&& resolvedSymbol.metadata && resolvedSymbol.metadata.arity) || null;\n };\n /**\n * @param {?}
filePath\n * @return {?}\n */\n StaticSymbolResolver.prototype.getKnownModuleName = /**\n *
@param {?} filePath\n * @return {?}\n */\n function (filePath) {\n return
this.knownFileNameToModuleNames.get(filePath) || null;\n };\n /**\n * @param {?} sourceSymbol\n *
@param {?} targetSymbol\n * @return {?}\n */\n StaticSymbolResolver.prototype.recordImportAs = /**\n *
@param {?} sourceSymbol\n * @param {?} targetSymbol\n * @return {?}\n */\n function
(sourceSymbol, targetSymbol) {\n sourceSymbol.assertNoMembers();\n targetSymbol.assertNoMembers();\n this.importAs.set(sourceSymbol, targetSymbol);\n };\n /**\n *
@param {?} fileName\n * @param {?} moduleName\n * @return {?}\n */\n StaticSymbolResolver.prototype.recordModuleNameForFileName = /**\n * @param {?} fileName\n *
@param {?} moduleName\n * @return {?}\n */\n function (fileName, moduleName) {\n
this.knownFileNameToModuleNames.set(fileName, moduleName);\n };\n /**\n * Invalidate all information
derived from the given file.\n * @param fileName the file to invalidate\n */\n /**\n * Invalidate all
information derived from the given file.\n * @param {?} fileName the file to invalidate\n * @return
{?}\n */\n StaticSymbolResolver.prototype.invalidateFile = /**\n * Invalidate all information derived from
the given file.\n * @param {?} fileName the file to invalidate\n * @return {?}\n */\n function
(fileName) {\n this.metadataCache.delete(fileName);\n this.resolvedFilePaths.delete(fileName);\n var
/** @type {?} */ symbols = this.symbolFromFile.get(fileName);\n if (symbols) {\n
this.symbolFromFile.delete(fileName);\n for (var _i = 0, symbols_1 = symbols; _i < symbols_1.length; _i++)\n {\n var symbol = symbols_1[_i];\n this.resolvedSymbols.delete(symbol);\n
this.importAs.delete(symbol);\n this.symbolResourcePaths.delete(symbol);\n }\n }\n };\n /**
@internal *\n /**\n * @template T\n * @param {?} cb\n * @return {?}\n */\n StaticSymbolResolver.prototype.ignoreErrorsFor = /**\n * @template T\n * @param {?} cb\n * @return
{?}\n */\n function (cb) {\n var /** @type {?} */ recorder = this.errorRecorder;\n this.errorRecorder =
function () { };\n try {\n return cb();\n }\n finally {\n this.errorRecorder = recorder;\n
 }\n };\n /**\n * @param {?} staticSymbol\n * @return {?}\n */\n StaticSymbolResolver.prototype._resolveSymbolMembers = /**\n * @param {?} staticSymbol\n * @return
{?}\n */\n function (staticSymbol) {\n var /** @type {?} */ members = staticSymbol.members;\n var
/** @type {?} */ baseResolvedSymbol = this.resolveSymbol(this.getStaticSymbol(staticSymbol.filePath,

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staticSymbol.name));\n if (!baseResolvedSymbol) {\n return null;\n }\n var /** @type {?} */\n baseMetadata = unwrapResolvedMetadata(baseResolvedSymbol.metadata);\n if (baseMetadata instanceof\n StaticSymbol) {\n return new ResolvedStaticSymbol(staticSymbol,\n this.getStaticSymbol(baseMetadata.filePath, baseMetadata.name, members));\n }\n else if (baseMetadata\n && baseMetadata.__symbolic === 'class') {\n if (baseMetadata.statics && members.length === 1) {\n return new ResolvedStaticSymbol(staticSymbol, baseMetadata.statics[members[0]]);\n }\n }\n else\n {\n var /** @type {?} */ value = baseMetadata;\n for (var /** @type {?} */ i = 0; i < members.length\n && value; i++) {\n value = value[members[i]];\n }\n return new\n ResolvedStaticSymbol(staticSymbol, value);\n }\n return null;\n};\n/**\n * @param {?} staticSymbol\n * @return {?}\n */\nStaticSymbolResolver.prototype._resolveSymbolFromSummary = /**\n * @param {?} staticSymbol\n * @return {?}\n */\nfunction (staticSymbol) {\n var /** @type {?} */\n summary = this.summaryResolver.resolveSummary(staticSymbol);\n return summary ? new\n ResolvedStaticSymbol(staticSymbol, summary.metadata) : null;\n};\n/**\n * getStaticSymbol produces a\n Type whose metadata is known but whose implementation is not loaded.\n * All types passed to the\n StaticResolver should be pseudo-types returned by this method.\n * @param declarationFile the absolute\n path of the file where the symbol is declared\n * @param name the name of the type.\n * @param members a\n symbol for a static member of the named type\n */\n/**\n * getStaticSymbol produces a Type whose\n metadata is known but whose implementation is not loaded.\n * All types passed to the StaticResolver should be\n pseudo-types returned by this method.\n * @param {?} declarationFile the absolute path of the file where\n the symbol is declared\n * @param {?} name the name of the type.\n * @param {?=} members a symbol for a\n static member of the named type\n * @return {?}\n */\nStaticSymbolResolver.prototype.getStaticSymbol =\n/**\n * getStaticSymbol produces a Type whose metadata is known but whose implementation is not loaded.\n * All types passed to the StaticResolver should be pseudo-types returned by this method.\n * @param {?} declarationFile the absolute path of the file where the symbol is declared\n * @param {?} name the name of the\n type.\n * @param {?=} members a symbol for a static member of the named type\n * @return {?}\n */\nfunction (declarationFile, name, members) {\n return this.staticSymbolCache.get(declarationFile, name,\n members);\n};\n/**\n * hasDecorators checks a file's metadata for the presense of decorators without\n evalutating the\n * metadata.\n * @param filePath the absolute path to examine for decorators.\n * @returns true if any class in the file has a decorator.\n */\n/**\n * hasDecorators checks a file's metadata for\n the presense of decorators without evalutating the\n * metadata.\n * @param {?} filePath the absolute\n path to examine for decorators.\n * @return {?} true if any class in the file has a decorator.\n */\nStaticSymbolResolver.prototype.hasDecorators = /**\n * hasDecorators checks a file's metadata for the presense\n of decorators without evalutating the\n * metadata.\n * @param {?} filePath the absolute path to examine\n for decorators.\n * @return {?} true if any class in the file has a decorator.\n */\nfunction (filePath) {\n var /** @type {?} */ metadata = this.getModuleMetadata(filePath);\n if (metadata['metadata']) {\n return\n Object.keys(metadata['metadata']).some(function (metadataKey) {\n var /** @type {?} */ entry =\n metadata['metadata'][metadataKey];\n return entry && entry.__symbolic === 'class' &&\n entry.decorators;\n });\n }\n return false;\n};\n/**\n * @param {?} filePath\n * @return\n {?}\n */\nStaticSymbolResolver.prototype.getSymbolsOf = /**\n * @param {?} filePath\n * @return\n {?}\n */\nfunction (filePath) {\n var /** @type {?} */ summarySymbols =\n this.summaryResolver.getSymbolsOf(filePath);\n if (summarySymbols) {\n return summarySymbols;\n }\n // Note: Some users use libraries that were not compiled with ngc, i.e. they don't\n // have summaries,\n only .d.ts files, but `summaryResolver.isLibraryFile` returns true.\n this._createSymbolsOf(filePath);\n var\n /** @type {?} */ metadataSymbols = [];\n this.resolvedSymbols.forEach(function (resolvedSymbol) {\n if (resolvedSymbol.symbol.filePath === filePath) {\n metadataSymbols.push(resolvedSymbol.symbol);\n }\n });\n return metadataSymbols;\n};\n/**\n * @param {?} filePath\n * @return {?}\n */\nStaticSymbolResolver.prototype._createSymbolsOf = /**\n * @param {?} filePath\n * @return {?}\n */\nfunction (filePath) {\n var _this = this;\n if (this.resolvedFilePaths.has(filePath)) {\n return;\n }\n}

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 }\n this.resolvedFilePaths.add(filePath);\n var /** @type {?} */ resolvedSymbols = [];\n var /**
@type {?} */ metadata = this.getModuleMetadata(filePath);\n if (metadata['importAs']) {\n // Index
bundle indices should use the importAs module name defined\n // in the bundle.\n
this.knownFileNameToModuleNames.set(filePath, metadata['importAs']);\n }\n // handle the symbols in
one of the re-export location\n if (metadata['exports']) {\n var _loop_1 = function (moduleExport) {\n
// handle the symbols in the list of explicitly re-exported symbols.\n if (moduleExport.export) {\n
moduleExport.export.forEach(function (exportSymbol) {\n var /** @type {?} */
symbolName;\n if (typeof exportSymbol === 'string') {\n symbolName =
exportSymbol;\n }\n else {\n symbolName = exportSymbol.as;\n
}\n symbolName = unescapeIdentifier(symbolName);\n var /** @type {?} */
symName = symbolName;\n if (typeof exportSymbol !== 'string') {\n symName =
unescapeIdentifier(exportSymbol.name);\n }\n var /** @type {?} */ resolvedModule =
_this.resolveModule(moduleExport.from, filePath);\n if (resolvedModule) {\n var /**
@type {?} */ targetSymbol = _this.getStaticSymbol(resolvedModule, symName);\n var /** @type
{?} */ sourceSymbol = _this.getStaticSymbol(filePath, symbolName);\n
resolvedSymbols.push(_this.createExport(sourceSymbol, targetSymbol));\n }\n });\n
}\n else {\n // handle the symbols via export * directives.\n var /** @type {?} */
resolvedModule = this._1.resolveModule(moduleExport.from, filePath);\n if (resolvedModule) {\n
var /** @type {?} */ nestedExports = this._1.getSymbolsOf(resolvedModule);\n
nestedExports.forEach(function (targetSymbol) {\n var /** @type {?} */ sourceSymbol =
_this.getStaticSymbol(filePath, targetSymbol.name);\n
resolvedSymbols.push(_this.createExport(sourceSymbol, targetSymbol));\n });\n }\n
}\n });\n var this_1 = this;\n for (var _i = 0, _a = metadata['exports']; _i < _a.length; _i++) {\n
var moduleExport = _a[_i];\n _loop_1(moduleExport);\n }\n }\n // handle the
actual metadata. Has to be after the exports\n // as there might be collisions in the names, and we want the
symbols\n // of the current module to win over reexports.\n if (metadata['metadata']) {\n // handle
direct declarations of the symbol\n var /** @type {?} */ topLevelSymbolNames_1 = new
Set(Object.keys(metadata['metadata']).map(unescapeIdentifier));\n var /** @type {?} */ origins_1 =
metadata['origins'] || {};\n Object.keys(metadata['metadata']).forEach(function (metadataKey) {\n
var /** @type {?} */ symbolMeta = metadata['metadata'][metadataKey];\n var /** @type {?} */ name =
unescapeIdentifier(metadataKey);\n var /** @type {?} */ symbol = _this.getStaticSymbol(filePath,
name);\n var /** @type {?} */ origin = origins_1.hasOwnProperty(metadataKey) &&
origins_1[metadataKey];\n if (origin) {\n // If the symbol is from a bundled index, use the
declaration location of the\n // symbol so relative references (such as './my.html') will be calculated\n
// correctly.\n var /** @type {?} */ originFilePath = _this.resolveModule(origin, filePath);\n
if (!originFilePath) {\n _this.reportError(new Error("Couldn't resolve original symbol for \" +
origin + \" from \" + filePath));\n }\n else {\n
_this.symbolResourcePaths.set(symbol, originFilePath);\n }\n }\n
resolvedSymbols.push(_this.createResolvedSymbol(symbol, filePath, topLevelSymbolNames_1, symbolMeta));\n
});\n }\n resolvedSymbols.forEach(function (resolvedSymbol) { return
_this.resolvedSymbols.set(resolvedSymbol.symbol, resolvedSymbol); });\n this.symbolFromFile.set(filePath,
resolvedSymbols.map(function (resolvedSymbol) { return resolvedSymbol.symbol; }));\n });\n /**\n
 * @param {?} sourceSymbol\n * @param {?} topLevelPath\n * @param {?} topLevelSymbolNames\n *
@param {?} metadata\n * @return {?}\n */\n StaticSymbolResolver.prototype.createResolvedSymbol =
/**\n
 * @param {?} sourceSymbol\n * @param {?} topLevelPath\n * @param {?}
topLevelSymbolNames\n * @param {?} metadata\n * @return {?}\n */\n function (sourceSymbol,
topLevelPath, topLevelSymbolNames, metadata) {\n var _this = this;\n // For classes that don't have
Angular summaries / metadata,\n // we only keep their arity, but nothing else\n // (e.g. their constructor

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parameters);\n // We do this to prevent introducing deep imports\n // as we didn't generate .ngfactory.ts files
with proper reexports.\n if (this.summaryResolver.isLibraryFile(sourceSymbol.filePath) && metadata &&\n metadata['__symbolic'] === 'class') {\n var /** @type {?} */ transformedMeta_1 = { __symbolic: 'class',
arity: metadata.arity };
return new ResolvedStaticSymbol(sourceSymbol, transformedMeta_1);\n }\n var /** @type {?} */ _originalFileMemo;\n var /** @type {?} */ getOriginalName = function () {\n if
(!_originalFileMemo) {\n // Guess what the original file name is from the reference. If it has a `.d.ts`
extension\n // replace it with `.ts`. If it already has `.ts` just leave it in place. If it doesn't have\n //
.ts or .d.ts, append `.ts`. Also, if it is in `node_modules`, trim the `node_module`\n // location as it is not
important to finding the file.\n _originalFileMemo =\n _this.host.getOutputName(topLevelPath.replace(/((\\.ts)|\\.d\\.ts))/, '.ts')\n
.replace(/^(.*node_modules[/\\\\\\], "));\n }\n return _originalFileMemo;\n };\n var /** @type
{?} */ self = this;\n var ReferenceTransformer = /** @class */ (function (_super) {\n
__extends(ReferenceTransformer, _super);\n function ReferenceTransformer() {\n return _super
!== null && _super.apply(this, arguments) || this;\n }\n /**\n * @param {?} map\n *
@param {?} functionParams\n * @return {?}\n */\n ReferenceTransformer.prototype.visitStringMap = /**\n * @param {?} map\n * @param {?}
functionParams\n * @return {?}\n */\n function (map, functionParams) {\n var /**
@type {?} */ symbolic = map['__symbolic'];\n if (symbolic === 'function') {\n var /** @type
{?} */ oldLen = functionParams.length;\n functionParams.push.apply(functionParams,
(map['parameters'] || []));\n var /** @type {?} */ result = _super.prototype.visitStringMap.call(this, map,
functionParams);\n functionParams.length = oldLen;\n return result;\n }\n
else if (symbolic === 'reference') {\n var /** @type {?} */ module = map['module'];\n var
/** @type {?} */ name_1 = map['name'] ? unescapeIdentifier(map['name']) : map['name'];\n if
(!name_1) {\n return null;\n }\n var /** @type {?} */ filePath = void 0;\n
 if (module) {\n filePath = /** @type {?} */ ((self.resolveModule(module,
sourceSymbol.filePath)));\n }\n if (!filePath) {\n return {\n
__symbolic: 'error',\n message: `\"Could not resolve \" + module + \" relative to \" +
sourceSymbol.filePath + \".\"`,\n line: map[\"line\"],\n character:\n
map[\"character\"],\n fileName: getOriginalName()\n };\n }\n
 return {\n __symbolic: 'resolved',\n symbol:\n
self.getStaticSymbol(filePath, name_1),\n line: map[\"line\"],\n character:\n
map[\"character\"],\n fileName: getOriginalName()\n };\n }\n
else if (functionParams.indexOf(name_1) >= 0) {\n // reference to a function parameter\n
return { __symbolic: 'reference', name: name_1 };
 }\n else {\n if
(topLevelSymbolNames.has(name_1)) {\n return self.getStaticSymbol(topLevelPath, name_1);\n
 }\n // ambient value\n return null;\n }\n }\n else if
(symbolic === 'error') {\n return __assign({}, map, { fileName: getOriginalName() });\n }\n
 else {\n return _super.prototype.visitStringMap.call(this, map, functionParams);\n }\n
 };\n return ReferenceTransformer;\n})(ValueTransformer);\n var /** @type {?} */
transformedMeta = visitValue(metadata, new ReferenceTransformer(), []);\n var /** @type {?} */
unwrappedTransformedMeta = unwrapResolvedMetadata(transformedMeta);\n if (unwrappedTransformedMeta
instanceof StaticSymbol) {\n return this.createExport(sourceSymbol, unwrappedTransformedMeta);\n
 }\n return new ResolvedStaticSymbol(sourceSymbol, transformedMeta);\n};\n/**\n * @param {?}
sourceSymbol\n * @param {?} targetSymbol\n * @return {?}\n */\nStaticSymbolResolver.prototype.createExport = /**\n * @param {?} sourceSymbol\n * @param {?}
targetSymbol\n * @return {?}\n */\nfunction (sourceSymbol, targetSymbol) {\n
sourceSymbol.assertNoMembers();\n targetSymbol.assertNoMembers();\n if
(this.summaryResolver.isLibraryFile(sourceSymbol.filePath) &&\n

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this.summaryResolver.isLibraryFile(targetSymbol.filePath)) {\n // This case is for an ng library importing
symbols from a plain ts library\n // transitively.\n // Note: We rely on the fact that we discover symbols
in the direction\n // from source files to library files\n this.importAs.set(targetSymbol,
this.getImportAs(sourceSymbol) || sourceSymbol);\n }\n return new ResolvedStaticSymbol(sourceSymbol,
targetSymbol);\n };\n /**\n * @param {?} error\n * @param {?=} context\n * @param {?=} path\n * @return {?}\n */\n StaticSymbolResolver.prototype.reportError = /**\n * @param {?} error\n * @param {?=} context\n * @param {?=} path\n * @return {?}\n */\n function (error, context, path) {\n if
(this.errorRecorder) {\n this.errorRecorder(error, (context && context.filePath) || path);\n }\n else
{\n throw error;\n }\n };\n /**\n * @param {?} module an absolute path to a module file.\n * @return {?}\n */\n StaticSymbolResolver.prototype.getModuleMetadata = /**\n * @param {?} module an
absolute path to a module file.\n * @return {?}\n */\n function (module) {\n var /** @type {?} */
moduleMetadata = this.metadataCache.get(module);\n if (!moduleMetadata) {\n var /** @type {?} */
moduleMetadatas = this.host.getMetadataFor(module);\n if (moduleMetadatas) {\n var /** @type
{?} */ maxVersion_1 = -1;\n moduleMetadatas.forEach(function (md) {\n if (md &&
md['version'] > maxVersion_1) {\n maxVersion_1 = md['version'];\n moduleMetadata
= md;\n }\n });\n }\n if (!moduleMetadata) {\n moduleMetadata =\n { __symbolic: 'module', version: SUPPORTED_SCHEMA_VERSION, module: module, metadata: {} };\n }\n if (moduleMetadata['version'] != SUPPORTED_SCHEMA_VERSION) {\n var /** @type
{?} */ errorMessage = moduleMetadata['version'] == 2 ?\n \"Unsupported metadata version \" +
moduleMetadata['version'] + \" for module \" + module + \". This module should be compiled with a newer version
of ngc\" :\n \"Metadata version mismatch for module \" + module + \", found version \" +
moduleMetadata['version'] + \", expected \" + SUPPORTED_SCHEMA_VERSION;\n }\n this.reportError(new Error(errorMessage));\n }\n this.metadataCache.set(module, moduleMetadata);\n }\n return moduleMetadata;\n };\n /**\n * @param {?} module\n * @param {?} symbolName\n * @param {?=} containingFile\n * @return {?}\n */\n StaticSymbolResolver.prototype.getSymbolByModule
= /**\n * @param {?} module\n * @param {?} symbolName\n * @param {?=} containingFile\n * @return {?}\n */\n function (module, symbolName, containingFile) {\n var /** @type {?} */ filePath =
this.resolveModule(module, containingFile);\n if (!filePath) {\n this.reportError(new Error(\"Could not
resolve module \" + module + (containingFile ? ' relative to ' +\n containingFile : \"));\n return
this.getStaticSymbol(\"ERROR:\" + module, symbolName);\n }\n return this.getStaticSymbol(filePath,
symbolName);\n };\n /**\n * @param {?} module\n * @param {?=} containingFile\n * @return {?}\n */\n StaticSymbolResolver.prototype.resolveModule = /**\n * @param {?} module\n * @param {?=}
containingFile\n * @return {?}\n */\n function (module, containingFile) {\n try {\n return
this.host.moduleNameToFileNames(module, containingFile);\n }\n catch (/** @type {?} */ e) {\n console.error(\"Could not resolve module \" + module + \"\" relative to file \" + containingFile);\n this.reportError(e, undefined, containingFile);\n }\n return null;\n };\n return
StaticSymbolResolver;\n})();\n /**\n * @param {?} identifier\n * @return {?}\n */\n function
unescapeIdentifier(identifier) {\n return identifier.startsWith('__') ? identifier.substr(1) : identifier;\n }\n /**\n * @param {?} metadata\n * @return {?}\n */\n function unwrapResolvedMetadata(metadata) {\n if (metadata &&
metadata.__symbolic === 'resolved') {\n return metadata.symbol;\n }\n return metadata;\n }\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n /**\n * @param {?} srcFileName\n * @param {?} forJitCtx\n * @param {?} summaryResolver\n * @param {?} symbolResolver\n * @param {?} symbols\n * @param {?} types\n * @return {?}\n */\n function serializeSummaries(srcFileName,
forJitCtx, summaryResolver, symbolResolver, symbols, types) {\n var /** @type {?} */ toJsonSerializer = new
ToJsonSerializer(symbolResolver, summaryResolver, srcFileName);\n // for symbols, we use everything except
for the class metadata itself\n // (we keep the statics though), as the class metadata is contained in the\n //
CompileTypeSummary.\n symbols.forEach(function (resolvedSymbol) {\n return
toJsonSerializer.addSummary({ symbol: resolvedSymbol.symbol, metadata: resolvedSymbol.metadata });\n });\n };\n

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// Add type summaries.\n types.forEach(function (_a) {\n var summary = _a.summary, metadata =
_a.metadata;\n toJsonSerializer.addSummary({ symbol: summary.type.reference, metadata: undefined, type:
summary });\n });\n var _a = toJsonSerializer.serialize(), json = _a.json, exportAs = _a.exportAs;\n if
(forJitCtx) {\n var /** @type {?} */ forJitSerializer_1 = new ForJitSerializer(forJitCtx, symbolResolver,
summaryResolver);\n types.forEach(function (_a) {\n var summary = _a.summary, metadata =
_a.metadata;\n forJitSerializer_1.addSourceType(summary, metadata);\n });\n toJsonSerializer.unprocessedSymbolSummariesBySymbol.forEach(function (summary) {\n if
(summaryResolver.isLibraryFile(summary.symbol.filePath) && summary.type) {\n
forJitSerializer_1.addLibType(summary.type);\n }\n });\n forJitSerializer_1.serialize(exportAs);\n
}\n return { json: json, exportAs: exportAs };}\n\n/**\n * @param {?} symbolCache\n * @param {?}
summaryResolver\n * @param {?} libraryFileName\n * @param {?} json\n * @return {?}\n */\nfunction
deserializeSummaries(symbolCache, summaryResolver, libraryFileName, json) {\n var /** @type {?} */
deserializer = new FromJsonDeserializer(symbolCache, summaryResolver);\n return
deserializer.deserialize(libraryFileName, json);\n}\n\n/**\n * @param {?} outputCtx\n * @param {?} reference\n *
@return {?}\n */\nfunction createForJitStub(outputCtx, reference) {\n return
createSummaryForJitFunction(outputCtx, reference, NULL_EXPR);\n}\n\n/**\n * @param {?} outputCtx\n *
@param {?} reference\n * @param {?} value\n * @return {?}\n */\nfunction
createSummaryForJitFunction(outputCtx, reference, value) {\n var /** @type {?} */ fnName =
summaryForJitName(reference.name);\n outputCtx.statements.push(fn([], [new ReturnStatement(value)], new
ArrayType(DYNAMIC_TYPE)).toDeclStmt(fnName, [new StmtModifier.Final, StmtModifier.Exported\n]));\n}\n\nvar ToJsonSerializer = /** @class */ (function (_super) {\n __extends(ToJsonSerializer, _super);\n
function ToJsonSerializer(symbolResolver, summaryResolver, srcFileName) {\n var _this = _super.call(this) ||
this;\n _this.symbolResolver = symbolResolver;\n _this.summaryResolver = summaryResolver;\n
_this.srcFileName = srcFileName;\n _this.symbols = [];\n _this.indexBySymbol = new Map();\n
_this.reexportedBy = new Map();\n _this.processedSummaryBySymbol = new Map();\n
_this.processedSummaries = [];\n _this.unprocessedSymbolSummariesBySymbol = new Map();\n
_this.moduleName = symbolResolver.getKnownModuleName(srcFileName);\n return _this;\n }\n /**\n *
@param {?} summary\n * @return {?}\n */\n ToJsonSerializer.prototype.addSummary = /**\n * @param
{?} summary\n * @return {?}\n */\n function (summary) {\n var _this = this;\n var /** @type {?} */
unprocessedSummary = this.unprocessedSymbolSummariesBySymbol.get(summary.symbol);\n var /** @type
{?} */ processedSummary = this.processedSummaryBySymbol.get(summary.symbol);\n if
(!unprocessedSummary) {\n unprocessedSummary = { symbol: summary.symbol, metadata: undefined };\n
 this.unprocessedSymbolSummariesBySymbol.set(summary.symbol, unprocessedSummary);\n
 processedSummary = { symbol: this.processValue(summary.symbol, 0 /* None */) };\n
 this.processedSummaries.push(processedSummary);\n
 this.processedSummaryBySymbol.set(summary.symbol, processedSummary);\n }\n if
(!unprocessedSummary.metadata && summary.metadata) {\n var /** @type {?} */ metadata_1 =
summary.metadata || {};\n if (metadata_1.__symbolic === 'class') {\n // For classes, we keep
everything except their class decorators.\n // We need to keep e.g. the ctor args, method names, method
decorators\n // so that the class can be extended in another compilation unit.\n // We don't keep
the class decorators as\n // 1) they refer to data\n // that should not cause a rebuild of
downstream compilation units\n // (e.g. inline templates of @Component, or @NgModule.declarations)\n
 // 2) their data is already captured in TypeSummaries, e.g. DirectiveSummary.\n var /** @type {?} */
clone_1 = {};\n Object.keys(metadata_1).forEach(function (propName) {\n if (propName
!== 'decorators') {\n clone_1[propName] = metadata_1[propName];\n }\n });\n
 metadata_1 = clone_1;\n }\n else if (isCall(metadata_1)) {\n if
(!isFunctionCall(metadata_1) && !isMethodCallOnVariable(metadata_1)) {\n // Don't store complex
calls as we won't be able to simplify them anyways later on.\n // Don't store complex calls as we won't

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be able to simplify them anyways later on.\n
message: 'Complex function calls are not supported.',\n
Note: We need to keep storing ctor calls for e.g.\n
unprocessedSummary.metadata = metadata_1;\n
this.processValue(metadata_1, 1 /* ResolveValue */);\n
this.summaryResolver.isLibraryFile(metadata_1.filePath)) {\n
this.symbols[/** @type {?} */ ((this.indexBySymbol.get(metadata_1)));\n
(!isLoweredSymbol(declarationSymbol.name)) {\n
codegen in the user file can have a reexport\n
as tsickle will change\n
typechecker.\n
them,\n
these symbols manually via .ngfactory files.\n
summary.symbol);\n
unprocessedSummary.type = summary.type;\n
symbols as for the ResolvedSymbols,\n
require\n
None */);\n
explicitly.\n
ngModuleSummary.exportedDirectives.concat(ngModuleSummary.exportedPipes).forEach(function (id) {\n
var /** @type {?} */ symbol = id.reference;\n
(!_this.summaryResolver.isLibraryFile(symbol.filePath) &&\n
!_this.unprocessedSymbolSummariesBySymbol.has(symbol)) {\n
_this.summaryResolver.resolveSummary(symbol);\n
_this.addSummary(summary_1);\n
* @return {?}\n
var _this = this;\n
moduleName: this.moduleName,\n
this.symbols.map(function (symbol, index) {\n
* / importAs = /** @type {?} */ ((undefined));\n
(!_this.summaryResolver.isLibraryFile(symbol.filePath)) {\n
_this.reexportedBy.get(symbol);\n
((_this.indexBySymbol.get(reexportSymbol));\n
{?} */ summary = _this.unprocessedSymbolSummariesBySymbol.get(symbol);\n
!summary.metadata || summary.metadata.__symbolic !== 'interface') {\n
+ \"_\" + index;\n
return {\n
filePath: _this.summaryResolver.toSummaryFileName(symbol.filePath, _this.srcFileName),\n
importAs: importAs\n
/**\n
* @param {?} value\n
* @param {?} flags\n
* @return {?}\n
* @param {?} value\n
* @param {?} context\n
* @return {?}\n
* @param {?} value\n
* @param {?} context\n
* @return {?}\n
this.symbolResolver.getStaticSymbol(value.filePath, value.name);\n
this.visitStaticSymbol(baseSymbol, context);\n

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}\n }; \n /** \n * Returns null if the options.resolveValue is true, and the summary for the symbol \n *
resolved to a type or could not be resolved. \n * @param {?} baseSymbol \n * @param {?} flags \n * @return
{?} \n * \n toJsonSerializer.prototype.visitStaticSymbol = /** \n * Returns null if the options.resolveValue is
true, and the summary for the symbol \n * resolved to a type or could not be resolved. \n * @param {?}
baseSymbol \n * @param {?} flags \n * @return {?} \n * \n function (baseSymbol, flags) { \n var /**
@type {?} */ index = this.indexBySymbol.get(baseSymbol); \n var /** @type {?} */ summary = null; \n if
(flags & 1 /* ResolveValue */ && \n this.summaryResolver.isLibraryFile(baseSymbol.filePath)) { \n if
(this.unprocessedSymbolSummariesBySymbol.has(baseSymbol)) { \n // the summary for this symbol was
already added \n // -> nothing to do. \n return /** @type {?} */ ((index)); \n } \n
summary = this.loadSummary(baseSymbol); \n if (summary && summary.metadata instanceof StaticSymbol)
{ \n // The summary is a reexport \n index = this.visitStaticSymbol(summary.metadata, flags); \n
// reset the summary as it is just a reexport, so we don't want to store it. \n summary = null; \n
} \n } \n else if (index !== null) { \n // Note: === on purpose to compare with undefined! \n // No
summary and the symbol is already added -> nothing to do. \n return index; \n } \n // Note: === on
purpose to compare with undefined! \n if (index === null) { \n index = this.symbols.length; \n
this.symbols.push(baseSymbol); \n } \n this.indexBySymbol.set(baseSymbol, index); \n if (summary) { \n
this.addSummary(summary); \n } \n return index; \n }; \n /** \n * @param {?} symbol \n *
@return {?} \n * \n toJsonSerializer.prototype.loadSummary = /** \n * @param {?} symbol \n * @return
{?} \n * \n function (symbol) { \n var /** @type {?} */ summary =
this.summaryResolver.resolveSummary(symbol); \n if (!summary) { \n // some symbols might originate
from a plain typescript library \n // that just exported .d.ts and .metadata.json files, i.e. where no summary \n
// files were created. \n var /** @type {?} */ resolvedSymbol =
this.symbolResolver.resolveSymbol(symbol); \n if (resolvedSymbol) { \n summary = { symbol:
resolvedSymbol.symbol, metadata: resolvedSymbol.metadata }; \n } \n } \n return summary; \n }; \n
return toJsonSerializer; \n } (ValueTransformer); \n var ForJitSerializer = /** @class */ (function () { \n function
ForJitSerializer(outputCtx, symbolResolver, summaryResolver) { \n this.outputCtx = outputCtx; \n
this.symbolResolver = symbolResolver; \n this.summaryResolver = summaryResolver; \n this.data = []; \n
} \n /** \n * @param {?} summary \n * @param {?} metadata \n * @return {?} \n * \n
ForJitSerializer.prototype.addSourceType = /** \n * @param {?} summary \n * @param {?} metadata \n *
@return {?} \n * \n function (summary, metadata) { \n this.data.push({ summary: summary, metadata:
metadata, isLibrary: false }); \n }; \n /** \n * @param {?} summary \n * @return {?} \n * \n
ForJitSerializer.prototype.addLibType = /** \n * @param {?} summary \n * @return {?} \n * \n function
(summary) { \n this.data.push({ summary: summary, metadata: null, isLibrary: true }); \n }; \n /** \n *
@param {?} exportAsArr \n * @return {?} \n * \n ForJitSerializer.prototype.serialize = /** \n * @param {?}
exportAsArr \n * @return {?} \n * \n function (exportAsArr) { \n var _this = this; \n var /** @type {?} */
*/ exportAsBySymbol = new Map(); \n for (var _i = 0, exportAsArr_1 = exportAsArr; _i <
exportAsArr_1.length; _i++) { \n var _a = exportAsArr_1[_i], symbol = _a.symbol, exportAs =
_a.exportAs; \n exportAsBySymbol.set(symbol, exportAs); \n } \n var /** @type {?} */
ngModuleSymbols = new Set(); \n for (var _b = 0, _c = this.data; _b < _c.length; _b++) { \n var _d =
_c[_b], summary = _d.summary, metadata = _d.metadata, isLibrary = _d.isLibrary; \n if
(summary.summaryKind === CompileSummaryKind.NgModule) { \n // collect the symbols that refer to
NgModule classes. \n // Note: we can't just rely on `summary.type.summaryKind` to determine this as \n
// we don't add the summaries of all referenced symbols when we serialize type summaries. \n // See
serializeSummaries for details. \n ngModuleSymbols.add(summary.type.reference); \n var /**
@type {?} */ modSummary = /** @type {?} */ (summary); \n for (var _e = 0, _f = modSummary.modules;
_e < _f.length; _e++) { \n var mod = _f[_e]; \n ngModuleSymbols.add(mod.reference); \n
} \n } \n if (!isLibrary) { \n var /** @type {?} */ fnName =
summaryForJitName(summary.type.reference.name); \n createSummaryForJitFunction(this.outputCtx,

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summary.type.reference, this.serializeSummaryWithDeps(summary, /** @type {?} */ ((metadata)));\n }\n }\n ngModuleSymbols.forEach(function (ngModuleSymbol) {\n if\n (_this.summaryResolver.isLibraryFile(ngModuleSymbol.filePath)) {\n var /** @type {?} */ exportAs =\n exportAsBySymbol.get(ngModuleSymbol) || ngModuleSymbol.name;\n var /** @type {?} */\n jitExportAsName = summaryForJitName(exportAs);\n _this.outputCtx.statements.push(variable(jitExportAsName))\n .set(_this.serializeSummaryRef(ngModuleSymbol))\n .toDeclStmt(null, [StmtModifier.Exported]);\n }\n });\n};\n\n/**\n * @param {?} summary\n * @param {?} metadata\n * @return {?}\n */\n\nForJitSerializer.prototype.serializeSummaryWithDeps = /**\n * @param {?} summary\n * @param {?} metadata\n * @return {?}\n */\n\nfunction (summary, metadata) {\n var _this = this;\n var /** @type\n {?} */ expressions = [this.serializeSummary(summary)];\n var /** @type\n {?} */ providers = [];\n if\n (metadata instanceof CompileNgModuleMetadata) {\n expressions.push.apply(expressions, \n // For\n directives / pipes, we only add the declared ones,\n // and rely on transitively importing NgModules to get the\n transitive\n // summaries.\n metadata.declaredDirectives.concat(metadata.declaredPipes))\n .map(function (type) { return type.reference; })\n .concat(metadata.transitiveModule.modules.map(function (type) { return type.reference; }));\n .filter(function (ref) { return ref !== metadata.type.reference; })\n .map(function (ref) { return\n _this.serializeSummaryRef(ref); });\n // Note: We don't use `NgModuleSummary.providers`, as that one is\n transitive,\n // and we already have transitive modules.\n providers = metadata.providers;\n }\n else if (summary.summaryKind === CompileSummaryKind.Directive) {\n var /** @type\n {?} */ dirSummary\n = /** @type\n {?} */ (summary);\n providers = dirSummary.providers.concat(dirSummary.viewProviders);\n }\n // Note: We can't just refer to the `ngsummary.ts` files for `useClass` providers (as we do for\n //\n declaredDirectives / declaredPipes), as we allow\n // providers without ctor arguments to skip the `@Injectable`\n decorator,\n // i.e. we didn't generate .ngsummary.ts files for these.\n expressions.push.apply(expressions,\n providers.filter(function (provider) { return !provider.useClass; }).map(function (provider) {\n return\n _this.serializeSummary(/** @type\n {?} */ ({\n summaryKind: CompileSummaryKind.Injectable, type:\n provider.useClass\n }));\n }));\n return literalArr(expressions);\n};\n\n/**\n * @param {?}\n * @return {?}\n */\n\nForJitSerializer.prototype.serializeSummaryRef = /**\n * @param {?}\n * @return {?}\n */\n\nfunction (typeSymbol) {\n var /** @type\n {?} */ jitImportedSymbol\n = this.symbolResolver.getStaticSymbol(summaryForJitFileName(typeSymbol.filePath),\n summaryForJitName(typeSymbol.name));\n return this.outputCtx.importExpr(jitImportedSymbol);\n};\n\n/**\n * @param {?} data\n * @return {?}\n */\n\nForJitSerializer.prototype.serializeSummary = /**\n * @param\n * {?} data\n * @return\n * {?}\n */\n\nfunction (data) {\n var /** @type\n {?} */ outputCtx =\n this.outputCtx;\n var Transformer = /** @class\n */ (function () {\n function Transformer() {\n }\n /**\n * @param\n * {?} arr\n * @param\n * {?} context\n * @return\n * {?}\n */\n Transformer.prototype.visitArray = /**\n * @param\n * {?} arr\n * @param\n * {?} context\n * @return\n * {?}\n */\n function (arr, context) {\n var _this = this;\n return\n literalArr(arr.map(function (entry) { return visitValue(entry, _this, context); }));\n }\n /**\n * @param\n * {?} map\n * @param\n * {?} context\n * @return\n * {?}\n */\n Transformer.prototype.visitStringMap = /**\n * @param\n * {?} map\n * @param\n * {?} context\n * @return\n * {?}\n */\n function (map, context) {\n var _this = this;\n return new\n LiteralMapExpr(Object.keys(map).map(function (key) { return new LiteralMapEntry(key, visitValue(map[key],\n _this, context), false); }));\n }\n /**\n * @param\n * {?} value\n * @param\n * {?} context\n * @return\n * {?}\n */\n Transformer.prototype.visitPrimitive = /**\n * @param\n * {?} value\n * @param\n * {?} context\n * @return\n * {?}\n */\n function (value, context) {\n return\n literal(value);\n }\n /**\n * @param\n * {?} value\n * @param\n * {?} context\n * @return\n * {?}\n */\n Transformer.prototype.visitOther = /**\n * @param\n * {?} value\n * @param\n * {?} context\n * @return\n * {?}\n */\n function (value, context) {\n if (value instanceof

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StaticSymbol) {\n
 return outputCtx.importExpr(value);\n
} else {\n
 throw new Error("Illegal State: Encountered value \" + value);\n
};\n
return\n
Transformer);\n
});\n
return visitValue(data, new Transformer(), null);\n
};\n
return\n
ForJitSerializer;\n
})();\n
nvar FromJsonDeserializer = /** @class */ (function (_super) {\n
__extends(FromJsonDeserializer, _super);\n
function FromJsonDeserializer(symbolCache, summaryResolver) {\n
 var _this = _super.call(this) || this;\n
 _this.symbolCache = symbolCache;\n
 _this.summaryResolver =\n
summaryResolver;\n
 return _this;\n
} } /**\n
 * @param {?} libraryFileName\n
 * @param {?} json\n
 * @return {?}\n
 */\n
FromJsonDeserializer.prototype.deserialize = /**\n
 * @param {?} libraryFileName\n
 * @param {?} json\n
 * @return {?}\n
 */\n
function (libraryFileName, json) {\n
 var _this = this;\n
 var /** @type {?} */ data = JSON.parse(json);\n
 var /** @type {?} */ allImportAs = [];\n
 this.symbols =\n
data.symbols.map(function (serializedSymbol) {\n
 return\n
_this.symbolCache.get(_this.summaryResolver.fromSummaryFileName(serializedSymbol.filePath,\n
libraryFileName), serializedSymbol.name);\n
});\n
 data.symbols.forEach(function (serializedSymbol,\n
index) {\n
 var /** @type {?} */ symbol = _this.symbols[index];\n
 var /** @type {?} */ importAs =\n
serializedSymbol.importAs;\n
 if (typeof importAs === 'number') {\n
 allImportAs.push({ symbol:\n
symbol, importAs: _this.symbols[importAs] });\n
 } else if (typeof importAs === 'string') {\n
 allImportAs.push({ symbol: symbol, importAs: _this.symbolCache.get(ngfactoryFilePath(libraryFileName),\n
importAs) });\n
 } });\n
 var /** @type {?} */ summaries = /** @type {?} */\n
(visitValue(data.summaries, this, null));\n
 return { moduleName: data.moduleName, summaries: summaries,\n
importAs: allImportAs }; }\n
};\n
/**\n
 * @param {?} map\n
 * @param {?} context\n
 * @return {?}\n
 */\n
FromJsonDeserializer.prototype.visitStringMap = /**\n
 * @param {?} map\n
 * @param {?} context\n
 * @return {?}\n
 */\n
function (map, context) {\n
 if ('__symbol' in map) {\n
 var /** @type {?} */\n
baseSymbol = this.symbols[map['__symbol']];\n
 var /** @type {?} */ members = map['members'];\n
 return members.length ? this.symbolCache.get(baseSymbol.filePath, baseSymbol.name, members) :\n
baseSymbol;\n
 } else {\n
 return _super.prototype.visitStringMap.call(this, map, context);\n
 } }\n
};\n
return FromJsonDeserializer;\n
})(ValueTransformer);\n
/**\n
 * @param {?} metadata\n
 * @return {?}\n
 */\n
function isCall(metadata) {\n
 return metadata && metadata.__symbolic === 'call';\n
}\n
/**\n
 * @param {?} metadata\n
 * @return {?}\n
 */\n
function isFunctionCall(metadata) {\n
 return isCall(metadata) &&\n
unwrapResolvedMetadata(metadata.expression) instanceof StaticSymbol;\n
}\n
/**\n
 * @param {?} metadata\n
 * @return {?}\n
 */\n
function isMethodCallOnVariable(metadata) {\n
 return isCall(metadata) &&\n
metadata.expression && metadata.expression.__symbolic === 'select' &&\n
unwrapResolvedMetadata(metadata.expression.expression) instanceof StaticSymbol;\n
}\n
}\n
/**\n
 * @fileoverview\n
added by tsickle\n
 * @suppress {checkTypes} checked by tsc\n
 */\n
/**\n
 * @license\n
 * Copyright Google Inc. All\n
Rights Reserved.\n
 * Use of this source code is governed by an MIT-style license that can be\n
 * found in the\n
LICENSE file at https://angular.io/license\n
 */\n
/**\n
 * @enum {number} */\n
nvar StubEmitFlags = {\n
 Basic: 1,\n
TypeCheck: 2,\n
All: 3,\n
};\n
StubEmitFlags[StubEmitFlags.Basic] =\n
\"Basic\";\n
StubEmitFlags[StubEmitFlags.TypeCheck] = \"TypeCheck\";\n
StubEmitFlags[StubEmitFlags.All] =\n
\"All\";\n
nvar AotCompiler = /** @class */ (function () {\n
 function AotCompiler(_config, _options, _host,\n
_reflector, _metadataResolver, _templateParser, _styleCompiler, _viewCompiler, _typeCheckCompiler,\n
_ngModuleCompiler, _outputEmitter, _summaryResolver, _symbolResolver) {\n
 this._config = _config;\n
 this._options = _options;\n
 this._host = _host;\n
 this._reflector = _reflector;\n
 this._metadataResolver =\n
_metadataResolver;\n
 this._templateParser = _templateParser;\n
 this._styleCompiler = _styleCompiler;\n
 this._viewCompiler = _viewCompiler;\n
 this._typeCheckCompiler = _typeCheckCompiler;\n
 this._ngModuleCompiler = _ngModuleCompiler;\n
 this._outputEmitter = _outputEmitter;\n
 this._summaryResolver = _summaryResolver;\n
 this._symbolResolver = _symbolResolver;\n
 this._templateAstCache = new Map();\n
 this._analyzedFiles = new Map();\n
 } } /**\n
 * @return {?}\n
 */\n
AotCompiler.prototype.clearCache = /**\n
 * @return {?}\n
 */\n
function () {\n
 this._metadataResolver.clearCache();\n
};\n
/**\n
 * @param {?} rootFiles\n
 * @return {?}\n
 */\n

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AotCompiler.prototype.analyzeModulesSync = /**\n * @param {?} rootFiles\n * @return {?}\n */\n
function (rootFiles) {\n var _this = this;\n var /** @type {?} */ analyzeResult =
analyzeAndValidateNgModules(rootFiles, this._host, this._symbolResolver, this._metadataResolver);\n
analyzeResult.ngModules.forEach(function (ngModule) {\n return
_this._metadataResolver.loadNgModuleDirectiveAndPipeMetadata(ngModule.type.reference, true);\n });\n
return analyzeResult;\n };\n /**\n * @param {?} rootFiles\n * @return {?}\n */\n
AotCompiler.prototype.analyzeModulesAsync = /**\n * @param {?} rootFiles\n * @return {?}\n */\n
function (rootFiles) {\n var _this = this;\n var /** @type {?} */ analyzeResult =
analyzeAndValidateNgModules(rootFiles, this._host, this._symbolResolver, this._metadataResolver);\n return
Promise\n .all(analyzeResult.ngModules.map(function (ngModule) {\n return
_this._metadataResolver.loadNgModuleDirectiveAndPipeMetadata(ngModule.type.reference, false);\n })))\n
.then(function () { return analyzeResult; });\n };\n /**\n * @param {?} fileName\n * @return {?}\n */\n
AotCompiler.prototype._analyzeFile = /**\n * @param {?} fileName\n * @return {?}\n */\n
function (fileName) {\n var /** @type {?} */ analyzedFile = this._analyzedFiles.get(fileName);\n if
(!analyzedFile) {\n analyzedFile =\n analyzeFile(this._host, this._symbolResolver,
this._metadataResolver, fileName);\n this._analyzedFiles.set(fileName, analyzedFile);\n }\n return
analyzedFile;\n };\n /**\n * @param {?} fileName\n * @return {?}\n */\n
AotCompiler.prototype.findGeneratedFileNames = /**\n * @param {?} fileName\n * @return {?}\n */\n
function (fileName) {\n var _this = this;\n var /** @type {?} */ genFileNames = [];\n var /** @type
{?} */ file = this._analyzeFile(fileName);\n // Make sure we create a .ngfactory if we have a
injectable/directive/pipe/NgModule\n // or a reference to a non source file.\n // Note: This is overestimating
the required .ngfactory files as the real calculation is harder.\n // Only do this for StubEmitFlags.Basic, as
adding a type check block\n // does not change this file (as we generate type check blocks based on
NgModules).\n if (this._options.allowEmptyCodegenFiles || file.directives.length || file.pipes.length ||\n
file.injectables.length || file.ngModules.length || file.exportsNonSourceFiles) {\n
genFileNames.push(ngfactoryFilePath(file.fileName, true));\n if (this._options.enableSummariesForJit) {\n
genFileNames.push(summaryForJitFileName(file.fileName, true));\n }\n }\n var /** @type
{?} */ fileSuffix = normalizeGenFileSuffix(splitTypescriptSuffix(file.fileName, true)[1]);\n
file.directives.forEach(function (dirSymbol) {\n var /** @type {?} */ compMeta = /** @type {?} */
((_this._metadataResolver.getNonNormalizedDirectiveMetadata(dirSymbol))).metadata;\n if
(!compMeta.isComponent) {\n return;\n } /** @type {?} */\n ((\n // Note: compMeta
is a component and therefore template is non null.\n compMeta.template)).styleUrls.forEach(function
(styleUrl) {\n var /** @type {?} */ normalizedUrl = _this._host.resourceNameToFileName(styleUrl,
file.fileName);\n if (!normalizedUrl) {\n throw syntaxError("\'Couldn't resolve resource \'' +
styleUrl + '\'' relative to \'' + file.fileName);\n }\n var /** @type {?} */ needsShim = (/** @type
{?} */ ((compMeta.template)).encapsulation || _this._config.defaultEncapsulation) ===
ViewEncapsulation.Emulated;\n genFileNames.push(_stylesModuleUrl(normalizedUrl, needsShim,
fileSuffix));\n if (_this._options.allowEmptyCodegenFiles) {\n
genFileNames.push(_stylesModuleUrl(normalizedUrl, !needsShim, fileSuffix));\n }\n });\n
return genFileNames;\n };\n /**\n * @param {?} genFileName\n * @param {?=}
originalFileName\n * @return {?}\n */\n
AotCompiler.prototype.emitBasicStub = /**\n * @param {?}
genFileName\n * @param {?=} originalFileName\n * @return {?}\n */\n
function (genFileName,
originalFileName) {\n var /** @type {?} */ outputCtx = this._createOutputContext(genFileName);\n if
(genFileName.endsWith('.ngfactory.ts')) {\n if (!originalFileName) {\n throw new Error("\'Assertion
error: require the original file for .ngfactory.ts stubs. File: \'' + genFileName);\n }\n var /** @type {?} */
originalFile = this._analyzeFile(originalFileName);\n this._createNgFactoryStub(outputCtx, originalFile,
StubEmitFlags.Basic);\n }\n else if (genFileName.endsWith('.ngsummary.ts')) {\n if
(this._options.enableSummariesForJit) {\n if (!originalFileName) {\n throw new

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Error(`Assertion error: require the original file for .ngsummary.ts stubs. File: ` + genFileName);`
 }
 var /** @type {?} */ originalFile = this._analyzeFile(originalFileName);
 _createEmptyStub(outputCtx);
 originalFile.ngModules.forEach(function (ngModule) {
 // create exports that user code can reference
 createForJitStub(outputCtx, ngModule.type.reference);
 });
 }
 }
 else if (genFileName.endsWith('.ngstyle.ts')) {
 _createEmptyStub(outputCtx);
 }
 // Note: for the stubs, we don't need a property srcFileUrl,
 // as later on in emitAllImpls we will create the proper GeneratedFiles with the
 // correct srcFileUrl.
 // This is good as e.g. for .ngstyle.ts files we can't derive
 // the url of components based on the genFileUrl.
 return this._codegenSourceModule('unknown', outputCtx);
};
/**
 * @param {?} genFileName
 * @param {?} originalFileName
 * @return {?}
 */
AotCompiler.prototype.emitTypeCheckStub = /**
 * @param {?} genFileName
 * @param {?} originalFileName
 * @return {?}
 */
function (genFileName, originalFileName) {
 var /** @type {?} */ originalFile = this._analyzeFile(originalFileName);
 var /** @type {?} */ outputCtx = this._createOutputContext(genFileName);
 if (genFileName.endsWith('.ngfactory.ts')) {
 this._createNgFactoryStub(outputCtx, originalFile, StubEmitFlags.TypeCheck);
 }
 return outputCtx.statements.length > 0 ?
 this._codegenSourceModule(originalFile.fileName, outputCtx) :
 null;
};
/**
 * @param {?} fileNames
 * @return {?}
 */
AotCompiler.prototype.loadFilesAsync = /**
 * @param {?} fileNames
 * @return {?}
 */
function (fileNames) {
 var _this = this;
 var /** @type {?} */ files = fileNames.map(function (fileName) {
 return _this._analyzeFile(fileName);
 });
 var /** @type {?} */ loadingPromises = [];
 files.forEach(function (file) {
 return file.ngModules.forEach(function (ngModule) {
 return loadingPromises.push(_this._metadataResolver.loadNgModuleDirectiveAndPipeMetadata(ngModule.type.reference, false));
 });
 });
 return Promise.all(loadingPromises).then(function (_) {
 return mergeAndValidateNgFiles(files);
 });
};
/**
 * @param {?} fileNames
 * @return {?}
 */
AotCompiler.prototype.loadFilesSync = /**
 * @param {?} fileNames
 * @return {?}
 */
function (fileNames) {
 var _this = this;
 var /** @type {?} */ files = fileNames.map(function (fileName) {
 return _this._analyzeFile(fileName);
 });
 files.forEach(function (file) {
 return file.ngModules.forEach(function (ngModule) {
 return _this._metadataResolver.loadNgModuleDirectiveAndPipeMetadata(ngModule.type.reference, true);
 });
 });
 return mergeAndValidateNgFiles(files);
};
/**
 * @param {?} outputCtx
 * @param {?} file
 * @param {?} emitFlags
 * @return {?}
 */
AotCompiler.prototype._createNgFactoryStub = /**
 * @param {?} outputCtx
 * @param {?} file
 * @param {?} emitFlags
 * @return {?}
 */
function (outputCtx, file, emitFlags) {
 var _this = this;
 var /** @type {?} */ componentId = 0;
 file.ngModules.forEach(function (ngModuleMeta, ngModuleIndex) {
 // Note: the code below needs to be executed for StubEmitFlags.Basic and StubEmitFlags.TypeCheck,
 // so we don't change the .ngfactory file too much when adding the typecheck block.
 // create exports that user code can reference
 // Note: the code below needs to be executed for StubEmitFlags.Basic and StubEmitFlags.TypeCheck,
 // so we don't change the .ngfactory file too much when adding the typecheck block.
 // create exports that user code can reference
 _this._ngModuleCompiler.createStub(outputCtx, ngModuleMeta.type.reference);
 // add references to the symbols from the metadata.
 // These can be used by the type check block for components,
 // and they also cause TypeScript to include these files into the program too,
 // which will make them part of the analyzedFiles.
 var /** @type {?} */ externalReferences = ngModuleMeta.transitiveModule.directives.map(function (d) {
 return d.reference;
 }).concat(ngModuleMeta.transitiveModule.pipes.map(function (d) {
 return d.reference;
 })),
 ngModuleMeta.importedModules.map(function (m) {
 return m.type.reference;
 }),
 ngModuleMeta.exportedModules.map(function (m) {
 return m.type.reference;
 });
 _this._externalIdentifierReferences([Identifiers.TemplateRef, Identifiers.ElementRef]);
 var /** @type {?} */ externalReferenceVars = new Map();
 externalReferences.forEach(function (ref, typeIndex) {

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externalReferenceVars.set(ref, \"_decl\" + ngModuleIndex + \"_\" + typeIndex);\n
externalReferenceVars.forEach(function (varName, reference) {\n
outputCtx.statements.push(variable(varName)\n .set(NULL_EXPR.cast(DYNAMIC_TYPE))\n .toDeclStmt(expressionType(outputCtx.importExpr(reference, /* typeParams */ null, /* useSummaries */ /\n
useSummaries */ false)))));\n });\n if (emitFlags & StubEmitFlags.TypeCheck) {\n // add the\n typecheck block for all components of the NgModule\n ngModuleMeta.declaredDirectives.forEach(function (dirId) {\n var /** @type {?} */ compMeta =\n _this._metadataResolver.getDirectiveMetadata(dirId.reference);\n if (!compMeta.isComponent) {\n return;\n }\n componentId++;\n _this._createTypeCheckBlock(outputCtx, compMeta.type.reference.name + \"_Host_\" + componentId,\n ngModuleMeta, _this._metadataResolver.getHostComponentMetadata(compMeta), [compMeta.type],\n externalReferenceVars);\n _this._createTypeCheckBlock(outputCtx, compMeta.type.reference.name +\n \"_\" + componentId, ngModuleMeta, compMeta, ngModuleMeta.transitiveModule.directives,\n externalReferenceVars);\n });\n });\n if (outputCtx.statements.length === 0) {\n _createEmptyStub(outputCtx);\n });\n /**\n * @param {?} references\n * @return {?}\n */\n AotCompiler.prototype._externalIdentifierReferences = /**\n * @param {?} references\n * @return {?}\n */\n function (references) {\n var /** @type {?} */ result = [];\n for (var _i = 0, references_1 = references;\n _i < references_1.length; _i++) {\n var reference = references_1[_i];\n var /** @type {?} */ token =\n createTokenForExternalReference(this._reflector, reference);\n if (token.identifier) {\n result.push(token.identifier.reference);\n }\n }\n return result;\n });\n /**\n * @param {?} ctx\n * @param {?} componentId\n * @param {?} moduleMeta\n * @param {?} compMeta\n * @param {?} directives\n * @param {?} externalReferenceVars\n * @return {?}\n */\n AotCompiler.prototype._createTypeCheckBlock = /**\n * @param {?} ctx\n * @param {?} componentId\n * @param {?} moduleMeta\n * @param {?} compMeta\n * @param {?} directives\n * @param {?} externalReferenceVars\n * @return {?}\n */\n function (ctx, componentId, moduleMeta, compMeta,\n directives, externalReferenceVars) {\n var _a = this._parseTemplate(compMeta, moduleMeta, directives),\n parsedTemplate = _a.template, usedPipes = _a.pipes;\n (_b = ctx.statements).push.apply(_b,\n this._typeCheckCompiler.compileComponent(componentId, compMeta, parsedTemplate, usedPipes,\n externalReferenceVars, ctx));\n var _b;\n });\n /**\n * @param {?} analyzeResult\n * @param {?} locale\n * @return {?}\n */\n AotCompiler.prototype.emitMessageBundle = /**\n * @param {?} analyzeResult\n * @param {?} locale\n * @return {?}\n */\n function (analyzeResult, locale) {\n var\n _this = this;\n var /** @type {?} */ errors = [];\n var /** @type {?} */ htmlParser = new HtmlParser();\n // TODO(vicb): implicit tags & attributes\n var /** @type {?} */ messageBundle = new\n MessageBundle(htmlParser, [], {}, locale);\n analyzeResult.files.forEach(function (file) {\n var /**\n @type {?} */ compMetas = [];\n file.directives.forEach(function (directiveType) {\n var /** @type\n {?} */ dirMeta = _this._metadataResolver.getDirectiveMetadata(directiveType);\n if (dirMeta &&\n dirMeta.isComponent) {\n compMetas.push(dirMeta);\n }\n });\n compMetas.forEach(function (compMeta) {\n var /** @type {?} */ html = /** @type {?} */ ((/** @type\n {?} */ ((compMeta.template)).template));\n var /** @type {?} */ interpolationConfig =\n InterpolationConfig.fromArray(/** @type {?} */ ((compMeta.template)).interpolation);\n errors.push.apply(errors, /** @type {?} */ ((messageBundle.updateFromTemplate(html, file.fileName,\n interpolationConfig))));\n });\n });\n if (errors.length) {\n throw new\n Error(errors.map(function (e) { return e.toString(); }).join(\"\\n\"));\n }\n return messageBundle;\n });\n /**\n * @param {?} analyzeResult\n * @return {?}\n */\n AotCompiler.prototype.emitAllImpls = /**\n * @param {?} analyzeResult\n * @return {?}\n */\n function (analyzeResult) {\n var _this = this;\n var ngModuleByPipeOrDirective = analyzeResult.ngModuleByPipeOrDirective, files = analyzeResult.files;\n var /** @type {?} */ sourceModules = files.map(function (file) {\n return\n _this._compileImplFile(file.fileName, ngModuleByPipeOrDirective, file.directives, file.pipes, file.ngModules,\n
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file.injectables);\n });\n return flatten(sourceModules);\n });\n /**\n * @param {?} srcFileUrl\n * @param {?} ngModuleByPipeOrDirective\n * @param {?} directives\n * @param {?} pipes\n * @param {?} ngModules\n * @param {?} injectables\n * @return {?}\n */\n AotCompiler.prototype._compileImplFile = /**\n * @param {?} srcFileUrl\n * @param {?} ngModuleByPipeOrDirective\n * @param {?} directives\n * @param {?} pipes\n * @param {?} ngModules\n * @param {?} injectables\n * @return {?}\n */\n function (srcFileUrl, ngModuleByPipeOrDirective, directives, pipes, ngModules, injectables) {\n var _this = this;\n var /** @type {?} */ fileSuffix = normalizeGenFileSuffix(splitTypescriptSuffix(srcFileUrl, true)[1]);\n var /** @type {?} */ generatedFiles = [];\n var /** @type {?} */ outputCtx = this._createOutputContext(ngfactoryFilePath(srcFileUrl, true));\n generatedFiles.push.apply(generatedFiles, this._createSummary(srcFileUrl, directives, pipes, ngModules, injectables, outputCtx));\n // compile all ng modules\n ngModules.forEach(function (ngModuleMeta) { return _this._compileModule(outputCtx, ngModuleMeta); });\n // compile components\n directives.forEach(function (dirType) {\n var /** @type {?} */ compMeta = _this._metadataResolver.getDirectiveMetadata(/** @type {?} */ (dirType));\n if (!compMeta.isComponent) {\n return;\n }\n var /** @type {?} */ ngModule = ngModuleByPipeOrDirective.get(dirType);\n if (!ngModule) {\n throw new Error("Internal Error: cannot determine the module for component \" + identifierName(compMeta.type) + \"!\");\n }\n // compile styles\n var /** @type {?} */ componentStylesheet = _this._styleCompiler.compileComponent(outputCtx, compMeta); /** @type {?} */\n ((\n // Note: compMeta is a component and therefore template is non null.\n compMeta.template)).externalStylesheets.forEach(function (stylesheetMeta) {\n // Note: fill non shim and shim style files as they might\n // be shared by component with and without ViewEncapsulation.\n var /** @type {?} */ shim = _this._styleCompiler.needsStyleShim(compMeta);\n generatedFiles.push(_this._codegenStyles(srcFileUrl, compMeta, stylesheetMeta, shim, fileSuffix));\n if (_this._options.allowEmptyCodegenFiles) {\n generatedFiles.push(_this._codegenStyles(srcFileUrl, compMeta, stylesheetMeta, !shim, fileSuffix));\n }\n });\n // compile components\n var /** @type {?} */ compViewVars = _this._compileComponent(outputCtx, compMeta, ngModule, ngModule.transitiveModule.directives, componentStylesheet, fileSuffix);\n _this._compileComponentFactory(outputCtx, compMeta, ngModule, fileSuffix);\n });\n if (outputCtx.statements.length > 0 || this._options.allowEmptyCodegenFiles) {\n var /** @type {?} */ srcModule = this._codegenSourceModule(srcFileUrl, outputCtx);\n generatedFiles.unshift(srcModule);\n }\n return generatedFiles;\n });\n /**\n * @param {?} srcFileName\n * @param {?} directives\n * @param {?} pipes\n * @param {?} ngModules\n * @param {?} injectables\n * @param {?} ngFactoryCtx\n * @return {?}\n */\n AotCompiler.prototype._createSummary = /**\n * @param {?} srcFileName\n * @param {?} directives\n * @param {?} pipes\n * @param {?} ngModules\n * @param {?} injectables\n * @param {?} ngFactoryCtx\n * @return {?}\n */\n function (srcFileName, directives, pipes, ngModules, injectables, ngFactoryCtx) {\n var _this = this;\n var /** @type {?} */ symbolSummaries = this._symbolResolver.getSymbolsOf(srcFileName).map(function (symbol) { return _this._symbolResolver.resolveSymbol(symbol); });\n var /** @type {?} */ typeData = ngModules.map(function (meta) {\n return ({\n summary: /** @type {?} */ ((_this._metadataResolver.getNgModuleSummary(meta.type.reference))),\n metadata: /** @type {?} */ ((_this._metadataResolver.getNgModuleMetadata(meta.type.reference)))\n });\n }).concat(directives.map(function (ref) {\n return ({\n summary: /** @type {?} */ ((_this._metadataResolver.getDirectiveSummary(ref))),\n metadata: /** @type {?} */ ((_this._metadataResolver.getDirectiveMetadata(ref)))\n });\n }), pipes.map(function (ref) {\n return ({\n summary: /** @type {?} */ ((_this._metadataResolver.getPipeSummary(ref))),\n metadata: /** @type {?} */ ((_this._metadataResolver.getPipeMetadata(ref)))\n });\n }), injectables.map(function (ref) {\n return ({\n summary: /** @type {?} */

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((_this._metadataResolver.getInjectableSummary(ref)),\n metadata: /** @type {?} */
((_this._metadataResolver.getInjectableSummary(ref)).type\n));\n var /** @type {?} */
forJitOutputCtx = this._options.enableSummariesForJit ?\n
this._createOutputContext(summaryForJitFileName(srcFileName, true)) :\n null;\n var _a =
serializeSummaries(srcFileName, forJitOutputCtx, this._summaryResolver, this._symbolResolver,
symbolSummaries, typeData), json = _a.json, exportAs = _a.exportAs;\n exportAs.forEach(function (entry) {\n
ngFactoryCtx.statements.push(variable(entry.exportAs).set(ngFactoryCtx.importExpr(entry.symbol)).toDeclStmt(nu
ll, [\n StmtModifier.Exported\n]));\n });\n var /** @type {?} */ summaryJson = new
GeneratedFile(srcFileName, summaryFileName(srcFileName), json);\n var /** @type {?} */ result =
[summaryJson];\n if (forJitOutputCtx) {\n result.push(this._codegenSourceModule(srcFileName,
forJitOutputCtx));\n }\n return result;\n });\n /**\n * @param {?} outputCtx\n * @param {?}
ngModule\n * @return {?} */\n *^ AotCompiler.prototype._compileModule = /**\n * @param {?}
outputCtx\n * @param {?} ngModule\n * @return {?} */\n *^ function (outputCtx, ngModule) {\n var
/** @type {?} */ providers = [];\n if (this._options.locale) {\n var /** @type {?} */ normalizedLocale =
this._options.locale.replace(/_g, '-');\n providers.push({\n token:
createTokenForExternalReference(this._reflector, Identifiers.LOCALE_ID),\n useValue:
normalizedLocale,\n });\n }\n if (this._options.i18nFormat) {\n providers.push({\n
token: createTokenForExternalReference(this._reflector, Identifiers.TRANSLATIONS_FORMAT),\n
useValue: this._options.i18nFormat\n });\n }\n this._ngModuleCompiler.compile(outputCtx,
ngModule, providers);\n });\n /**\n * @param {?} outputCtx\n * @param {?} compMeta\n * @param
{?} ngModule\n * @param {?} fileSuffix\n * @return {?} */\n *^
AotCompiler.prototype._compileComponentFactory = /**\n * @param {?} outputCtx\n * @param {?}
compMeta\n * @param {?} ngModule\n * @param {?} fileSuffix\n * @return {?} */\n *^ function
(outputCtx, compMeta, ngModule, fileSuffix) {\n var /** @type {?} */ hostMeta =
this._metadataResolver.getHostComponentMetadata(compMeta);\n var /** @type {?} */ hostViewFactoryVar
= this._compileComponent(outputCtx, hostMeta, ngModule, [compMeta.type], null, fileSuffix)\n
.viewClassVar;\n var /** @type {?} */ compFactoryVar =
componentFactoryName(compMeta.type.reference);\n var /** @type {?} */ inputsExprs = [];\n for (var /**
@type {?} */ propName in compMeta.inputs) {\n var /** @type {?} */ templateName =
compMeta.inputs[propName];\n // Don't quote so that the key gets minified...\n inputsExprs.push(new
LiteralMapEntry(propName, literal(templateName), false));\n }\n var /** @type {?} */ outputsExprs = [];\n
 for (var /** @type {?} */ propName in compMeta.outputs) {\n var /** @type {?} */ templateName =
compMeta.outputs[propName];\n // Don't quote so that the key gets minified...\n
 outputsExprs.push(new LiteralMapEntry(propName, literal(templateName), false));\n }\n
 outputCtx.statements.push(variable(compFactoryVar)\n
.set(importExpr(Identifiers.createComponentFactory).callFn([\n literal(compMeta.selector),
outputCtx.importExpr(compMeta.type.reference),\n variable(hostViewFactoryVar), new
LiteralMapExpr(inputsExprs),\n new LiteralMapExpr(outputsExprs),\n literalArr/** @type {?} */
((compMeta.template)).ngContentSelectors.map(function (selector) { return literal(selector); })))\n]))\n
.toDeclStmt(importType(Identifiers.ComponentFactory, [/** @type {?} */
((expressionType(outputCtx.importExpr(compMeta.type.reference))))], [TypeModifier.Const]),
[StmtModifier.Final, StmtModifier.Exported]));\n });\n /**\n * @param {?} outputCtx\n * @param {?}
compMeta\n * @param {?} ngModule\n * @param {?} directiveIdentifiers\n * @param {?}
componentStyles\n * @param {?} fileSuffix\n * @return {?} */\n *^
AotCompiler.prototype._compileComponent = /**\n * @param {?} outputCtx\n * @param {?} compMeta\n
 * @param {?} ngModule\n * @param {?} directiveIdentifiers\n * @param {?} componentStyles\n *
 * @param {?} fileSuffix\n * @return {?} */\n *^ function (outputCtx, compMeta, ngModule,
directiveIdentifiers, componentStyles, fileSuffix) {\n var _a = this._parseTemplate(compMeta, ngModule,

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directiveIdentifiers), parsedTemplate = _a.template, usedPipes = _a.pipes;\n var /** @type {?} */ stylesExpr =
componentStyles ? variable(componentStyles.stylesVar) : literalArr([]);\n var /** @type {?} */ viewResult =
this._viewCompiler.compileComponent(outputCtx, compMeta, parsedTemplate, stylesExpr, usedPipes);\n if
(componentStyles) {\n _resolveStyleStatements(this._symbolResolver, componentStyles,
this._styleCompiler.needsStyleShim(compMeta), fileSuffix);\n }\n return viewResult;\n };\n /**\n *
@param {?} compMeta\n * @param {?} ngModule\n * @param {?} directiveIdentifiers\n * @return {?} }\n
*/\n AotCompiler.prototype._parseTemplate = /**\n * @param {?} compMeta\n * @param {?} ngModule\n
* @param {?} directiveIdentifiers\n * @return {?} }\n */\n function (compMeta, ngModule,
directiveIdentifiers) {\n var _this = this;\n if (this._templateAstCache.has(compMeta.type.reference)) {\n
return /** @type {?} */ ((this._templateAstCache.get(compMeta.type.reference)));\n }\n var /** @type
{?} */ preserveWhitespaces = /** @type {?} */ ((/** @type {?} */ ((compMeta).template)).preserveWhitespaces);\n
var /** @type {?} */ directives = directiveIdentifiers.map(function (dir) { return
_this._metadataResolver.getDirectiveSummary(dir.reference); });\n var /** @type {?} */ pipes =
ngModule.transitiveModule.pipes.map(function (pipe) { return
_this._metadataResolver.getPipeSummary(pipe.reference); });\n var /** @type {?} */ result =
this._templateParser.parse(compMeta, /** @type {?} */ ((/** @type {?} */ ((compMeta.template)).htmlAst)),
directives, pipes, ngModule.schemas, templateUrl(ngModule.type, compMeta, /** @type {?} */
((compMeta.template))), preserveWhitespaces);\n this._templateAstCache.set(compMeta.type.reference,
result);\n return result;\n };\n /**\n * @param {?} genFilePath\n * @return {?} }\n */\n
AotCompiler.prototype._createOutputContext = /**\n * @param {?} genFilePath\n * @return {?} }\n */\n
function (genFilePath) {\n var _this = this;\n var /** @type {?} */ importExpr$$1 = function (symbol,
typeParams, useSummaries) {\n if (typeParams === void 0) { typeParams = null; }\n if
(useSummaries === void 0) { useSummaries = true; }\n if (!(symbol instanceof StaticSymbol)) {\n
throw new Error("Internal error: unknown identifier \" + JSON.stringify(symbol));\n }\n var /**
@type {?} */ arity = _this._symbolResolver.getTypeArity(symbol) || 0;\n var _a =
_this._symbolResolver.getImportAs(symbol, useSummaries) || symbol, filePath = _a.filePath, name = _a.name,
members = _a.members;\n var /** @type {?} */ importModule = _this._fileNameToModuleName(filePath,
genFilePath);\n // It should be good enough to compare filePath to genFilePath and if they are equal\n
// there is a self reference. However, ngfactory files generate to .ts but their\n // symbols have .d.ts so a simple
compare is insufficient. They should be canonical\n // and is tracked by #17705.\n var /** @type {?} */
selfReference = _this._fileNameToModuleName(genFilePath, genFilePath);\n var /** @type {?} */
moduleName = importModule === selfReference ? null : importModule;\n // If we are in a type expression
that refers to a generic type then supply\n // the required type parameters. If there were not enough type
parameters\n // supplied, supply any as the type. Outside a type expression the reference\n // should not
supply type parameters and be treated as a simple value reference\n // to the constructor function itself.\n
var /** @type {?} */ suppliedTypeParams = typeParams || [];\n var /** @type {?} */
missingTypeParamsCount = arity - suppliedTypeParams.length;\n var /** @type {?} */ allTypeParams =
suppliedTypeParams.concat(new Array(missingTypeParamsCount).fill(DYNAMIC_TYPE));\n return
members.reduce(function (expr, memberName) { return expr.prop(memberName); }, /** @type {?} */
(importExpr(new ExternalReference(moduleName, name, null), allTypeParams));\n };\n return {\n
statements: [], genFilePath: genFilePath, importExpr: importExpr$$1 };\n };\n /**\n * @param {?}
importedFilePath\n * @param {?} containingFilePath\n * @return {?} }\n */\n
AotCompiler.prototype._fileNameToModuleName = /**\n * @param {?} importedFilePath\n * @param {?}
containingFilePath\n * @return {?} }\n */\n function (importedFilePath, containingFilePath) {\n return
this._summaryResolver.getKnownModuleName(importedFilePath) ||\n this._symbolResolver.getKnownModuleName(importedFilePath) ||\n this._host.fileNameToModuleName(importedFilePath, containingFilePath);\n };\n /**\n * @param {?}
srcFileUrl\n * @param {?} compMeta\n * @param {?} stylesheetMetadata\n * @param {?} isShimmed\n

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* @param {?} fileSuffix\n * @return {?}\n *\n AotCompiler.prototype._codegenStyles = /**\n * @param
{?} srcFileUrl\n * @param {?} compMeta\n * @param {?} stylesheetMetadata\n * @param {?}
isShimmed\n * @param {?} fileSuffix\n * @return {?}\n *\n function (srcFileUrl, compMeta,
stylesheetMetadata, isShimmed, fileSuffix) {\n var /** @type {?} */ outputCtx =
this._createOutputContext(_stylesModuleUrl/** @type {?} */ ((stylesheetMetadata.moduleUrl)), isShimmed,
fileSuffix);\n var /** @type {?} */ compiledStylesheet = this._styleCompiler.compileStyles(outputCtx,
compMeta, stylesheetMetadata, isShimmed);\n _resolveStyleStatements(this._symbolResolver,
compiledStylesheet, isShimmed, fileSuffix);\n return this._codegenSourceModule(srcFileUrl, outputCtx);\n
};\n /**\n * @param {?} srcFileUrl\n * @param {?} ctx\n * @return {?}\n *\n
AotCompiler.prototype._codegenSourceModule = /**\n * @param {?} srcFileUrl\n * @param {?} ctx\n *
@return {?}\n *\n function (srcFileUrl, ctx) {\n return new GeneratedFile(srcFileUrl, ctx.genFilePath,
ctx.statements);\n }; \n /**\n * @param {?=} entryRoute\n * @param {?=} analyzedModules\n *
@return {?}\n *\n AotCompiler.prototype.listLazyRoutes = /**\n * @param {?=} entryRoute\n *
@param {?=} analyzedModules\n * @return {?}\n *\n function (entryRoute, analyzedModules) {\n var
/** @type {?} */ self = this;\n if (entryRoute) {\n var /** @type {?} */ symbol =
parseLazyRoute(entryRoute, this._reflector).referencedModule;\n return visitLazyRoute(symbol);\n } \n
else if (analyzedModules) {\n var /** @type {?} */ allLazyRoutes = [];\n for (var _i = 0, _a =
analyzedModules.ngModules; _i < _a.length; _i++) {\n var ngModule = _a[_i];\n var /** @type
{?} */ lazyRoutes = listLazyRoutes(ngModule, this._reflector);\n for (var _b = 0, lazyRoutes_1 =
lazyRoutes; _b < lazyRoutes_1.length; _b++) {\n var lazyRoute = lazyRoutes_1[_b];\n
allLazyRoutes.push(lazyRoute);\n } \n } \n return allLazyRoutes;\n } \n else {\n
throw new Error("Either route or analyzedModules has to be specified!");\n } \n /**\n * @param {?}
symbol\n * @param {?=} seenRoutes\n * @param {?=} allLazyRoutes\n * @return {?}\n *\n
function visitLazyRoute(symbol, seenRoutes, allLazyRoutes) {\n if (seenRoutes === void 0) { seenRoutes
= new Set(); }\n if (allLazyRoutes === void 0) { allLazyRoutes = []; }\n // Support pointing to default
exports, but stop recursing there.\n // as the StaticReflector does not yet support default exports.\n if
(seenRoutes.has(symbol) || !symbol.name) {\n return allLazyRoutes;\n } \n
seenRoutes.add(symbol);\n var /** @type {?} */ lazyRoutes = listLazyRoutes(** @type {?} */
((self._metadataResolver.getNgModuleMetadata(symbol, true))), self._reflector);\n for (var _i = 0,
lazyRoutes_2 = lazyRoutes; _i < lazyRoutes_2.length; _i++) {\n var lazyRoute = lazyRoutes_2[_i];\n
allLazyRoutes.push(lazyRoute);\n visitLazyRoute(lazyRoute.referencedModule, seenRoutes,
allLazyRoutes);\n } \n return allLazyRoutes;\n } \n }; \n return AotCompiler;\n }());\n /**\n *
@param {?} outputCtx\n * @return {?}\n *\n function _createEmptyStub(outputCtx) {\n // Note: We need to
produce at least one import statement so that\n // TypeScript knows that the file is an es6 module. Otherwise our
generated\n // exports / imports won't be emitted properly by TypeScript.\n
outputCtx.statements.push(importExpr(Identifiers.ComponentFactory).toStmt());\n }\n /**\n * @param {?}
symbolResolver\n * @param {?} compileResult\n * @param {?} needsShim\n * @param {?} fileSuffix\n *
@return {?}\n *\n function _resolveStyleStatements(symbolResolver, compileResult, needsShim, fileSuffix) {\n
compileResult.dependencies.forEach(function (dep) {\n
dep.setValue(symbolResolver.getStaticSymbol(_stylesModuleUrl(dep.moduleUrl, needsShim, fileSuffix),
dep.name));\n });\n }\n /**\n * @param {?} stylesheetUrl\n * @param {?} shim\n * @param {?} suffix\n *
@return {?}\n *\n function _stylesModuleUrl(stylesheetUrl, shim, suffix) {\n return "\" + stylesheetUrl + (shim ?
'.shim': '') + \".ngstyle\" + suffix;\n }\n /**\n * @record\n *\n function _analyzeFilesIncludingNonProgramFiles(fileNames, host, staticSymbolResolver,
metadataResolver) {\n var /** @type {?} */ files = _analyzeFilesIncludingNonProgramFiles(fileNames, host,
staticSymbolResolver, metadataResolver);\n return mergeAnalyzedFiles(files);\n }\n /**\n * @param {?}
fileNames\n * @param {?} host\n * @param {?} staticSymbolResolver\n * @param {?} metadataResolver\n *

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@return {?} \n * \n function analyzeAndValidateNgModules(fileNames, host, staticSymbolResolver,
metadataResolver) { \n return validateAnalyzedModules(analyzeNgModules(fileNames, host,
staticSymbolResolver, metadataResolver)); \n } \n /** \n * @param {?} analyzedModules \n * @return {?} \n
* \n function validateAnalyzedModules(analyzedModules) { \n if (analyzedModules.symbolsMissingModule &&
analyzedModules.symbolsMissingModule.length) { \n var /** @type {?} */ messages =
analyzedModules.symbolsMissingModule.map(function (s) { \n return "\"Cannot determine the module for
class \"" + s.name + "\" in \"" + s.filePath + "\"! Add \"" + s.name + "\" to the NgModule to fix it.\""; \n }); \n throw
syntaxError(messages.join("\n")); \n } \n return analyzedModules; \n } \n /** \n * @param {?} fileNames \n *
@param {?} host \n * @param {?} staticSymbolResolver \n * @param {?} metadataResolver \n * @return {?} \n
* \n function _analyzeFilesIncludingNonProgramFiles(fileNames, host, staticSymbolResolver, metadataResolver)
{ \n var /** @type {?} */ seenFiles = new Set(); \n var /** @type {?} */ files = []; \n var /** @type {?} */
visitFile = function (fileName) { \n if (seenFiles.has(fileName) || !host.isSourceFile(fileName)) { \n return
false; \n } \n seenFiles.add(fileName); \n var /** @type {?} */ analyzedFile = analyzeFile(host,
staticSymbolResolver, metadataResolver, fileName); \n files.push(analyzedFile); \n analyzedFile.ngModules.forEach(function (ngModule) { \n
ngModule.transitiveModule.modules.forEach(function (modMeta) { return visitFile(modMeta.reference.filePath);
}); \n }); \n }); \n fileNames.forEach(function (fileName) { return visitFile(fileName); }); \n return
files; \n } \n /** \n * @param {?} host \n * @param {?} staticSymbolResolver \n * @param {?} metadataResolver \n *
@param {?} fileName \n * @return {?} \n * \n function analyzeFile(host, staticSymbolResolver, metadataResolver,
fileName) { \n var /** @type {?} */ directives = []; \n var /** @type {?} */ pipes = []; \n var /** @type {?} */
injectables = []; \n var /** @type {?} */ ngModules = []; \n var /** @type {?} */ hasDecorators =
staticSymbolResolver.hasDecorators(fileName); \n var /** @type {?} */ exportsNonSourceFiles = false; \n //
Don't analyze .d.ts files that have no decorators as a shortcut \n // to speed up the analysis. This prevents us from \n
// resolving the references in these files. \n // Note: exportsNonSourceFiles is only needed when compiling with
summaries, \n // which is not the case when .d.ts files are treated as input files. \n if (!fileName.endsWith('.d.ts') ||
hasDecorators) { \n staticSymbolResolver.getSymbolsOf(fileName).forEach(function (symbol) { \n var
/** @type {?} */ resolvedSymbol = staticSymbolResolver.resolveSymbol(symbol); \n var /** @type {?} */
symbolMeta = resolvedSymbol.metadata; \n if (!symbolMeta || symbolMeta.__symbolic === 'error') { \n
return; \n } \n var /** @type {?} */ isNgSymbol = false; \n if (symbolMeta.__symbolic ===
'class') { \n if (metadataResolver.isDirective(symbol)) { \n isNgSymbol = true; \n
directives.push(symbol); \n } \n else if (metadataResolver.isPipe(symbol)) { \n
isNgSymbol = true; \n pipes.push(symbol); \n } \n else if
(metadataResolver.isNgModule(symbol)) { \n var /** @type {?} */ ngModule =
metadataResolver.getNgModuleMetadata(symbol, false); \n if (ngModule) { \n
isNgSymbol = true; \n ngModules.push(ngModule); \n } \n } \n else if
(metadataResolver.isInjectable(symbol)) { \n isNgSymbol = true; \n
injectables.push(symbol); \n } \n } \n if (!isNgSymbol) { \n exportsNonSourceFiles
= \n exportsNonSourceFiles || isValueExportingNonSourceFile(host, symbolMeta); \n } \n }); \n
} \n return { \n fileName: fileName, directives: directives, pipes: pipes, ngModules: ngModules, injectables:
injectables, exportsNonSourceFiles: exportsNonSourceFiles, \n }; \n } \n /** \n * @param {?} host \n * @param {?}
metadata \n * @return {?} \n * \n function isValueExportingNonSourceFile(host, metadata) { \n var /** @type {?} */
exportsNonSourceFiles = false; \n var Visitor = /** @class */ (function () { \n function Visitor() { \n
} \n /** \n * @param {?} arr \n * @param {?} context \n * @return {?} \n * \n
Visitor.prototype.visitArray = /** \n * @param {?} arr \n * @param {?} context \n * @return {?} \n
* \n * \n function (arr, context) { \n var _this = this; \n arr.forEach(function (v) { return visitValue(v,
_this, context); }); \n }; \n /** \n * @param {?} map \n * @param {?} context \n * @return
 {?} \n * \n * \n Visitor.prototype.visitStringMap = /** \n * @param {?} map \n * @param {?}
context \n * @return {?} \n * \n * \n function (map, context) { \n var _this = this; \n

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implements enough of the Reflector API that is necessary to compile\n * templates statically.\n *\nvar
StaticReflector = /** @class */ (function () {\n function StaticReflector(summaryResolver, symbolResolver,
knownMetadataClasses, knownMetadataFunctions, errorRecorder) {\n if (knownMetadataClasses === void 0) {\nknownMetadataClasses = []; }\n if (knownMetadataFunctions === void 0) {\nknownMetadataFunctions = []; }\n var _this = this;\n this.summaryResolver = summaryResolver;\n this.symbolResolver =
symbolResolver;\n this.errorRecorder = errorRecorder;\n this.annotationCache = new Map();\nthis.propertyCache = new Map();\n this.parameterCache = new Map();\n this.methodCache = new Map();\n this.staticCache = new Map();\n this.conversionMap = new Map();\n this.resolvedExternalReferences =
new Map();\n this.annotationForParentClassWithSummaryKind = new Map();\nthis.initializeConversionMap();\n knownMetadataClasses.forEach(function (kc) {\n return
_this._registerDecoratorOrConstructor(_this.getStaticSymbol(kc.filePath, kc.name), kc.ctor);\n });\nknownMetadataFunctions.forEach(function (kf) {\n return _this._registerFunction(_this.getStaticSymbol(kf.filePath,
kf.name), kf.fn); });\n this.annotationForParentClassWithSummaryKind.set(CompileSummaryKind.Directive,
[createDirective, createComponent]);\nthis.annotationForParentClassWithSummaryKind.set(CompileSummaryKind.Pipe, [createPipe]);\nthis.annotationForParentClassWithSummaryKind.set(CompileSummaryKind.NgModule, [createNgModule]);\nthis.annotationForParentClassWithSummaryKind.set(CompileSummaryKind.Injectable, [createInjectable,
createPipe, createDirective, createComponent, createNgModule]);\n }\n /**\n * @param {?} typeOrFunc\n * @return {?}\n */\n StaticReflector.prototype.componentModuleUrl = /**\n * @param {?} typeOrFunc\n * @return {?}\n */\n function (typeOrFunc) {\n var /** @type {?} */ staticSymbol =
this.findSymbolDeclaration(typeOrFunc);\n return this.symbolResolver.getResourcePath(staticSymbol);\n };\n /**\n * @param {?} ref\n * @param {?=} containingFile\n * @return {?}\n */\n StaticReflector.prototype.resolveExternalReference = /**\n * @param {?} ref\n * @param {?=}
containingFile\n * @return {?}\n */\n function (ref, containingFile) {\n var /** @type {?} */ key =
undefined;\n if (!containingFile) {\n key = ref.moduleName + \":\" + ref.name;\n var /** @type
{?} */ declarationSymbol_1 = this.resolvedExternalReferences.get(key);\n if (declarationSymbol_1)\n return declarationSymbol_1;\n }\n var /** @type {?} */ refSymbol =
this.symbolResolver.getSymbolByModule(/** @type {?} */ ((ref.moduleName)), /** @type {?} */ ((ref.name)),
containingFile);\n var /** @type {?} */ declarationSymbol = this.findSymbolDeclaration(refSymbol);\n if
(!containingFile) {\n this.symbolResolver.recordModuleNameForFileName(refSymbol.filePath, /** @type
{?} */ ((ref.moduleName))); \n this.symbolResolver.recordImportAs(declarationSymbol, refSymbol);\n }\n if (key) {\n this.resolvedExternalReferences.set(key, declarationSymbol);\n }\n return
declarationSymbol;\n };\n /**\n * @param {?} moduleUrl\n * @param {?} name\n * @param {?=}
containingFile\n * @return {?}\n */\n StaticReflector.prototype.findDeclaration = /**\n * @param {?}
moduleUrl\n * @param {?} name\n * @param {?=} containingFile\n * @return {?}\n */\n function
(moduleUrl, name, containingFile) {\n return
this.findSymbolDeclaration(this.symbolResolver.getSymbolByModule(moduleUrl, name, containingFile));\n };\n /**\n * @param {?} moduleUrl\n * @param {?} name\n * @return {?}\n */\n StaticReflector.prototype.tryFindDeclaration = /**\n * @param {?} moduleUrl\n * @param {?} name\n *
@return {?}\n */\n function (moduleUrl, name) {\n var _this = this;\n return
this.symbolResolver.ignoreErrorsFor(function () {\n return _this.findDeclaration(moduleUrl, name); });\n };\n /**\n * @param {?} symbol\n * @return {?}\n */\n StaticReflector.prototype.findSymbolDeclaration =
/**\n * @param {?} symbol\n * @return {?}\n */\n function (symbol) {\n var /** @type {?} */
resolvedSymbol = this.symbolResolver.resolveSymbol(symbol);\n if (resolvedSymbol) {\n var /**
@type {?} */ resolvedMetadata = resolvedSymbol.metadata;\n if (resolvedMetadata &&
resolvedMetadata.__symbolic === 'resolved') {\n resolvedMetadata = resolvedMetadata.symbol;\n }\n if (resolvedMetadata instanceof StaticSymbol) {\n return
this.findSymbolDeclaration(resolvedSymbol.metadata);\n }\n }\n return symbol;\n };\n /**\n *

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@param {?} type\n * @return {?} \n * \n StaticReflector.prototype.annotations = /** \n * @param {?}
type\n * @return {?} \n * \n function (type) {\n var /** @type {?} */ annotations =
this.annotationCache.get(type);\n if (!annotations) {\n annotations = [];\n var /** @type {?} */
classMetadata = this.getTypeMetadata(type);\n var /** @type {?} */ parentType = this.findParentType(type,
classMetadata);\n if (parentType) {\n var /** @type {?} */ parentAnnotations =
this.annotations(parentType);\n annotations.push.apply(annotations, parentAnnotations);\n }\n
var /** @type {?} */ ownAnnotations_1 = [];\n if (classMetadata['decorators']) {\n
ownAnnotations_1 = this.simplify(type, classMetadata['decorators']);\n
annotations.push.apply(annotations, ownAnnotations_1);\n }\n if (parentType &&
!this.summaryResolver.isLibraryFile(type.filePath) &&\n
this.summaryResolver.isLibraryFile(parentType.filePath)) {\n var /** @type {?} */ summary =
this.summaryResolver.resolveSummary(parentType);\n if (summary && summary.type) {\n
var /** @type {?} */ requiredAnnotationTypes = /** @type {?} */
((this.annotationForParentClassWithSummaryKind.get(/** @type {?} */ ((summary.type.summaryKind)))));\n
var /** @type {?} */ typeHasRequiredAnnotation = requiredAnnotationTypes.some(function (requiredType) {
return ownAnnotations_1.some(function (ann) { return requiredType.isTypeOf(ann); }); });\n if
(!typeHasRequiredAnnotation) {\n this.reportError(formatMetadataError(metadataError("Class " +
type.name + " in " + type.filePath + " extends from a " + CompileSummaryKind[(/** @type {?} */
(summary.type.summaryKind))] + " in another compilation unit without duplicating the decorator", undefined,
"Please add a " + requiredAnnotationTypes.map(function (type) { return type.ngMetadataName; }).join(' or ') + "\n
decorator to the class"), type), type);\n }\n }\n this.annotationCache.set(type,
annotations.filter(function (ann) { return !!ann; }));\n }\n return annotations;\n }; \n /** \n * @param
{?} type\n * @return {?} \n * \n StaticReflector.prototype.propMetadata = /** \n * @param {?} type\n *
@return {?} \n * \n function (type) {\n var _this = this;\n var /** @type {?} */ propMetadata =
this.propertyCache.get(type);\n if (!propMetadata) {\n var /** @type {?} */ classMetadata =
this.getTypeMetadata(type);\n propMetadata = {};\n var /** @type {?} */ parentType =
this.findParentType(type, classMetadata);\n if (parentType) {\n var /** @type {?} */
parentPropMetadata_1 = this.propMetadata(parentType);\n
Object.keys(parentPropMetadata_1).forEach(function (parentProp) {\n /** @type {?} */
((propMetadata))[parentProp] = parentPropMetadata_1[parentProp];\n });\n }\n var /**
@type {?} */ members_1 = classMetadata['members'] || {};\n Object.keys(members_1).forEach(function
(propName) {\n var /** @type {?} */ propData = members_1[propName];\n var /** @type {?} */
prop = (/** @type {?} */ (propData))\n .find(function (a) { return a['__symbolic'] == 'property' ||
a['__symbolic'] == 'method'; });\n var /** @type {?} */ decorators = [];\n if (/** @type {?} */
((propMetadata))[propName]) {\n decorators.push.apply(decorators, /** @type {?} */
((propMetadata))[propName]);\n } /** @type {?} */ \n ((propMetadata))[propName] =
decorators;\n if (prop && prop['decorators']) {\n decorators.push.apply(decorators,
_this.simplify(type, prop['decorators']));\n }\n });\n this.propertyCache.set(type,
propMetadata);\n }\n return propMetadata;\n }; \n /** \n * @param {?} type\n * @return {?} \n
* \n StaticReflector.prototype.parameters = /** \n * @param {?} type\n * @return {?} \n * \n function
(type) {\n var _this = this;\n if (!(type instanceof StaticSymbol)) {\n this.reportError(new
Error("parameters received " + JSON.stringify(type) + " which is not a StaticSymbol"), type);\n return [];\n
}\n try {\n var /** @type {?} */ parameters_1 = this.parameterCache.get(type);\n if
(!parameters_1) {\n var /** @type {?} */ classMetadata = this.getTypeMetadata(type);\n var /**
@type {?} */ parentType = this.findParentType(type, classMetadata);\n var /** @type {?} */ members =
classMetadata ? classMetadata['members'] : null;\n var /** @type {?} */ ctorData = members ?
members['__ctor__'] : null;\n if (ctorData) {\n var /** @type {?} */ ctor = (/** @type {?} */
(ctorData)).find(function (a) { return a['__symbolic'] == 'constructor'; });\n var /** @type {?} */

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rawParameterTypes = /** @type {?} */ (ctor['parameters']) || [];\n var /** @type {?} */
parameterDecorators_1 = /** @type {?} */ (this.simplify(type, ctor['parameterDecorators'] || []));\n
parameters_1 = [];\n rawParameterTypes.forEach(function (rawParamType, index) {\n var
/** @type {?} */ nestedResult = [];\n var /** @type {?} */ paramType = _this.trySimplify(type,
rawParamType);\n if (paramType)\n nestedResult.push(paramType);\n
var /** @type {?} */ decorators = parameterDecorators_1 ? parameterDecorators_1[index] : null;\n if
(decorators) {\n nestedResult.push.apply(nestedResult, decorators);\n } /** @type
{?} */\n ((parameters_1).push(nestedResult);\n });\n }\n else if
(parentType) {\n parameters_1 = this.parameters(parentType);\n }\n if
(!parameters_1) {\n parameters_1 = [];\n }\n this.parameterCache.set(type,
parameters_1);\n }\n return parameters_1;\n }\n catch (/** @type {?} */ e) {\n
console.error("Failed on type \" + JSON.stringify(type) + \" with error \" + e);\n throw e;\n }\n };\n
/**\n * @param {?} type\n * @return {?} */\n */\n StaticReflector.prototype._methodNames = /**\n *
@param {?} type\n * @return {?} */\n */\n function (type) {\n var /** @type {?} */ methodNames =
this.methodCache.get(type);\n if (!methodNames) {\n var /** @type {?} */ classMetadata =
this.getTypeMetadata(type);\n methodNames = {};\n var /** @type {?} */ parentType =
this.findParentType(type, classMetadata);\n if (parentType) {\n var /** @type {?} */
parentMethodNames_1 = this._methodNames(parentType);\n
Object.keys(parentMethodNames_1).forEach(function (parentProp) {\n /** @type {?} */
((methodNames)[parentProp] = parentMethodNames_1[parentProp]);\n });\n }\n var /**
@type {?} */ members_2 = classMetadata['members'] || {};\n Object.keys(members_2).forEach(function
(propName) {\n var /** @type {?} */ propData = members_2[propName];\n var /** @type {?} */
isMethod = (/** @type {?} */ (propData)).some(function (a) { return a['__symbolic'] == 'method'; });\n /** @type
{?} */\n ((methodNames)[propName] = /** @type {?} */ ((methodNames)[propName] || isMethod);\n
});\n this.methodCache.set(type, methodNames);\n }\n return methodNames;\n };\n /**\n *
@param {?} type\n * @return {?} */\n */\n StaticReflector.prototype._staticMembers = /**\n * @param {?}
type\n * @return {?} */\n */\n function (type) {\n var /** @type {?} */ staticMembers =
this.staticCache.get(type);\n if (!staticMembers) {\n var /** @type {?} */ classMetadata =
this.getTypeMetadata(type);\n var /** @type {?} */ staticMemberData = classMetadata['statics'] || {};\n
staticMembers = Object.keys(staticMemberData);\n this.staticCache.set(type, staticMembers);\n }\n
return staticMembers;\n };\n /**\n * @param {?} type\n * @param {?} classMetadata\n * @return {?} */\n
*/\n StaticReflector.prototype.findParentType = /**\n * @param {?} type\n * @param {?} classMetadata\n *
@return {?} */\n */\n function (type, classMetadata) {\n var /** @type {?} */ parentType =
this.trySimplify(type, classMetadata['extends']);\n if (parentType instanceof StaticSymbol) {\n return
parentType;\n }\n }\n /**\n * @param {?} type\n * @param {?} lcProperty\n * @return {?} */\n
*/\n StaticReflector.prototype.hasLifecycleHook = /**\n * @param {?} type\n * @param {?} lcProperty\n *
@return {?} */\n */\n function (type, lcProperty) {\n if (!(type instanceof StaticSymbol)) {\n
this.reportError(new Error("hasLifecycleHook received \" + JSON.stringify(type) + \" which is not a
StaticSymbol\"), type);\n }\n try {\n return !!this._methodNames(type)[lcProperty];\n }\n
catch (/** @type {?} */ e) {\n console.error("Failed on type \" + JSON.stringify(type) + \" with error \" +
e);\n throw e;\n }\n };\n /**\n * @param {?} type\n * @return {?} */\n */\n
StaticReflector.prototype.guards = /**\n * @param {?} type\n * @return {?} */\n */\n function (type) {\n
if (!(type instanceof StaticSymbol)) {\n this.reportError(new Error("guards received \" +
JSON.stringify(type) + \" which is not a StaticSymbol\"), type);\n return {};\n }\n var /** @type {?} */
staticMembers = this._staticMembers(type);\n var /** @type {?} */ result = {};\n for (var _i = 0,
staticMembers_1 = staticMembers; _i < staticMembers_1.length; _i++) {\n var name_1 =
staticMembers_1[_i];\n if (name_1.endsWith(TYPEGUARD_POSTFIX)) {\n var /** @type {?} */
property = name_1.substr(0, name_1.length - TYPEGUARD_POSTFIX.length);\n var /** @type {?} */

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value = void 0;\n if (property.endsWith(USE_IF)) {\n property = name_1.substr(0,\nproperty.length - USE_IF.length);\n value = USE_IF;\n }\n else {\n value\n= this.getStaticSymbol(type.filePath, type.name, [name_1]);\n }\n result[property] = value;\n }\n }\n return result;\n};\n/**\n * @param {?} type\n * @param {?} ctor\n * @return {?}\n *\n * ^\n StaticReflector.prototype._registerDecoratorOrConstructor = /**\n * @param {?} type\n * @param {?} ctor\n * @return {?}\n *\n * ^\n function (type, ctor) {\n this.conversionMap.set(type, function (context, args)\n{ return new (ctor.bind.apply(ctor, [void 0].concat(args)))(); });\n};\n/**\n * @param {?} type\n * @param {?} fn\n * @return {?}\n *\n * ^\n StaticReflector.prototype._registerFunction = /**\n * @param {?} type\n * @param {?} fn\n * @return {?}\n *\n * ^\n function (type, fn) {\n this.conversionMap.set(type,\nfunction (context, args) { return fn.apply(undefined, args); });\n};\n/**\n * @return {?}\n *\n * ^\n StaticReflector.prototype.initializeConversionMap = /**\n * @return {?}\n *\n * ^\n function () {\nthis.injectionToken = this.findDeclaration(ANGULAR_CORE, 'InjectionToken');\n this.opaqueToken =\nthis.findDeclaration(ANGULAR_CORE, 'OpaqueToken');\n this.ROUTES =\nthis.tryFindDeclaration(ANGULAR_ROUTER, 'ROUTES');\n\nthis.ANALYZE_FOR_ENTRY_COMPONENTS =\n this.findDeclaration(ANGULAR_CORE,\n'ANALYZE_FOR_ENTRY_COMPONENTS');\n\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Host'), createHost);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Injectable'), createInjectable);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Self'), createSelf);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'SkipSelf'), createSkipSelf);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Inject'), createInject);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Optional'), createOptional);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Attribute'), createAttribute);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'ContentChild'),\ncreateContentChild);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE,\n'ContentChildren'), createContentChildren);\n\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'ViewChild'), createViewChild);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'ViewChildren'),\ncreateViewChildren);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Input'),\ncreateInput);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Output'),\ncreateOutput);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Pipe'),\ncreatePipe);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'HostBinding'),\ncreateHostBinding);\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE,\n'HostListener'), createHostListener);\n\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Directive'), createDirective);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Component'), createComponent);\n\n this._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'NgModule'),\ncreateNgModule);\n // Note: Some metadata classes can be used directly with Provider.deps.\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Host'), createHost);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Self'), createSelf);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'SkipSelf'), createSkipSelf);\nthis._registerDecoratorOrConstructor(this.findDeclaration(ANGULAR_CORE, 'Optional'), createOptional);\n};\n\n/**\n * getStaticSymbol produces a Type whose metadata is known but whose implementation is not loaded.\n * All types passed to the StaticResolver should be pseudo-types returned by this method.\n * *\n * @param\n declarationFile the absolute path of the file where the symbol is declared\n * @param name the name of the\n type.\n * *\n * ^\n /**\n * getStaticSymbol produces a Type whose metadata is known but whose implementation is\n not loaded.\n * All types passed to the StaticResolver should be pseudo-types returned by this method.\n * *\n * @param\n * @param {?} declarationFile the absolute path of the file where the symbol is declared\n * @param {?} name

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the name of the type.\n * @param {?} members\n * @return {?}\n */\n
StaticReflector.prototype.getStaticSymbol = /**\n * getStaticSymbol produces a Type whose metadata is known
but whose implementation is not loaded.\n * All types passed to the StaticResolver should be pseudo-types
returned by this method.\n * \n * @param {?} declarationFile the absolute path of the file where the symbol is
declared\n * @param {?} name the name of the type.\n * @param {?} members\n * @return {?}\n */\n
function (declarationFile, name, members) {\n return this.symbolResolver.getStaticSymbol(declarationFile,
name, members);\n };\n /**\n * Simplify but discard any errors\n * @param {?} context\n * @param {?}
value\n * @return {?}\n */\n
StaticReflector.prototype.trySimplify = /**\n * Simplify but discard any
errors\n * @param {?} context\n * @param {?} value\n * @return {?}\n */\n
function (context, value) {\n var /** @type {?} */ originalRecorder = this.errorRecorder;\n this.errorRecorder = function (error,
fileName) { };\n var /** @type {?} */ result = this.simplify(context, value);\n this.errorRecorder =
originalRecorder;\n return result;\n };\n /**\n * \@internal\n * @param {?} context\n * @param {?}
value\n * @return {?}\n */\n
StaticReflector.prototype.simplify = /**\n * \@internal\n * @param {?}
context\n * @param {?} value\n * @return {?}\n */\n
function (context, value) {\n var /** @type {?}
*/ self = this;\n var /** @type {?} */ scope = BindingScope.empty;\n var /** @type {?} */ calling = new
Map();\n var /** @type {?} */ rootContext = context;\n /**\n * @param {?} context\n * @param
{?} value\n * @param {?} depth\n * @param {?} references\n * @return {?}\n */\n
function simplifyInContext(context, value, depth, references) {\n /**\n * @param {?} staticSymbol\n
* @return {?}\n */\n
function resolveReferenceValue(staticSymbol) {\n var /**
@type {?} */ resolvedSymbol = self.symbolResolver.resolveSymbol(staticSymbol);\n return
resolvedSymbol ? resolvedSymbol.metadata : null;\n };\n /**\n * @param {?} value\n
* @return {?}\n */\n
function simplifyEagerly(value) {\n return simplifyInContext(context,
value, depth, 0);\n };\n /**\n * @param {?} value\n * @return {?}\n */\n
function simplifyLazily(value) {\n return simplifyInContext(context, value, depth, references + 1);\n
}\n /**\n * @param {?} nestedContext\n * @param {?} value\n * @return {?}\n
*/\n
function simplifyNested(nestedContext, value) {\n if (nestedContext === context) {\n
// If the context hasn't changed let the exception propagate unmodified.\n return
simplifyInContext(nestedContext, value, depth + 1, references);\n }\n try {\n return
simplifyInContext(nestedContext, value, depth + 1, references);\n }\n catch (** @type {?} */ e)
{\n if (isMetadataError(e)) {\n // Propagate the message text up but add a message to the
chain that explains how we got\n // here.\n // e.chain implies e.symbol\n
var /** @type {?} */ summaryMsg = e.chain ? 'references \'' + /** @type {?} */ ((e.symbol)).name + '\'' :
errorSummary(e);\n var /** @type {?} */ summary = '\'' + nestedContext.name + '\'' +
summaryMsg;\n var /** @type {?} */ chain = { message: summary, position: e.position, next: e.chain
};\n // TODO(chuckj): retrieve the position information indirectly from the collectors node\n
// map if the metadata is from a .ts file.\n self.error({\n message: e.message,\n
advise: e.advise,\n context: e.context, chain: chain,\n symbol:
nestedContext\n }, context);\n }\n else {\n // It is probably an
internal error.\n throw e;\n }\n }\n /**\n * @param {?}
functionSymbol\n * @param {?} targetFunction\n * @param {?} args\n * @param {?}
targetExpression\n * @return {?}\n */\n
function simplifyCall(functionSymbol,
targetFunction, args, targetExpression) {\n if (targetFunction && targetFunction['__symbolic'] ==
'function') {\n if (calling.get(functionSymbol)) {\n self.error({\n message:
'Recursion is not supported',\n summary: 'called \'' + functionSymbol.name + '\'' recursively',\n
value: targetFunction\n }, functionSymbol);\n }\n try {\n
var /** @type {?} */ value_1 = targetFunction['value'];\n if (value_1 && (depth != 0 ||
value_1.__symbolic != 'error')) {\n var /** @type {?} */ parameters =
targetFunction['parameters'];\n var /** @type {?} */ defaults = targetFunction.defaults;\n

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 args = args.map(function (arg) { return simplifyNested(context, arg); })\n .map(function
 (arg) { return shouldIgnore(arg) ? undefined : arg; });\n if (defaults && defaults.length >
 args.length) {\n args.push.apply(args, defaults.slice(args.length).map(function (value) { return
 simplify(value); }));\n }\n calling.set(functionSymbol, true);\n var
 /** @type {?} */ functionScope = BindingScope.build();\n for (var /** @type {?} */ i = 0; i <
 parameters.length; i++) {\n functionScope.define(parameters[i], args[i]);\n }\n
 var /** @type {?} */ oldScope = scope;\n var /** @type {?} */ result_1;\n
 try {\n scope = functionScope.done();\n result_1 =
 simplifyNested(functionSymbol, value_1);\n }\n finally {\n
 scope = oldScope;\n }\n return result_1;\n }\n }\n
 finally {\n calling.delete(functionSymbol);\n }\n }\n if (depth ===
 0) {\n // If depth is 0 we are evaluating the top level expression that is describing element\n
 // decorator. In this case, it is a decorator we don't understand, such as a custom\n // non-angular
 decorator, and we should just ignore it.\n return IGNORE;\n }\n var /** @type {?} */
 position = undefined;\n if (targetExpression && targetExpression.__symbolic === 'resolved') {\n
 var /** @type {?} */ line = targetExpression.line;\n var /** @type {?} */ character =
 targetExpression.character;\n var /** @type {?} */ fileName = targetExpression.fileName;\n
 if (fileName !== null && line !== null && character !== null) {\n position = { fileName: fileName, line:
 line, column: character };\n }\n }\n self.error({\n message:
 FUNCTION_CALL_NOT_SUPPORTED,\n context: functionSymbol,\n value:
 targetFunction, position: position\n }, context);\n }\n /**\n * @param {?}
 expression\n * @return {?} */\n *^\n function simplify(expression) {\n if
 (isPrimitive(expression)) {\n return expression;\n }\n if (expression instanceof Array)
 {\n var /** @type {?} */ result_2 = [];\n for (var _i = 0, _a = (/** @type {?} */
 (expression)); _i < _a.length; _i++) {\n var item = _a[_i];\n // Check for a spread
 expression\n if (item && item.__symbolic === 'spread') {\n // We call with
 references as 0 because we require the actual value and cannot\n // tolerate a reference here.\n
 var /** @type {?} */ spreadArray = simplifyEagerly(item.expression);\n if
 (Array.isArray(spreadArray)) {\n for (var _b = 0, spreadArray_1 = spreadArray; _b <
 spreadArray_1.length; _b++) {\n var spreadItem = spreadArray_1[_b];\n
 result_2.push(spreadItem);\n }\n continue;\n }\n
 }\n var /** @type {?} */ value_2 = simplify(item);\n if (shouldIgnore(value_2)) {\n
 continue;\n }\n result_2.push(value_2);\n }\n
 return result_2;\n }\n if (expression instanceof StaticSymbol) {\n // Stop
 simplification at builtin symbols or if we are in a reference context and\n // the symbol doesn't have
 members.\n if (expression === self.injectionToken || self.conversionMap.has(expression) ||\n
 (references > 0 && !expression.members.length)) {\n return expression;\n }\n
 else {\n var /** @type {?} */ staticSymbol = expression;\n var /** @type {?} */
 declarationValue = resolveReferenceValue(staticSymbol);\n if (declarationValue !== null) {\n
 return simplifyNested(staticSymbol, declarationValue);\n }\n else {\n
 return staticSymbol;\n }\n }\n }\n if (expression) {\n if
 (expression['__symbolic']) {\n var /** @type {?} */ staticSymbol = void 0;\n switch
 (expression['__symbolic']) {\n case 'binop':\n var /** @type {?} */ left =
 simplify(expression['left']);\n if (shouldIgnore(left))\n return left;\n
 var /** @type {?} */ right = simplify(expression['right']);\n if (shouldIgnore(right))\n
 return right;\n switch (expression['operator']) {\n case
 '&&':\n return left && right;\n case '|':\n
 return left || right;\n }

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case '^':\n return left ^ right;\n case '&':\n return left & right;\n case '==':\n return left == right;\n case '!=':\n return left != right;\n case '===':\n return left === right;\n case '<':\n return left < right;\n case '<=':\n return left <= right;\n case '>':\n return left > right;\n case '>=':\n return left >= right;\n case '<<':\n return left << right;\n case '>>':\n return left >> right;\n case '+':\n return left + right;\n case '-':\n return left - right;\n case '*':\n return left * right;\n case '/':\n return left / right;\n case '%':\n return left % right;\n }\n return null;\n case 'if':\n var /** @type {?} */ condition = simplify(expression['condition']);\n return condition\n ? simplify(expression['thenExpression']) :\n simplify(expression['elseExpression']);\n case 'pre':\n var /** @type {?} */ operand = simplify(expression['operand']);\n if (shouldIgnore(operand))\n return operand;\n switch\n (expression['operator']) {\n case '+':\n return operand;\n case '-':\n return -operand;\n case '!':\n return !operand;\n case '~':\n return ~operand;\n }\n var /** @type {?} */\n indexTarget = simplifyEagerly(expression['expression']);\n var /** @type {?} */ index =\n simplifyEagerly(expression['index']);\n if (indexTarget && isPrimitive(index))\n return indexTarget[index];\n return null;\n case 'select':\n var /** @type {?} */ member = expression['member'];\n var /** @type {?} */ selectTarget = simplify(expression['expression']);\n var /** @type {?} */ selectContext =\n context;\n var /** @type {?} */ members =\n selectTarget instanceof StaticSymbol ?\n selectTarget.members.concat(member) :\n self.getStaticSymbol(selectTarget.filePath, selectTarget.name, members);\n var /** @type {?} */\n declarationValue = resolveReferenceValue(selectContext);\n if (declarationValue != null)\n {\n return simplifyNested(selectContext, declarationValue);\n }\n else {\n return selectContext;\n }\n }\n if (selectTarget && isPrimitive(member))\n return\n simplifyNested(selectContext, selectTarget[member]);\n return null;\n case\n 'reference':\n // Note: This only has to deal with variable references, as symbol references have\n // been converted into 'resolved'\n // in the StaticSymbolResolver.\n var /** @type {?} */ name_2 = expression['name'];\n var /** @type {?} */ localValue =\n scope.resolve(name_2);\n if (localValue != BindingScope.missing) {\n return localValue;\n }\n break;\n case 'resolved':\n try {\n return simplify(expression.symbol);\n }\n catch (/** @type {?} */ e) {\n // If an error is reported evaluating the symbol record the\n // position of the\n // reference in the error so it can\n // be reported in the\n // error message generated from the exception.\n if (isMetadataError(e) && expression.fileName\n != null &&\n expression.line != null && expression.character != null) {\n e.position = {\n fileName: expression.fileName,\n line:\n expression.line,\n column: expression.character\n };\n }\n throw e;\n }\n case 'class':\n return context;\n case\n 'new':\n case 'call':\n // Determine if the function is a built-in conversion\n
```



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 staticSymbol = simplifyInContext(context, expression['expression'], depth + 1, /* references */ 0);\n
 if (staticSymbol instanceof StaticSymbol) {\n
 self.injectionToken || staticSymbol === self.opaqueToken) {\n
 InjectionToken, don't create an InjectionToken,\n
 the InjectionToken is assigned to.\n
 language service to\n
 return context;\n
 expression['arguments'] || [];\n
 self.conversionMap.get(staticSymbol);\n
 @type {?} */ args = argExpressions.map(function (arg) { return simplifyNested(context, arg); });\n
 .map(function (arg) { return shouldIgnore(arg) ? undefined : arg; });\n
 converter(context, args);\n
 Determine if the function is one we can simplify.\n
 resolveReferenceValue(staticSymbol);\n
 argExpressions, expression['expression']);\n
 return IGNORE;\n
 expression.message;\n
 message: message,\n
 value: expression,\n
 expression['fileName'],\n
 expression['character']\n
 else {\n
 return expression;\n
 mapStringMap(expression, function (value, name) {\n
 if (name === USE_VALUE && PROVIDE in expression) {\n
 expression, check for special tokens that need the value\n
 var /** @type {?} */ provide = simplify(expression.provide);\n
 provide === self.ANALYZE_FOR_ENTRY_COMPONENTS) {\n
 return simplify(value);\n
 return simplify(value);\n
 simplify(value);\n
 value, 0, 0);\n
 this.reportError(e, context);\n
 }\n
 }\n
 * @param {?} type\n
 * @return {?}\n
 *^/\n
 StaticReflector.prototype.getTypeMetadata = /**\n
 * @param\n
 {?} type\n
 * @return {?}\n
 *^/\n
 function (type) {\n
 var /** @type {?} */ resolvedSymbol =\n
 this.symbolResolver.resolveSymbol(type);\n
 resolvedSymbol.metadata ?\n
 resolvedSymbol.metadata : {\n
 __symbolic: 'class' }\n
 });\n
 * @param\n
 {?} context\n
 * @param\n
 {=} path\n
 * @return\n
 {?}\n
 *^/\n
 StaticReflector.prototype.reportError = /**\n
 * @param\n
 {?} error\n
 * @param\n
 {?} context\n
 * @param\n
 {=} path\n
 * @return\n
 {?}\n
 *^/\n
 function\n
 (error, context, path) {\n
 if (this.errorRecorder) {\n
 this.errorRecorder(formatMetadataError(error,\n
 context), (context && context.filePath) || path);\n
 }\n
 else {\n
 throw error;\n
 }\n
 });\n
 * @param\n
 {?} __0\n
 * @param\n
 {?} reportingContext\n
 * @return\n
 {?}\n
 *^/\n
 StaticReflector.prototype.error = /**\n
 * @param\n
 {?} __0\n
 * @param\n
 {?} reportingContext\n
 * @return\n
 {?}\n
 *^/\n
 function (_a, reportingContext) {\n
 var message = _a.message, summary = _a.summary, advise =\n
 _a.advise, position = _a.position, context = _a.context, value = _a.value, symbol = _a.symbol, chain = _a.chain;\n
 this.reportError(metadataError(message, summary, advise, position, symbol, context, chain), reportingContext);\n
 }\n
 }\n
 if (staticSymbol ===\n
 // if somebody calls new\n
 // but rather return the symbol to which\n
 // OpaqueToken is supported too as it is required by the\n
 // support v4 and prior versions of Angular.\n
 var /** @type {?} */ argExpressions =\n
 var /** @type {?} */ converter =\n
 var /**\n
 return\n
 //\n
 var /** @type {?} */ targetFunction =\n
 return simplifyCall(staticSymbol, targetFunction,\n
 }\n
 }\n
 var /** @type {?} */ message =\n
 self.error({\n
 context: expression.context,\n
 fileName:\n
 line: expression['line'],\n
 column:\n
 }, context);\n
 }\n
 self.error({ message: message, context: expression.context }, context);\n
 return IGNORE;\n
 case 'ignore':\n
 return\n
 if (REFERENCE_SET.has(name)) {\n
 // If this is a provider\n
 // during analysis.\n
 if (provide === self.ROUTES ||\n
 return simplify(value);\n
 return simplifyLazily(value);\n
 return\n
 return\n
 return\n
 result;\n
 try {\n
 result = simplifyInContext(context,\n
 if (this.errorRecorder) {\n
 throw formatMetadataError(e, context);\n
 }\n
 return result;\n
 });\n
 * @param\n
 * @return\n
 *^/\n
 StaticReflector.prototype.getTypeMetadata = /**\n
 * @param\n
 {?} type\n
 * @return\n
 {?}\n
 *^/\n
 function (type) {\n
 var /** @type {?} */ resolvedSymbol =\n
 this.symbolResolver.resolveSymbol(type);\n
 return resolvedSymbol && resolvedSymbol.metadata ?\n
 resolvedSymbol.metadata : {\n
 __symbolic: 'class' }\n
 });\n
 * @param\n
 {?} error\n
 * @param\n
 {?} context\n
 * @param\n
 {=} path\n
 * @return\n
 {?}\n
 *^/\n
 StaticReflector.prototype.reportError = /**\n
 * @param\n
 {?} error\n
 * @param\n
 {?} context\n
 * @param\n
 {=} path\n
 * @return\n
 {?}\n
 *^/\n
 function\n
 (error, context, path) {\n
 if (this.errorRecorder) {\n
 this.errorRecorder(formatMetadataError(error,\n
 context), (context && context.filePath) || path);\n
 }\n
 else {\n
 throw error;\n
 }\n
 });\n
 * @param\n
 {?} __0\n
 * @param\n
 {?} reportingContext\n
 * @return\n
 {?}\n
 *^/\n
 StaticReflector.prototype.error = /**\n
 * @param\n
 {?} __0\n
 * @param\n
 {?} reportingContext\n
 * @return\n
 {?}\n
 *^/\n
 function (_a, reportingContext) {\n
 var message = _a.message, summary = _a.summary, advise =\n
 _a.advise, position = _a.position, context = _a.context, value = _a.value, symbol = _a.symbol, chain = _a.chain;\n
 this.reportError(metadataError(message, summary, advise, position, symbol, context, chain), reportingContext);\n
 }

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};\n return StaticReflector;\n})();\nvar METADATA_ERROR = 'ngMetadataError';\n/**\n * @param {?}
message\n * @param {?=} summary\n * @param {?=} advise\n * @param {?=} position\n * @param {?=}
symbol\n * @param {?=} context\n * @param {?=} chain\n * @return {?}\n */\nfunction metadataError(message,
summary, advise, position, symbol, context, chain) {\n var /** @type {?} */ error = /** @type {?} */
(syntaxError(message));\n /** @type {?} */ (error)[METADATA_ERROR] = true;\n if (advise)\n error.advise = advise;\n if (position)\n error.position = position;\n if (summary)\n error.summary =
summary;\n if (context)\n error.context = context;\n if (chain)\n error.chain = chain;\n if (symbol)\n error.symbol = symbol;\n return error;\n}\n/**\n * @param {?} error\n * @return {?}\n */\nfunction
isMetadataError(error) {\n return !!(/** @type {?} */ (error)[METADATA_ERROR]);\n}\nvar
REFERENCE_TO_NONEXPORTED_CLASS = 'Reference to non-exported class';\nvar
VARIABLE_NOT_INITIALIZED = 'Variable not initialized';\nvar DESTRUCTURE_NOT_SUPPORTED =
'Destructuring not supported';\nvar COULD_NOT_RESOLVE_TYPE = 'Could not resolve type';\nvar
FUNCTION_CALL_NOT_SUPPORTED = 'Function call not supported';\nvar
REFERENCE_TO_LOCAL_SYMBOL = 'Reference to a local symbol';\nvar LAMBDA_NOT_SUPPORTED =
'Lambda not supported';\n/**\n * @param {?} message\n * @param {?} context\n * @return {?}\n */\nfunction
expandedMessage(message, context) {\n switch (message) {\n case
REFERENCE_TO_NONEXPORTED_CLASS:\n if (context && context.className) {\n return
\"References to a non-exported class are not supported in decorators but \" + context.className + \" was
referenced.\";\n }\n break;\n case VARIABLE_NOT_INITIALIZED:\n return 'Only
initialized variables and constants can be referenced in decorators because the value of this variable is needed by the
template compiler';\n case DESTRUCTURE_NOT_SUPPORTED:\n return 'Referencing an exported
destructured variable or constant is not supported in decorators and this value is needed by the template compiler';\n case COULD_NOT_RESOLVE_TYPE:\n if (context && context.typeName) {\n return \"Could
not resolve type \" + context.typeName;\n }\n break;\n case
FUNCTION_CALL_NOT_SUPPORTED:\n if (context && context.name) {\n return \"Function
calls are not supported in decorators but \" + context.name + \" was called\";\n }\n return 'Function
calls are not supported in decorators';\n case REFERENCE_TO_LOCAL_SYMBOL:\n if (context &&
context.name) {\n return \"Reference to a local (non-exported) symbols are not supported in decorators but
\" + context.name + \" was referenced\";\n }\n break;\n case LAMBDA_NOT_SUPPORTED:\n return \"Function expressions are not supported in decorators\";\n }\n return message;\n}\n/**\n * @param
{?} message\n * @param {?} context\n * @return {?}\n */\nfunction messageAdvise(message, context) {\n
switch (message) {\n case REFERENCE_TO_NONEXPORTED_CLASS:\n if (context &&
context.className) {\n return \"Consider exporting \" + context.className + \"\";\n }\n break;\n case DESTRUCTURE_NOT_SUPPORTED:\n return 'Consider simplifying to avoid
destructuring';\n case REFERENCE_TO_LOCAL_SYMBOL:\n if (context && context.name) {\n return \"Consider exporting \" + context.name + \"\";\n }\n break;\n case
LAMBDA_NOT_SUPPORTED:\n return \"Consider changing the function expression into an exported
function\";\n }\n return undefined;\n}\n/**\n * @param {?} error\n * @return {?}\n */\nfunction
errorSummary(error) {\n if (error.summary) {\n return error.summary;\n }\n switch (error.message) {\n case REFERENCE_TO_NONEXPORTED_CLASS:\n if (error.context && error.context.className) {\n return \"references non-exported class \" + error.context.className;\n }\n break;\n case
VARIABLE_NOT_INITIALIZED:\n return 'is not initialized';\n case
DESTRUCTURE_NOT_SUPPORTED:\n return 'is a destructured variable';\n case
COULD_NOT_RESOLVE_TYPE:\n return 'could not be resolved';\n case
FUNCTION_CALL_NOT_SUPPORTED:\n if (error.context && error.context.name) {\n return
\"calls \" + error.context.name + \"\";\n }\n return \"calls a function\";\n case
REFERENCE_TO_LOCAL_SYMBOL:\n if (error.context && error.context.name) {\n return
\"references local variable \" + error.context.name;\n }\n return \"references a local variable\";\n }\n}

```

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return 'contains the error';\n\n/**\n * @param {?} input\n * @param {?} transform\n * @return {?}\n */\nfunction\nmapStringMap(input, transform) {\n if (!input)\n return {};\n var /** @type {?} */ result = {};\n Object.keys(input).forEach(function (key) {\n var /** @type {?} */ value = transform(input[key], key);\n if\n(!shouldIgnore(value)) {\n if (HIDDEN_KEY.test(key)) {\n Object.defineProperty(result, key, {\n enumerable: false, configurable: true, value: value });\n }\n else {\n result[key] = value;\n }\n }\n });\n return result;\n}\n\n/**\n * @param {?} o\n * @return {?}\n */\nfunction isPrimitive(o) {\n return o === null || (typeof o !== 'function' && typeof o !== 'object');\n}\n\n/**\n * @abstract\n */\nvar BindingScope\n= /** @class */ (function () {\n function BindingScope() {\n }\n /**\n * @return {?}\n */\n BindingScope.build = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ current = new\nMap();\n return {\n define: function (name, value) {\n current.set(name, value);\n },\n done: function () {\n return current.size > 0 ? new PopulatedScope(current)\n: BindingScope.empty;\n }\n }; \n BindingScope.missing = {};\n BindingScope.empty = {\n resolve: function (name) {\n return BindingScope.missing;\n }\n }; \n return BindingScope;\n }();\n var PopulatedScope\n= /** @class */ (function (_super) {\n __extends(PopulatedScope, _super);\n function PopulatedScope(bindings)\n {\n var _this = _super.call(this) || this;\n _this.bindings = bindings;\n return _this;\n }\n /**\n * @param {?} name\n * @return {?}\n */\n PopulatedScope.prototype.resolve = /**\n * @param {?} name\n * @return {?}\n */\n function (name) {\n return this.bindings.has(name) ?\nthis.bindings.get(name) : BindingScope.missing;\n }; \n return PopulatedScope;\n })(BindingScope);\n /**\n * @param {?} chain\n * @param {?} advise\n * @return {?}\n */\n function formatMetadataMessageChain(chain,\nadvise) {\n var /** @type {?} */ expanded = expandedMessage(chain.message, chain.context);\n var /** @type\n{?} */ nesting = chain.symbol ? \" in \" + chain.symbol.name + \"\": \"\";\n var /** @type {?} */ message = \"\" +\nexpanded + nesting;\n var /** @type {?} */ position = chain.position;\n var /** @type {?} */ next = chain.next\n? \nformatMetadataMessageChain(chain.next, advise) : \nadvise ? { message: advise } : undefined;\n return {\n message: message,\n position: position,\n next: next\n};\n }\n /**\n * @param {?} e\n * @param {?} context\n * @return {?}\n */\n function formatMetadataError(e, context) {\n if (isMetadataError(e)) {\n // Produce a\nformatted version of the and leaving enough information in the original error\n // to recover the formatting\ninformation to eventually produce a diagnostic error message.\n var /** @type {?} */ position = e.position;\n var /** @type {?} */ chain = {\n message: \"Error during template compile of \" + context.name + \"\",\n position: position,\n next: {\n message: e.message,\n next: e.chain,\n context: e.context,\n symbol: e.symbol\n }\n };\n var /** @type {?} */ advise = e.advise || messageAdvise(e.message, e.context);\n return\nformattedError(formatMetadataMessageChain(chain, advise));\n }\n return e;\n }\n}\n\n/**\n * @fileoverview\nadded by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All\nRights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\nLICENSE file at https://angular.io/license\n */\n\n/**\n * @record\n */\nvar AotSummaryResolver = /** @class */\n(function () {\n function AotSummaryResolver(host, staticSymbolCache) {\n this.host = host;\n this.staticSymbolCache = staticSymbolCache;\n this.summaryCache = new Map();\n this.loadedFilePaths =\nnew Map();\n this.importAs = new Map();\n this.knownFileNameToModuleNames = new Map();\n }\n /**\n * @param {?} filePath\n * @return {?}\n */\n AotSummaryResolver.prototype.isLibraryFile = /**\n * @param {?} filePath\n * @return {?}\n */\n function (filePath) {\n // Note: We need to strip the\n.ngfactory. file path,\n // so this method also works for generated files\n // (for which host.isSourceFile will\nalways return false).\n return !this.host.isSourceFile(stripGeneratedFileSuffix(filePath));\n }; \n /**\n * @param {?} filePath\n * @param {?} referringSrcFileName\n * @return {?}\n */\n AotSummaryResolver.prototype.toSummaryFileName = /**\n * @param {?} filePath\n * @param {?} referringSrcFileName\n * @return {?}\n */\n function (filePath, referringSrcFileName) {\n return\nthis.host.toSummaryFileName(filePath, referringSrcFileName);\n }; \n /**\n * @param {?} fileName\n * @param {?} referringLibFileName\n * @return {?}\n */\n AotSummaryResolver.prototype.fromSummaryFileName = /**\n * @param {?} fileName\n * @param {?} referringLibFileName\n * @return {?}\n */\n function (fileName, referringLibFileName) {\n return

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this.host.fromSummaryFileName(fileName, referringLibFileName);\n
};\n
/**\n
 * @param {?}
staticSymbol\n
 * @return {?}\n
 */\n
AotSummaryResolver.prototype.resolveSummary = /**\n
 * @param
 {?} staticSymbol\n
 * @return {?}\n
 */\n
function (staticSymbol) {\n
 var /** @type {?} */ rootSymbol =
staticSymbol.members.length ?\n
 this.staticSymbolCache.get(staticSymbol.filePath, staticSymbol.name) :\n
 staticSymbol;\n
 var /** @type {?} */ summary = this.summaryCache.get(rootSymbol);\n
 if
(!summary) {\n
 this._loadSummaryFile(staticSymbol.filePath);\n
 summary = /** @type {?} */
((this.summaryCache.get(staticSymbol)));\n
 }\n
 return (rootSymbol === staticSymbol && summary) ||
null;\n
};\n
/**\n
 * @param {?} filePath\n
 * @return {?}\n
 */\n
AotSummaryResolver.prototype.getSymbolsOf = /**\n
 * @param {?} filePath\n
 * @return {?}\n
 */\n
function (filePath) {\n
 if (this._loadSummaryFile(filePath)) {\n
 return
Array.from(this.summaryCache.keys()).filter(function (symbol) { return symbol.filePath === filePath; });\n
 }\n
 return null;\n
};\n
/**\n
 * @param {?} staticSymbol\n
 * @return {?}\n
 */\n
AotSummaryResolver.prototype.getImportAs = /**\n
 * @param {?} staticSymbol\n
 * @return {?}\n
 */\n
function (staticSymbol) {\n
 staticSymbol.assertNoMembers();\n
 return /** @type {?} */
((this.importAs.get(staticSymbol)));\n
};\n
/**\n
 * Converts a file path to a module name that can be used as
an `import`.\n
 */\n
/**\n
 * Converts a file path to a module name that can be used as an `import`.\n
 *
 * @param {?} importedFilePath\n
 * @return {?}\n
 */\n
AotSummaryResolver.prototype.getKnownModuleName = /**\n
 * Converts a file path to a module name that can
be used as an `import`.\n
 *
 * @param {?} importedFilePath\n
 * @return {?}\n
 */\n
function
(importedFilePath) {\n
 return this.knownFileNameToModuleNames.get(importedFilePath) || null;\n
};\n
/**\n
 * @param {?} summary\n
 * @return {?}\n
 */\n
AotSummaryResolver.prototype.addSummary =
/**\n
 * @param {?} summary\n
 * @return {?}\n
 */\n
function (summary) {\n
 this.summaryCache.set(summary.symbol, summary); }\n
/**\n
 * @param {?} filePath\n
 * @return {?}\n
 */\n
AotSummaryResolver.prototype._loadSummaryFile = /**\n
 * @param {?} filePath\n
 * @return {?}\n
 */\n
function (filePath) {\n
 var _this = this;\n
 var /** @type {?} */ hasSummary =
this.loadedFilePaths.get(filePath);\n
 if (hasSummary != null) {\n
 return hasSummary;\n
 }\n
 var
/** @type {?} */ json = null;\n
 if (this.isLibraryFile(filePath)) {\n
 var /** @type {?} */
summaryFilePath = summaryFileName(filePath);\n
 try {\n
 json =
this.host.loadSummary(summaryFilePath);\n
 }\n
 catch (** @type {?} */ e) {\n
 console.error("Error loading summary file " + summaryFilePath);\n
 throw e;\n
 }\n
 }\n
 hasSummary = json != null;\n
 this.loadedFilePaths.set(filePath, hasSummary);\n
 if (json) {\n
 var _a
= deserializeSummaries(this.staticSymbolCache, this, filePath, json), moduleName = _a.moduleName, summaries =
_a.summaries, importAs = _a.importAs;\n
 summaries.forEach(function (summary) { return
_this.summaryCache.set(summary.symbol, summary); });\n
 if (moduleName) {\n
 this.knownFileNameToModuleNames.set(filePath, moduleName);\n
 }\n
 importAs.forEach(function
(importAs) { _this.importAs.set(importAs.symbol, importAs.importAs); });\n
 }\n
 return hasSummary;\n
};\n
return AotSummaryResolver;\n
})();\n
/**\n
 * @fileoverview added by tsickle\n
 * @suppress {checkTypes}
checked by tsc\n
 */\n
/**\n
 * @license\n
 * Copyright Google Inc. All Rights Reserved.\n
 * Use of this source
code is governed by an MIT-style license that can be\n
 * found in the LICENSE file at https://angular.io/license\n
 */\n
/**\n
 * @param {?} host\n
 * @return {?}\n
 */\n
function createAotUrlResolver(host) {\n
 return {\n
resolve: function (basePath, url) {\n
 var /** @type {?} */ filePath = host.resourceNameToFileName(url,
basePath);\n
 if (!filePath) {\n
 throw syntaxError("Couldn't resolve resource " + url + " from " +
basePath);\n
 }\n
 return filePath;\n
 }\n
};\n
}\n
/**\n
 * Creates a new AotCompiler based on
options and a host.\n
 *
 * @param {?} compilerHost\n
 * @param {?} options\n
 * @param {?=} errorCollector\n
 *
 * @return {?}\n
 */\n
function createAotCompiler(compilerHost, options, errorCollector) {\n
 var /** @type {?} */
translations = options.translations || "";\n
 var /** @type {?} */ urlResolver =
createAotUrlResolver(compilerHost);\n
 var /** @type {?} */ symbolCache = new StaticSymbolCache();\n
 var
/** @type {?} */ summaryResolver = new AotSummaryResolver(compilerHost, symbolCache);\n
 var /** @type

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{?} */ symbolResolver = new StaticSymbolResolver(compilerHost, symbolCache, summaryResolver);\n var /**
@type {?} */ staticReflector = new StaticReflector(summaryResolver, symbolResolver, [], [], errorCollector);\n
var /** @type {?} */ htmlParser = new I18NHtmlParser(new HtmlParser(), translations, options.i18nFormat,
options.missingTranslation, console);\n var /** @type {?} */ config = new CompilerConfig({\n
defaultEncapsulation: ViewEncapsulation.Emulated,\n useJit: false,\n enableLegacyTemplate:
options.enableLegacyTemplate === true,\n missingTranslation: options.missingTranslation,\n
preserveWhitespaces: options.preserveWhitespaces,\n strictInjectionParameters:
options.strictInjectionParameters,\n });\n var /** @type {?} */ normalizer = new DirectiveNormalizer({ get:
function (url) { return compilerHost.loadResource(url); }, urlResolver, htmlParser, config);\n var /** @type {?}
*/ expressionParser = new Parser(new Lexer());\n var /** @type {?} */ elementSchemaRegistry = new
DomElementSchemaRegistry();\n var /** @type {?} */ tmplParser = new TemplateParser(config, staticReflector,
expressionParser, elementSchemaRegistry, htmlParser, console, []);\n var /** @type {?} */ resolver = new
CompileMetadataResolver(config, htmlParser, new NgModuleResolver(staticReflector), new
DirectiveResolver(staticReflector), new PipeResolver(staticReflector), summaryResolver, elementSchemaRegistry,
normalizer, console, symbolCache, staticReflector, errorCollector);\n // TODO(vic): do not pass
options.i18nFormat here\n var /** @type {?} */ viewCompiler = new ViewCompiler(staticReflector);\n var /**
@type {?} */ typeCheckCompiler = new TypeCheckCompiler(options, staticReflector);\n var /** @type {?} */
compiler = new AotCompiler(config, options, compilerHost, staticReflector, resolver, tmplParser, new
StyleCompiler(urlResolver), viewCompiler, typeCheckCompiler, new NgModuleCompiler(staticReflector), new
TypeScriptEmitter(), summaryResolver, symbolResolver);\n return { compiler: compiler, reflector: staticReflector
};\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n *
@record\n */\n\n * @abstract\n */\n\nvar SummaryResolver = /** @class */ (function () {\n function
SummaryResolver() {\n }\n return SummaryResolver;\n})();\n\nvar JitSummaryResolver = /** @class */
(function () {\n function JitSummaryResolver() {\n this._summaries = new Map();\n }\n /**\n *
@return {?} \n */\n JitSummaryResolver.prototype.isLibraryFile = /**\n * @return {?} \n */\n function ()
{ return false; }; \n /**\n * @param {?} fileName\n */\n JitSummaryResolver.prototype.toSummaryFileName = /**\n * @param {?} fileName\n */\n function (fileName) { return fileName; }; \n /**\n * @param {?} fileName\n */\n JitSummaryResolver.prototype.fromSummaryFileName = /**\n * @param {?} fileName\n */\n function (fileName) { return fileName; }; \n /**\n * @param {?} reference\n */\n JitSummaryResolver.prototype.resolveSummary = /**\n * @param {?} reference\n */\n function (reference) {\n return this._summaries.get(reference) || null;\n }; \n /**\n * @return {?} \n */\n JitSummaryResolver.prototype.getSymbolsOf = /**\n * @return {?} \n */\n function () { return []; }; \n /**\n * @param {?} reference\n */\n JitSummaryResolver.prototype.getImportAs = /**\n * @param {?} reference\n */\n function (reference) { return reference; }; \n /**\n *
@param {?} fileName\n */\n JitSummaryResolver.prototype.getKnownModuleName =
/**\n * @param {?} fileName\n */\n function (fileName) { return null; }; \n /**\n *
@param {?} summary\n */\n JitSummaryResolver.prototype.addSummary = /**\n *
@param {?} summary\n */\n function (summary) { this._summaries.set(summary.symbol,
summary); }; \n return JitSummaryResolver;\n})();\n\n/**\n * @fileoverview added by tsickle\n * @suppress
{checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n */\n * Use of
this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n */\n\n * @param {?} statements\n */\n * @param {?} reflector\n */\n * @return {?} \n
*/\n\nfunction interpretStatements(statements, reflector) {\n var /** @type {?} */ ctx = new
_ExecutionContext(null, null, null, new Map());\n var /** @type {?} */ visitor = new
StatementInterpreter(reflector);\n visitor.visitAllStatements(statements, ctx);\n var /** @type {?} */ result =
{};\n ctx.exports.forEach(function (exportName) { result[exportName] = ctx.vars.get(exportName); });\n return
result;\n}\n\n/**\n * @param {?} varNames\n */\n * @param {?} varValues\n */\n * @param {?} statements\n */\n * @param {?}

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ctx\n * @param {?} visitor\n * @return {?}\n *\nfunction _executeFunctionStatements(varNames, varValues,
statements, ctx, visitor) {\n var /** @type {?} */ childCtx = ctx.createChildWithLocalVars();\n for (var /**
@type {?} */ i = 0; i < varNames.length; i++) {\n childCtx.vars.set(varNames[i], varValues[i]);\n }\n var
/** @type {?} */ result = visitor.visitAllStatements(statements, childCtx);\n return result ? result.value :
null;\n}\n\nvar _ExecutionContext = /** @class */ (function () {\n function _ExecutionContext(parent, instance,
className, vars) {\n this.parent = parent;\n this.instance = instance;\n this.className = className;\n this.vars = vars;\n this.exports = [];\n }\n /**\n * @return {?}\n *\n */\n _ExecutionContext.prototype.createChildWithLocalVars = /**\n * @return {?}\n *\n */ function () {\n
return new _ExecutionContext(this, this.instance, this.className, new Map());\n }; \n return
_ExecutionContext;\n})();\n\nvar ReturnValue = /** @class */ (function () {\n function ReturnValue(value) {\n
this.value = value;\n }\n return ReturnValue;\n})();\n\n/**\n * @param {?} _classStmt\n * @param {?} _ctx\n *
@param {?} _visitor\n * @return {?}\n *\nfunction createDynamicClass(_classStmt, _ctx, _visitor) {\n var /**
@type {?} */ propertyDescriptors = {};\n _classStmt.getters.forEach(function (getter) {\n // Note: use
`function` instead of arrow function to capture `this`\n propertyDescriptors[getter.name] = {\n
configurable: false,\n get: function () {\n var /** @type {?} */ instanceCtx = new
_ExecutionContext(_ctx, this, _classStmt.name, _ctx.vars);\n return _executeFunctionStatements([], [],
getter.body, instanceCtx, _visitor);\n }\n });\n _classStmt.methods.forEach(function (method)
{\n var /** @type {?} */ paramNames = method.params.map(function (param) { return param.name; });\n
// Note: use `function` instead of arrow function to capture `this`\n propertyDescriptors[/** @type {?} */
((method.name))] = {\n writable: false,\n configurable: false,\n value: function () {\n
var args = [];\n for (var _i = 0; _i < arguments.length; _i++) {\n args[_i] = arguments[_i];\n
 }\n var /** @type {?} */ instanceCtx = new _ExecutionContext(_ctx, this, _classStmt.name,
_ctx.vars);\n return _executeFunctionStatements(paramNames, args, method.body, instanceCtx,
_visitor);\n }\n });\n var /** @type {?} */ ctorParamNames =
_classStmt.constructorMethod.params.map(function (param) { return param.name; });\n // Note: use `function`
instead of arrow function to capture `this`\n var /** @type {?} */ ctor = function () {\n var _this = this;\n
var args = [];\n for (var _i = 0; _i < arguments.length; _i++) {\n args[_i] = arguments[_i];\n }\n
var /** @type {?} */ instanceCtx = new _ExecutionContext(_ctx, this, _classStmt.name, _ctx.vars);\n
_classStmt.fields.forEach(function (field) { _this[field.name] = undefined; });\n
_executeFunctionStatements(ctorParamNames, args, _classStmt.constructorMethod.body, instanceCtx, _visitor);\n
};\n var /** @type {?} */ superClass = _classStmt.parent ? _classStmt.parent.visitExpression(_visitor, _ctx) :
Object;\n ctor.prototype = Object.create(superClass.prototype, propertyDescriptors);\n return ctor;\n}\n\nvar
StatementInterpreter = /** @class */ (function () {\n function StatementInterpreter(reflector) {\n this.reflector
= reflector;\n }\n /**\n * @param {?} ast\n * @return {?}\n *\n */\n StatementInterpreter.prototype.debugAst = /**\n * @param {?} ast\n * @return {?}\n *\n */ function (ast) {\n
return debugOutputAstAsTypeScript(ast); }\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return
{?}\n *\n */\n StatementInterpreter.prototype.visitDeclareVarStmt = /**\n * @param {?} stmt\n * @param {?}
ctx\n * @return {?}\n *\n */ function (stmt, ctx) {\n ctx.vars.set(stmt.name,
stmt.value.visitExpression(this, ctx));\n if (stmt.hasModifier(StmtModifier.Exported)) {\n
ctx.exports.push(stmt.name);\n }\n return null;\n }; \n /**\n * @param {?} expr\n * @param {?}
ctx\n * @return {?}\n *\n */\n StatementInterpreter.prototype.visitWriteVarExpr = /**\n * @param {?} expr\n
* @param {?} ctx\n * @return {?}\n *\n */ function (expr, ctx) {\n var /** @type {?} */ value =
expr.value.visitExpression(this, ctx);\n var /** @type {?} */ currCtx = ctx;\n while (currCtx != null) {\n
 if (currCtx.vars.has(expr.name)) {\n currCtx.vars.set(expr.name, value);\n return value;\n
 }\n currCtx = /** @type {?} */ ((currCtx.parent));\n }\n throw new Error("Not declared variable \\"
+ expr.name);\n }; \n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n *\n */\n
StatementInterpreter.prototype.visitReadVarExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return
{?}\n *\n */ function (ast, ctx) {\n var /** @type {?} */ varName = /** @type {?} */ ((ast.name));\n if

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(ast.builtin != null) {\n switch (ast.builtin) {\n case BuiltinVar.Super:\n return\n ctx.instance.__proto__;\n case BuiltinVar.This:\n return ctx.instance;\n case\n BuiltinVar.CatchError:\n varName = CATCH_ERROR_VAR$2;\n break;\n case\n BuiltinVar.CatchStack:\n varName = CATCH_STACK_VAR$2;\n break;\n default:\n throw new Error("Unknown builtin variable \" + ast.builtin);\n }\n }\n var /**\n @type {?} */ currCtx = ctx;\n while (currCtx != null) {\n if (currCtx.vars.has(varName)) {\n return currCtx.vars.get(varName);\n }\n currCtx = /** @type {?} */ ((currCtx.parent));\n }\n throw new Error("Not declared variable \" + varName);\n };\n /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitWriteKeyExpr = /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?} */\n * ^\n function (expr, ctx) {\n var /** @type {?} */ receiver =\n expr.receiver.visitExpression(this, ctx);\n var /** @type {?} */ index = expr.index.visitExpression(this, ctx);\n var /** @type {?} */ value = expr.value.visitExpression(this, ctx);\n receiver[index] = value;\n return\n value;\n };\n /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitWritePropExpr = /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?} */\n * ^\n function (expr, ctx) {\n var /** @type {?} */ receiver =\n expr.receiver.visitExpression(this, ctx);\n var /** @type {?} */ value = expr.value.visitExpression(this, ctx);\n receiver[expr.name] = value;\n return value;\n };\n /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitInvokeMethodExpr = /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?} */\n * ^\n function (expr, ctx) {\n var /** @type {?} */ receiver =\n expr.receiver.visitExpression(this, ctx);\n var /** @type {?} */ args = this.visitAllExpressions(expr.args, ctx);\n var /** @type {?} */ result;\n if (expr.builtin != null) {\n switch (expr.builtin) {\n case\n BuiltinMethod.ConcatArray:\n result = receiver.concat.apply(receiver, args);\n break;\n case BuiltinMethod.SubscribeObservable:\n result = receiver.subscribe({ next: args[0] });\n break;\n case BuiltinMethod.Bind:\n result = receiver.bind.apply(receiver, args);\n break;\n default:\n throw new Error("Unknown builtin method \" + expr.builtin);\n }\n }\n else {\n result = receiver[/** @type {?} */ ((expr.name))].apply(receiver, args);\n }\n return result;\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitInvokeFunctionExpr = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n function (stmt, ctx) {\n var /** @type {?} */ args = this.visitAllExpressions(stmt.args,\n ctx);\n var /** @type {?} */ fnExpr = stmt.fn;\n if (fnExpr instanceof ReadVarExpr && fnExpr.builtin ===\n BuiltinVar.Super) {\n ctx.instance.constructor.prototype.constructor.apply(ctx.instance, args);\n return\n null;\n }\n else {\n var /** @type {?} */ fn$$1 = stmt.fn.visitExpression(this, ctx);\n return\n fn$$1.apply(null, args);\n }\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitReturnStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n function (stmt, ctx) {\n return new ReturnValue(stmt.value.visitExpression(this, ctx));\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitDeclareClassStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n function (stmt, ctx) {\n var /** @type {?} */ clazz = createDynamicClass(stmt, ctx,\n this);\n ctx.vars.set(stmt.name, clazz);\n if (stmt.hasModifier(StmtModifier.Exported)) {\n ctx.exports.push(stmt.name);\n }\n return null;\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitExpressionStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n function (stmt, ctx) {\n return\n stmt.expr.visitExpression(this, ctx);\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n StatementInterpreter.prototype.visitIfStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n function (stmt, ctx) {\n var /** @type {?} */ condition =\n stmt.condition.visitExpression(this, ctx);\n if (condition) {\n return this.visitAllStatements(stmt.trueCase,\n ctx);\n }\n else if (stmt.falseCase != null) {\n return this.visitAllStatements(stmt.falseCase, ctx);\n }\n return null;\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?} */\n * ^\n

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StatementInterpreter.prototype.visitTryCatchStmt = /**\n
 * @param {?} stmt\n
 * @param {?} ctx\n
 * @return {?}\n
 */\n
function (stmt, ctx) {\n
 try {\n
 return this.visitAllStatements(stmt.bodyStmts,\n
 ctx);\n
 }\n
 catch (** @type {?} */ e) {\n
 var /** @type {?} */ childCtx =\n
 ctx.createChildWithLocalVars();\n
 childCtx.vars.set(CATCH_ERROR_VAR$2, e);\n
 childCtx.vars.set(CATCH_STACK_VAR$2, e.stack);\n
 return this.visitAllStatements(stmt.catchStmts,\n
 childCtx);\n
 }\n
};\n
/**\n
 * @param {?} stmt\n
 * @param {?} ctx\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitThrowStmt = /**\n
 * @param {?} stmt\n
 * @param {?} ctx\n
 * @return {?}\n
 */\n
function (stmt, ctx) {\n
 throw stmt.error.visitExpression(this, ctx);\n
};\n
/**\n
 * @param\n
 {?} stmt\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitCommentStmt = /**\n
 * @param {?} stmt\n
 * @param {?=} context\n
 * @return {?}\n
 */\n
function (stmt, context) { return null; };\n
/**\n
 * @param {?} ast\n
 * @param {?} ctx\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitInstantiateExpr = /**\n
 * @param {?} ast\n
 * @param {?} ctx\n
 * @return {?}\n
 */\n
function (ast, ctx) {\n
 var /** @type {?} */ args =\n
 this.visitAllExpressions(ast.args, ctx);\n
 var /** @type {?} */ clazz = ast.classExpr.visitExpression(this, ctx);\n
 return new (clazz.bind.apply(clazz, [void 0].concat(args)));\n
};\n
/**\n
 * @param {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitLiteralExpr = /**\n
 * @param {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
function (ast, ctx) { return ast.value; };\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitExternalExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
function (ast, ctx) {\n
 return\n
 this.reflector.resolveExternalReference(ast.value);\n
};\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitConditionalExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
function (ast, ctx) {\n
 if (ast.condition.visitExpression(this, ctx))\n
 {\n
 return ast.trueCase.visitExpression(this, ctx);\n
 }\n
 else if (ast.falseCase != null) {\n
 return\n
 ast.falseCase.visitExpression(this, ctx);\n
 }\n
 return null;\n
};\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
StatementInterpreter.prototype.visitNotExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return {?}\n
 */\n
function (ast, ctx) {\n
 return\n
 !ast.condition.visitExpression(this, ctx);\n
};\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
StatementInterpreter.prototype.visitAssertNotNullExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
function (ast, ctx) {\n
 return ast.condition.visitExpression(this, ctx);\n
};\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
StatementInterpreter.prototype.visitCastExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
function (ast, ctx) {\n
 return ast.value.visitExpression(this, ctx);\n
};\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
StatementInterpreter.prototype.visitFunctionExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
function (ast, ctx) {\n
 var /** @type {?}\n
 */\n
 paramNames = ast.params.map(function (param) { return param.name; });\n
 return _declareFn(paramNames,\n
 ast.statements, ctx, this);\n
};\n
/**\n
 * @param\n
 {?} stmt\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
StatementInterpreter.prototype.visitDeclareFunctionStmt = /**\n
 * @param\n
 {?} stmt\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
function (stmt, ctx) {\n
 var /** @type {?}\n
 */\n
 paramNames =\n
 stmt.params.map(function (param) { return param.name; });\n
 ctx.vars.set(stmt.name, _declareFn(paramNames,\n
 stmt.statements, ctx, this));\n
 if (stmt.hasModifier(StmtModifier.Exported)) {\n
 ctx.exports.push(stmt.name);\n
 }\n
 return null;\n
};\n
/**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
StatementInterpreter.prototype.visitBinaryOperatorExpr = /**\n
 * @param\n
 {?} ast\n
 * @param\n
 {?} ctx\n
 * @return\n
 {?}\n
 */\n
function (ast, ctx) {\n
 var _this = this;\n
 var /**\n
 */\n
 @type {?}\n
 */\n
 lhs = function () { return ast.lhs.visitExpression(_this, ctx); }\n
 var /**\n
 */\n
 @type {?}\n
 */\n
 rhs =\n
 function () { return ast.rhs.visitExpression(_this, ctx); };\n
 switch (ast.operator) {\n
 case\n
 BinaryOperator.Equals:\n
 return lhs() == rhs();\n
 case\n
 BinaryOperator.Idential:\n
 return\n
 lhs() === rhs();\n
 case\n
 BinaryOperator.NotEquals:\n
 return lhs() != rhs();\n
 case\n
 BinaryOperator.NotIdential:\n
 return lhs() !== rhs();\n
 case\n
 BinaryOperator.And:\n
 return

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lhs() && rhs();\n case BinaryOperator.Or:\n return lhs() || rhs();\n case
BinaryOperator.Plus:\n return lhs() + rhs();\n case BinaryOperator.Minus:\n return lhs() -
rhs();\n case BinaryOperator.Divide:\n return lhs() / rhs();\n case BinaryOperator.Multiply:\n
return lhs() * rhs();\n case BinaryOperator.Modulo:\n return lhs() % rhs();\n case
BinaryOperator.Lower:\n return lhs() < rhs();\n case BinaryOperator.LowerEquals:\n
return lhs() <= rhs();\n case BinaryOperator.Bigger:\n return lhs() > rhs();\n case
BinaryOperator.BiggerEquals:\n return lhs() >= rhs();\n default:\n throw new
Error("Unknown operator \" + ast.operator);\n }\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} */\n *^ StatementInterpreter.prototype.visitReadPropExpr = /**\n * @param {?} ast\n *
@param {?} ctx\n * @return {?} */\n *^ function (ast, ctx) {\n var /** @type {?} */ result;\n var /**
@type {?} */ receiver = ast.receiver.visitExpression(this, ctx);\n result = receiver[ast.name];\n return
result;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} */\n *^
StatementInterpreter.prototype.visitReadKeyExpr = /**\n * @param {?} ast\n * @param {?} ctx\n *
@return {?} */\n *^ function (ast, ctx) {\n var /** @type {?} */ receiver = ast.receiver.visitExpression(this,
ctx);\n var /** @type {?} */ prop = ast.index.visitExpression(this, ctx);\n return receiver[prop];\n };\n
/**\n * @param {?} ast\n * @param {?} ctx\n * @return {?} */\n *^
StatementInterpreter.prototype.visitLiteralArrayExpr = /**\n * @param {?} ast\n * @param {?} ctx\n *
@return {?} */\n *^ function (ast, ctx) {\n return this.visitAllExpressions(ast.entries, ctx);\n };\n /**\n
 * @param {?} ast\n * @param {?} ctx\n * @return {?} */\n *^
StatementInterpreter.prototype.visitLiteralMapExpr = /**\n * @param {?} ast\n * @param {?} ctx\n *
@return {?} */\n *^ function (ast, ctx) {\n var _this = this;\n var /** @type {?} */ result = {};\n
ast.entries.forEach(function (entry) { return result[entry.key] = entry.value.visitExpression(_this, ctx); });\n
return result;\n };\n /**\n * @param {?} ast\n * @param {?} context\n * @return {?} */\n *^
StatementInterpreter.prototype.visitCommaExpr = /**\n * @param {?} ast\n * @param {?} context\n *
@return {?} */\n *^ function (ast, context) {\n var /** @type {?} */ values =
this.visitAllExpressions(ast.parts, context);\n return values[values.length - 1];\n };\n /**\n * @param {?}
expressions\n * @param {?} ctx\n * @return {?} */\n *^ StatementInterpreter.prototype.visitAllExpressions
= /**\n * @param {?} expressions\n * @param {?} ctx\n * @return {?} */\n *^ function (expressions,
ctx) {\n var _this = this;\n return expressions.map(function (expr) { return expr.visitExpression(_this, ctx);
});\n };\n /**\n * @param {?} statements\n * @param {?} ctx\n * @return {?} */\n *^
StatementInterpreter.prototype.visitAllStatements = /**\n * @param {?} statements\n * @param {?} ctx\n *
@return {?} */\n *^ function (statements, ctx) {\n for (var /** @type {?} */ i = 0; i < statements.length; i++)
{\n var /** @type {?} */ stmt = statements[i];\n var /** @type {?} */ val = stmt.visitStatement(this,
ctx);\n if (val instanceof ReturnValue) {\n return val;\n }\n }\n return null;\n };\n
return StatementInterpreter;\n})();\n /**\n * @param {?} varNames\n * @param {?} statements\n * @param {?}
ctx\n * @param {?} visitor\n * @return {?} */\n *^ function _declareFn(varNames, statements, ctx, visitor) {\n
return function () {\n var args = [];\n for (var _i = 0; _i < arguments.length; _i++) {\n args[_i] =
arguments[_i];\n }\n return _executeFunctionStatements(varNames, args, statements, ctx, visitor);\n };\n
}\nvar CATCH_ERROR_VAR$2 = 'error';\nvar CATCH_STACK_VAR$2 = 'stack';\n\n/**\n * @fileoverview
added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All
Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n */\n\n/**\n * @abstract\n */\nvar AbstractJsEmitterVisitor = /** @class
*/ (function (_super) {\n __extends(AbstractJsEmitterVisitor, _super);\n function AbstractJsEmitterVisitor() {\n
return _super.call(this, false) || this;\n }\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return
{} */\n *^ AbstractJsEmitterVisitor.prototype.visitDeclareClassStmt = /**\n * @param {?} stmt\n *
@param {?} ctx\n * @return {?} */\n *^ function (stmt, ctx) {\n var _this = this;\n
ctx.pushClass(stmt);\n this._visitClassConstructor(stmt, ctx);\n if (stmt.parent != null) {\n
ctx.print(stmt, stmt.name + ".prototype = Object.create(");\n stmt.parent.visitExpression(this, ctx);\n

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ctx.println(stmt, \".prototype);\");\n }\n stmt.getters.forEach(function (getter) { return
_this._visitClassGetter(stmt, getter, ctx); });\n stmt.methods.forEach(function (method) { return
_this._visitClassMethod(stmt, method, ctx); });\n ctx.popClass();\n return null;\n };\n /**\n *
@param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype._visitClassConstructor = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, ctx) {\n ctx.print(stmt, \"function \" + stmt.name + \"(\");\n if
(stmt.constructorMethod != null) {\n this._visitParams(stmt.constructorMethod.params, ctx);\n }\n ctx.println(stmt, \") {\");\n ctx.incIndent();\n if (stmt.constructorMethod != null) {\n if
(stmt.constructorMethod.body.length > 0) {\n ctx.println(stmt, \"var self = this;\");\n this.visitAllStatements(stmt.constructorMethod.body, ctx);\n }\n }\n ctx.decIndent();\n ctx.println(stmt, \")\");\n };\n /**\n * @param {?} stmt\n * @param {?} getter\n * @param {?} ctx\n * @return {?}\n */\n AbstractJsEmitterVisitor.prototype._visitClassGetter = /**\n * @param {?} stmt\n * @param {?} getter\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, getter, ctx) {\n ctx.println(stmt, \"Object.defineProperty(\" + stmt.name + \".prototype, \" + getter.name + \", { get: function()
{\");\n ctx.incIndent();\n if (getter.body.length > 0) {\n ctx.println(stmt, \"var self = this;\");\n this.visitAllStatements(getter.body, ctx);\n }\n ctx.decIndent();\n ctx.println(stmt, \"});\");\n };\n /**\n * @param {?} stmt\n * @param {?} method\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype._visitClassMethod = /**\n * @param {?} stmt\n * @param {?} method\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, method, ctx) {\n ctx.print(stmt, stmt.name +
\".prototype.\" + method.name + \" = function(\");\n this._visitParams(method.params, ctx);\n ctx.println(stmt, \") {\");\n ctx.incIndent();\n if (method.body.length > 0) {\n ctx.println(stmt, \"var
self = this;\");\n this.visitAllStatements(method.body, ctx);\n }\n ctx.decIndent();\n ctx.println(stmt, \")\");\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype.visitReadVarExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n function (ast, ctx) {\n if (ast.builtin === BuiltinVar.This) {\n ctx.print(ast,
'self');\n }\n else if (ast.builtin === BuiltinVar.Super) {\n throw new Error(\"'super' needs to be
handled at a parent ast node, not at the variable level!\");\n }\n else {\n _super.prototype.visitReadVarExpr.call(this, ast, ctx);\n }\n return null;\n };\n /**\n * @param {?}
stmt\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype.visitDeclareVarStmt =
/**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, ctx) {\n ctx.print(stmt, \"var \" + stmt.name + \" = \");\n stmt.value.visitExpression(this, ctx);\n ctx.println(stmt,
\");\");\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype.visitCastExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return
{?}\n */\n function (ast, ctx) {\n ast.value.visitExpression(this, ctx);\n return null;\n };\n /**\n *
@param {?} expr\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype.visitInvokeFunctionExpr = /**\n * @param {?} expr\n * @param {?} ctx\n * @return {?}\n */\n function (expr, ctx) {\n var /** @type {?} */ fnExpr = expr.fn;\n if (fnExpr
instanceof ReadVarExpr && fnExpr.builtin === BuiltinVar.Super) {\n /** @type {?} */ ((/** @type {?} */
((ctx.currentClass).parent)).visitExpression(this, ctx);\n ctx.print(expr, \".call(this\");\n if
(expr.args.length > 0) {\n ctx.print(expr, \", \");\n this.visitAllExpressions(expr.args, ctx, ',');\n }\n ctx.print(expr, \")\");\n }\n else {\n _super.prototype.visitInvokeFunctionExpr.call(this,
expr, ctx);\n }\n return null;\n };\n /**\n * @param {?} ast\n * @param {?} ctx\n * @return
{?}\n */\n
AbstractJsEmitterVisitor.prototype.visitFunctionExpr = /**\n * @param {?} ast\n * @param
{?}\n * @return {?}\n */\n function (ast, ctx) {\n ctx.print(ast, \"function(\");\n this._visitParams(ast.params, ctx);\n ctx.println(ast, \") {\");\n ctx.incIndent();\n this.visitAllStatements(ast.statements, ctx);\n ctx.decIndent();\n ctx.print(ast, \")\");\n return null;\n
};\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n
AbstractJsEmitterVisitor.prototype.visitDeclareFunctionStmt = /**\n * @param {?} stmt\n * @param {?}

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ctx\n * @return {?}\n *\n function (stmt, ctx) {\n ctx.print(stmt, "function " + stmt.name + "(");\n this._visitParams(stmt.params, ctx);\n ctx.println(stmt, ")");\n ctx.incIndent();\n this.visitAllStatements(stmt.statements, ctx);\n ctx.decIndent();\n ctx.println(stmt, "\n");\n return\n null;\n };\n /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n AbstractJsEmitterVisitor.prototype.visitTryCatchStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n *\n function (stmt, ctx) {\n ctx.println(stmt, "try {\n ctx.incIndent();\n this.visitAllStatements(stmt.bodyStmts, ctx);\n ctx.decIndent();\n ctx.println(stmt, "\n} catch (" +\n CATCH_ERROR_VAR$1.name + ")");\n ctx.incIndent();\n var /** @type {?} */ catchStmts = [/**\n @type {?} */ (CATCH_STACK_VAR$1.set(CATCH_ERROR_VAR$1.prop('stack')).toDeclStmt(null, [\n StmtModifier.Final\n])).concat(stmt.catchStmts);\n this.visitAllStatements(catchStmts, ctx);\n ctx.decIndent();\n ctx.println(stmt, "\n");\n return null;\n };\n /**\n * @param {?} params\n * @param {?} ctx\n * @return {?}\n *\n AbstractJsEmitterVisitor.prototype._visitParams = /**\n * @param {?} params\n * @param {?} ctx\n * @return {?}\n *\n function (params, ctx) {\n this.visitAllObjects(function (param) { return ctx.print(null, param.name); }, params, ctx, ',');\n };\n /**\n * @param {?} method\n * @return {?}\n *\n AbstractJsEmitterVisitor.prototype.getBuiltinMethodName =\n /**\n * @param {?} method\n * @return {?}\n *\n function (method) {\n var /** @type {?} */\n name;\n switch (method) {\n case BuiltinMethod.ConcatArray:\n name = 'concat';\n break;\n case BuiltinMethod.SubscribeObservable:\n name = 'subscribe';\n break;\n case BuiltinMethod.Bind:\n name = 'bind';\n break;\n default:\n throw new\n Error("Unknown builtin method: " + method);\n }\n return name;\n };\n return\n\n AbstractJsEmitterVisitor;\n})(AbstractEmitterVisitor);\n\n/**\n * @fileoverview added by tsickle\n * @suppress\n {checkTypes} checked by tsc\n */\n\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of\n this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n https://angular.io/license\n */\n\n /**\n * @param {?} sourceUrl\n * @param {?} ctx\n * @param {?} vars\n * @param {?} createSourceMap\n * @return {?}\n */\n\n function evalExpression(sourceUrl, ctx, vars,\n createSourceMap) {\n var /** @type {?} */ fnBody = ctx.toSource() + "\n\n/# sourceURL=" + sourceUrl;\n var\n /** @type {?} */ fnArgNames = [];\n var /** @type {?} */ fnArgValues = [];\n for (var /** @type {?} */\n argName in vars) {\n fnArgNames.push(argName);\n fnArgValues.push(vars[argName]);\n }\n if\n (createSourceMap) {\n // using `new Function(...)` generates a header, 1 line of no arguments, 2 lines\n otherwise\n // E.g. ``\n // function anonymous(a,b,c\n // **/) { ... }``\n // We don't want to hard\n code this fact, so we auto detect it via an empty function first.\n var /** @type {?} */ emptyFn = new\n (Function.bind.apply(Function, [void 0].concat(fnArgNames.concat('return null;')))).toString();\n var /**\n @type {?} */ headerLines = emptyFn.slice(0, emptyFn.indexOf('return null;').split('\n').length - 1);\n fnBody\n += "\n\n" + ctx.toSourceMapGenerator(sourceUrl, headerLines).toJsComment();\n }\n return new\n (Function.bind.apply(Function, [void 0].concat(fnArgNames.concat(fnBody)))).apply(void 0,\n fnArgValues);\n }\n\n /**\n * @param {?} sourceUrl\n * @param {?} statements\n * @param {?} reflector\n * @param {?} createSourceMaps\n * @return {?}\n */\n\n function jitStatements(sourceUrl, statements, reflector,\n createSourceMaps) {\n var /** @type {?} */ converter = new JitEmitterVisitor(reflector);\n var /** @type {?} */\n */\n ctx = EmitterVisitorContext.createRoot();\n converter.visitAllStatements(statements, ctx);\n converter.createReturnStmt(ctx);\n return evalExpression(sourceUrl, ctx, converter.getArgs(),\n createSourceMaps);\n }\n\n nvar JitEmitterVisitor = /** @class */ (function (_super) {\n __extends(JitEmitterVisitor,\n _super);\n function JitEmitterVisitor(reflector) {\n var _this = _super.call(this) || this;\n _this.reflector =\n reflector;\n _this._evalArgNames = [];\n _this._evalArgValues = [];\n _this._evalExportedVars = [];\n return _this;\n }\n /**\n * @param {?} ctx\n * @return {?}\n *\n JitEmitterVisitor.prototype.createReturnStmt = /**\n * @param {?} ctx\n * @return {?}\n *\n function\n (ctx) {\n var /** @type {?} */ stmt = new ReturnStatement(new\n LiteralMapExpr(this._evalExportedVars.map(function (resultVar) { return new LiteralMapEntry(resultVar,\n variable(resultVar), false); })));;\n stmt.visitStatement(this, ctx);\n };\n /**\n * @return {?}\n *\n
```

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JitEmitterVisitor.prototype.getArgs = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */\n result = {};\n for (var /** @type {?} */ i = 0; i < this._evalArgNames.length; i++) {\n result[this._evalArgNames[i]] = this._evalArgValues[i];\n }\n return result;\n }; /**\n * @param\n {?} ast\n * @param {?} ctx\n * @return {?}\n */\n JitEmitterVisitor.prototype.visitExternalExpr = /**\n * @param {?} ast\n * @param {?} ctx\n * @return {?}\n */\n function (ast, ctx) {\n var /** @type {?} */\n value = this.reflector.resolveExternalReference(ast.value);\n var /** @type {?} */ id =\n this._evalArgValues.indexOf(value);\n if (id === -1) {\n id = this._evalArgValues.length;\n this._evalArgValues.push(value);\n var /** @type {?} */ name_1 = identifierName({ reference: value }) ||\n 'val';\n this._evalArgNames.push('jit_' + name_1 + '_' + id);\n }\n ctx.print(ast,\n this._evalArgNames[id]);\n return null;\n }; /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n JitEmitterVisitor.prototype.visitDeclareVarStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, ctx) {\n if\n (stmt.hasModifier(StmtModifier.Exported)) {\n this._evalExportedVars.push(stmt.name);\n }\n return _super.prototype.visitDeclareVarStmt.call(this, stmt, ctx);\n }; /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n JitEmitterVisitor.prototype.visitDeclareFunctionStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, ctx) {\n if\n (stmt.hasModifier(StmtModifier.Exported)) {\n this._evalExportedVars.push(stmt.name);\n }\n return _super.prototype.visitDeclareFunctionStmt.call(this, stmt, ctx);\n }; /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n JitEmitterVisitor.prototype.visitDeclareClassStmt = /**\n * @param {?} stmt\n * @param {?} ctx\n * @return {?}\n */\n function (stmt, ctx) {\n if\n (stmt.hasModifier(StmtModifier.Exported)) {\n this._evalExportedVars.push(stmt.name);\n }\n return _super.prototype.visitDeclareClassStmt.call(this, stmt, ctx);\n }; return\n JitEmitterVisitor;\n})(AbstractJsEmitterVisitor);\n\n/**\n * @fileoverview added by tsickle\n * @suppress\n {checkTypes} checked by tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of\n this source code is governed by an MIT-style license that can be\n found in the LICENSE file at\n https://angular.io/license\n */\n /**\n * @record\n */\n /**\n * An internal module of the Angular compiler that\n begins with component types,\n extracts templates, and eventually produces a compiled version of the\n component\n ready for linking into an application.\n */\n /**\n * @security When compiling templates at runtime, you\n must ensure that the entire template comes\n from a trusted source. Attacker-controlled data introduced by a\n template could expose your\n application to XSS risks. For more detail, see the [Security\n Guide](http://g.co/ng/security).\n */\n var JitCompiler = /** @class */ (function () {\n function\n JitCompiler(_metadataResolver, _templateParser, _styleCompiler, _viewCompiler, _ngModuleCompiler,\n _summaryResolver, _reflector, _compilerConfig, _console, getExtraNgModuleProviders) {\n this._metadataResolver = _metadataResolver;\n this._templateParser = _templateParser;\n this._styleCompiler = _styleCompiler;\n this._viewCompiler = _viewCompiler;\n this._ngModuleCompiler\n = _ngModuleCompiler;\n this._summaryResolver = _summaryResolver;\n this._reflector = _reflector;\n this._compilerConfig = _compilerConfig;\n this._console = _console;\n this.getExtraNgModuleProviders =\n getExtraNgModuleProviders;\n this._compiledTemplateCache = new Map();\n this._compiledHostTemplateCache = new Map();\n this._compiledDirectiveWrapperCache = new Map();\n this._compiledNgModuleCache = new Map();\n this._sharedStylesheetCount = 0;\n this._addedAotSummaries = new Set();\n }\n /**\n * @param {?} moduleType\n * @return {?}\n */\n JitCompiler.prototype.compileModuleSync = /**\n * @param {?} moduleType\n * @return {?}\n */\n function (moduleType) {\n return SyncAsync.assertSync(this._compileModuleAndComponents(moduleType,\n true));\n }\n /**\n * @param {?} moduleType\n * @return {?}\n */\n JitCompiler.prototype.compileModuleAsync = /**\n * @param {?} moduleType\n * @return {?}\n */\n function (moduleType) {\n return Promise.resolve(this._compileModuleAndComponents(moduleType,\n false));\n }\n /**\n * @param {?} moduleType\n * @return {?}\n */\n JitCompiler.prototype.compileModuleAndAllComponentsSync = /**\n * @param {?} moduleType\n */
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@return {?} \n * \n function (moduleType) { \n return
SyncAsync.assertSync(this._compileModuleAndAllComponents(moduleType, true)); \n }; \n /** \n * @param
{?} moduleType \n * @return {?} \n * \n JitCompiler.prototype.compileModuleAndAllComponentsAsync =
/** \n * @param {?} moduleType \n * @return {?} \n * \n function (moduleType) { \n return
Promise.resolve(this._compileModuleAndAllComponents(moduleType, false)); \n }; \n /** \n * @param {?}
component \n * @return {?} \n * \n JitCompiler.prototype.getComponentFactory = /** \n * @param {?}
component \n * @return {?} \n * \n function (component) { \n var /** @type {?} */ summary =
this._metadataResolver.getDirectiveSummary(component); \n return /** @type {?} */
(summary.componentFactory); \n }; \n /** \n * @param {?} summaries \n * @return {?} \n * \n
JitCompiler.prototype.loadAotSummaries = /** \n * @param {?} summaries \n * @return {?} \n * \n
function (summaries) { \n this.clearCache(); \n this._addAotSummaries(summaries); \n }; \n /** \n *
@param {?} fn \n * @return {?} \n * \n JitCompiler.prototype._addAotSummaries = /** \n * @param {?}
fn \n * @return {?} \n * \n function (fn$$1) { \n if (this._addedAotSummaries.has(fn$$1)) { \n
return; \n } \n this._addedAotSummaries.add(fn$$1); \n var /** @type {?} */ summaries = fn$$1(); \n
for (var /** @type {?} */ i = 0; i < summaries.length; i++) { \n var /** @type {?} */ entry = summaries[i]; \n
if (typeof entry === 'function') { \n this._addAotSummaries(entry); \n } \n else { \n
var /** @type {?} */ summary = /** @type {?} */ (entry); \n this._summaryResolver.addSummary({
symbol: summary.type.reference, metadata: null, type: summary }); \n } \n }; \n /** \n * @param
{?} ref \n * @return {?} \n * \n JitCompiler.prototype.hasAotSummary = /** \n * @param {?} ref \n *
@return {?} \n * \n function (ref) { return !!this._summaryResolver.resolveSummary(ref); }; \n /** \n *
@param {?} ids \n * @return {?} \n * \n JitCompiler.prototype._filterJitIdentifiers = /** \n * @param {?}
ids \n * @return {?} \n * \n function (ids) { \n var _this = this; \n return ids.map(function (mod) {
return mod.reference; }).filter(function (ref) { return !_this.hasAotSummary(ref); }); \n }; \n /** \n * @param
{?} moduleType \n * @param {?} isSync \n * @return {?} \n * \n
JitCompiler.prototype._compileModuleAndComponents = /** \n * @param {?} moduleType \n * @param {?}
isSync \n * @return {?} \n * \n function (moduleType, isSync) { \n var _this = this; \n return
SyncAsync.then(this._loadModules(moduleType, isSync), function () { \n
_this._compileComponents(moduleType, null); \n return this._compileModule(moduleType); \n }); \n
}; \n /** \n * @param {?} moduleType \n * @param {?} isSync \n * @return {?} \n * \n
JitCompiler.prototype._compileModuleAndAllComponents = /** \n * @param {?} moduleType \n * @param
{?} isSync \n * @return {?} \n * \n function (moduleType, isSync) { \n var _this = this; \n return
SyncAsync.then(this._loadModules(moduleType, isSync), function () { \n var /** @type {?} */
componentFactories = []; \n _this._compileComponents(moduleType, componentFactories); \n return
{ \n ngModuleFactory: _this._compileModule(moduleType), \n componentFactories:
componentFactories \n }; \n }); \n }; \n /** \n * @param {?} mainModule \n * @param {?}
isSync \n * @return {?} \n * \n JitCompiler.prototype._loadModules = /** \n * @param {?} mainModule \n
* @param {?} isSync \n * @return {?} \n * \n function (mainModule, isSync) { \n var _this = this; \n
var /** @type {?} */ loading = []; \n var /** @type {?} */ mainNgModule = /** @type {?} */
((this._metadataResolver.getNgModuleMetadata(mainModule))); \n // Note: for runtime compilation, we want to
transitively compile all modules, \n // so we also need to load the declared directives / pipes for all nested
modules. \n this._filterJitIdentifiers(mainNgModule.transitiveModule.modules).forEach(function
(nestedNgModule) { \n // getNgModuleMetadata only returns null if the value passed in is not an NgModule \n
var /** @type {?} */ moduleMeta = /** @type {?} */
((_this._metadataResolver.getNgModuleMetadata(nestedNgModule)); \n
_this._filterJitIdentifiers(moduleMeta.declaredDirectives).forEach(function (ref) { \n var /** @type {?} */
promise = _this._metadataResolver.loadDirectiveMetadata(moduleMeta.type.reference, ref, isSync); \n if
(promise) { \n loading.push(promise); \n } \n }); \n
_this._filterJitIdentifiers(moduleMeta.declaredPipes) \n .forEach(function (ref) { return

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_this._metadataResolver.getOrLoadPipeMetadata(ref); });\n });\n return SyncAsync.all(loading);\n });\n /**\n * @param {?} moduleType\n * @return {?} */\n * ^\n JitCompiler.prototype._compileModule = /**\n * @param {?} moduleType\n * @return {?} */\n * ^\n function (moduleType) {\n var /** @type {?} */\n ngModuleFactory = /** @type {?} */ ((this._compiledNgModuleCache.get(moduleType));\n if\n (!ngModuleFactory) {\n var /** @type {?} */ moduleMeta = /** @type {?} */\n ((this._metadataResolver.getNgModuleMetadata(moduleType));\n // Always provide a bound Compiler\n var /** @type {?} */ extraProviders = this.getExtraNgModuleProviders(moduleMeta.type.reference);\n var /** @type {?} */ outputCtx = createOutputContext();\n var /** @type {?} */ compileResult =\n this._ngModuleCompiler.compile(outputCtx, moduleMeta, extraProviders);\n ngModuleFactory =\n this._interpretOrJit(ngModuleJitUrl(moduleMeta), outputCtx.statements)[compileResult.ngModuleFactoryVar];\n this._compiledNgModuleCache.set(moduleMeta.type.reference, ngModuleFactory);\n });\n return\n ngModuleFactory;\n });\n /**\n * @internal\n * ^\n * \\@\n * @param {?} mainModule\n * @param {?} allComponentFactories\n * @return {?} */\n * ^\n JitCompiler.prototype._compileComponents = /**\n * \\@\n * @param {?} mainModule\n * @param {?} allComponentFactories\n * @return {?} */\n * ^\n function (mainModule, allComponentFactories)\n {\n var _this = this;\n var /** @type {?} */ ngModule = /** @type {?} */\n ((this._metadataResolver.getNgModuleMetadata(mainModule));\n var /** @type {?} */ moduleByJitDirective\n = new Map();\n var /** @type {?} */ templates = new Set();\n var /** @type {?} */ transJitModules =\n this._filterJitIdentifiers(ngModule.transitiveModule.modules);\n transJitModules.forEach(function (localMod)\n {\n var /** @type {?} */ localModuleMeta = /** @type {?} */\n ((_this._metadataResolver.getNgModuleMetadata(localMod));\n _this._filterJitIdentifiers(localModuleMeta.declaredDirectives).forEach(function (dirRef) {\n moduleByJitDirective.set(dirRef, localModuleMeta);\n var /** @type {?} */ dirMeta =\n _this._metadataResolver.getDirectiveMetadata(dirRef);\n if (dirMeta.isComponent) {\n templates.add(_this._createCompiledTemplate(dirMeta, localModuleMeta));\n if\n (allComponentFactories) {\n var /** @type {?} */ template =\n _this._createCompiledHostTemplate(dirMeta.type.reference, localModuleMeta);\n templates.add(template);\n allComponentFactories.push(/** @type {?} */\n (dirMeta.componentFactory));\n });\n });\n });\n transJitModules.forEach(function (localMod) {\n var /** @type {?} */ localModuleMeta = /** @type {?} */ *\n ((_this._metadataResolver.getNgModuleMetadata(localMod));\n _this._filterJitIdentifiers(localModuleMeta.declaredDirectives).forEach(function (dirRef) {\n var /**\n @type {?} */ dirMeta = _this._metadataResolver.getDirectiveMetadata(dirRef);\n if\n (dirMeta.isComponent) {\n dirMeta.entryComponents.forEach(function (entryComponentType) {\n var /** @type {?} */ moduleMeta = /** @type {?} */ *\n ((moduleByJitDirective.get(entryComponentType.componentType));\n templates.add(_this._createCompiledHostTemplate(entryComponentType.componentType, moduleMeta));\n });\n });\n });\n localModuleMeta.entryComponents.forEach(function\n (entryComponentType) {\n if (!this.hasAotSummary(entryComponentType.componentType.reference))\n {\n var /** @type {?} */ moduleMeta = /** @type {?} */ *\n ((moduleByJitDirective.get(entryComponentType.componentType));\n templates.add(_this._createCompiledHostTemplate(entryComponentType.componentType, moduleMeta));\n }\n });\n });\n templates.forEach(function (template) { return this._compileTemplate(template);\n });\n });\n /**\n * @param {?} type\n * @return {?} */\n * ^\n JitCompiler.prototype.clearCacheFor =\n /**\n * @param {?} type\n * @return {?} */\n * ^\n function (type) {\n this._compiledNgModuleCache.delete(type);\n this._metadataResolver.clearCacheFor(type);\n this._compiledHostTemplateCache.delete(type);\n var /** @type {?} */ compiledTemplate =\n this._compiledTemplateCache.get(type);\n if (compiledTemplate) {\n
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this._compiledTemplateCache.delete(type);\n }\n };\n /**\n * @return {?}\n */\n JitCompiler.prototype.clearCache = /**\n * @return {?}\n */\n function () {\n // Note: don't clear the\n _addedAotSummaries, as they don't change!\n this._metadataResolver.clearCache();\n }\n this._compiledTemplateCache.clear();\n this._compiledHostTemplateCache.clear();\n this._compiledNgModuleCache.clear();\n };\n /**\n * @param {?} compType\n * @param {?} ngModule\n * @return {?}\n */\n JitCompiler.prototype._createCompiledHostTemplate = /**\n * @param {?} compType\n * @param {?} ngModule\n * @return {?}\n */\n function (compType, ngModule) {\n if (!ngModule) {\n throw new Error("\Component \" + stringify(compType) + \" is not part of any NgModule\n or the module has not been imported into your module.");\n }\n var /** @type {?} */ compiledTemplate =\n this._compiledHostTemplateCache.get(compType);\n if (!compiledTemplate) {\n var /** @type {?} */\n compMeta = this._metadataResolver.getDirectiveMetadata(compType);\n assertComponent(compMeta);\n var /** @type {?} */ hostMeta = this._metadataResolver.getHostComponentMetadata(compMeta, (** @type\n {?} */ (compMeta.componentFactory)).viewDefFactory);\n compiledTemplate =\n new\n CompiledTemplate(true, compMeta.type, hostMeta, ngModule, [compMeta.type]);\n }\n this._compiledHostTemplateCache.set(compType, compiledTemplate);\n }\n return compiledTemplate;\n};\n/**\n * @param {?} compMeta\n * @param {?} ngModule\n * @return {?}\n */\nJitCompiler.prototype._createCompiledTemplate = /**\n * @param {?} compMeta\n * @param {?} ngModule\n * @return {?}\n */\nfunction (compMeta, ngModule) {\n var /** @type {?} */\n compiledTemplate = this._compiledTemplateCache.get(compMeta.type.reference);\n if (!compiledTemplate)\n {\n assertComponent(compMeta);\n compiledTemplate = new CompiledTemplate(false,\n compMeta.type, compMeta, ngModule, ngModule.transitiveModule.directives);\n }\n this._compiledTemplateCache.set(compMeta.type.reference, compiledTemplate);\n }\n return\n compiledTemplate;\n};\n/**\n * @param {?} template\n * @return {?}\n */\nJitCompiler.prototype._compileTemplate = /**\n * @param {?} template\n * @return {?}\n */\nfunction\n(template) {\n var _this = this;\n if (template.isCompiled) {\n return;\n }\n var /** @type\n {?} */ compMeta = template.compMeta;\n var /** @type {?} */ externalStylesheetsByModuleUrl = new\n Map();\n var /** @type {?} */ outputContext = createOutputContext();\n var /** @type {?} */\n componentStylesheet = this._styleCompiler.compileComponent(outputContext, compMeta); /** @type {?} */\n ((compMeta.template)).externalStylesheets.forEach(function (stylesheetMeta) {\n var /** @type {?} */\n compiledStylesheet = _this._styleCompiler.compileStyles(createOutputContext(), compMeta, stylesheetMeta);\n externalStylesheetsByModuleUrl.set(** @type {?} */ ((stylesheetMeta.moduleUrl)), compiledStylesheet);\n });\n this._resolveStylesCompileResult(componentStylesheet, externalStylesheetsByModuleUrl);\n var /**\n @type {?} */ pipes = template.ngModule.transitiveModule.pipes.map(function (pipe) { return\n _this._metadataResolver.getPipeSummary(pipe.reference); });\n var _a = this._parseTemplate(compMeta,\n template.ngModule, template.directives), parsedTemplate = _a.template, usedPipes = _a.pipes;\n var /** @type\n {?} */ compileResult = this._viewCompiler.compileComponent(outputContext, compMeta, parsedTemplate,\n variable(componentStylesheet.stylesVar), usedPipes);\n var /** @type {?} */ evalResult =\n this._interpretOrJit(templateJitUrl(template.ngModule.type, template.compMeta), outputContext.statements);\n var /** @type {?} */ viewClass = evalResult[compileResult.viewClassVar];\n var /** @type {?} */\n rendererType = evalResult[compileResult.rendererTypeVar];\n template.compiled(viewClass, rendererType);\n};\n/**\n * @param {?} compMeta\n * @param {?} ngModule\n * @param {?} directiveIdentifiers\n * @return {?}\n */\nJitCompiler.prototype._parseTemplate = /**\n * @param {?} compMeta\n * @param {?} ngModule\n * @param {?} directiveIdentifiers\n * @return {?}\n */\nfunction (compMeta,\nngModule, directiveIdentifiers) {\n var _this = this;\n // Note: ! is ok here as components always have a\n template.\n var /** @type {?} */ preserveWhitespaces = /** @type {?} */\n ((compMeta.template)).preserveWhitespaces;\n var /** @type {?} */ directives =\n directiveIdentifiers.map(function (dir) { return _this._metadataResolver.getDirectiveSummary(dir.reference); });\n var /** @type {?} */ pipes = ngModule.transitiveModule.pipes.map(function (pipe) { return

```





```

'./path/to/here'), the resolved url is a combination of\n
 * `baseUri` and `url`,\n
 * - if `url` is absolute (it has a
scheme: 'http://', 'https://' or start with '/'), the `url` is\n
 * returned as is (ignoring the `baseUri`)\n
 * ^\n
/**\n
 * Resolves the `url` given the `baseUri`:\n
 * - when the `url` is null, the `baseUri` is returned,\n
 * - if `url` is
relative ('path/to/here', './path/to/here'), the resolved url is a combination of\n
 * `baseUri` and `url`,\n
 * - if `url`
is absolute (it has a scheme: 'http://', 'https://' or start with '/'), the `url` is\n
 * returned as is (ignoring the
`baseUri`)\n
 * @param {?} baseUri\n
 * @param {?} url\n
 * @return {?} \n
 * ^\n
UriResolverImpl.prototype.resolve = /**\n
 * Resolves the `url` given the `baseUri`:\n
 * - when the `url` is null,
the `baseUri` is returned,\n
 * - if `url` is relative ('path/to/here', './path/to/here'), the resolved url is a combination
of\n
 * `baseUri` and `url`,\n
 * - if `url` is absolute (it has a scheme: 'http://', 'https://' or start with '/'), the `url`
is\n
 * returned as is (ignoring the `baseUri`)\n
 * @param {?} baseUri\n
 * @param {?} url\n
 * @return
{?} \n
 * ^\n
function (baseUri, url) {\n
 var /** @type {?} */ resolvedUri = url;\n
 if (baseUri != null &&
baseUri.length > 0) {\n
 resolvedUri = _resolveUri(baseUri, resolvedUri);\n
 }\n
 var /** @type {?} */
resolvedParts = _split(resolvedUri);\n
 var /** @type {?} */ prefix = this._packagePrefix;\n
 if (prefix != null
&& resolvedParts != null &&\n
 resolvedParts[_ComponentIndex.Scheme] == 'package') {\n
 var /**
@type {?} */ path = resolvedParts[_ComponentIndex.Path];\n
 prefix = prefix.replace(/\\+$/, "");\n
 path
= path.replace(/^\+/, "");\n
 return prefix + "\\^" + path;\n
 }\n
 return resolvedUri;\n
};\n
return
UriResolverImpl;\n
})();\n
/**\n
 * Extract the scheme of a URL.\n
 * @param {?} url\n
 * @return {?} \n
 * ^\n
function
getUrlScheme(url) {\n
 var /** @type {?} */ match = _split(url);\n
 return (match &&
match[_ComponentIndex.Scheme]) || "";\n
}\n
/**\n
 * Builds a URI string from already-encoded parts.\n
 * \n
 * No
encoding is performed. Any component may be omitted as either null or\n
 * undefined.\n
 * \n
 * @param {?=}
opt_scheme The scheme such as 'http'.\n
 * @param {?=} opt_userInfo The user name before the "\\@".\n
 * @param
{?=} opt_domain The domain such as 'www.google.com', already\n
 * URI-encoded.\n
 * @param {?=} opt_port
The port number.\n
 * @param {?=} opt_path The path, already URI-encoded. If it is not\n
 * empty, it must begin
with a slash.\n
 * @param {?=} opt_queryData The URI-encoded query data.\n
 * @param {?=} opt_fragment The
URI-encoded fragment identifier.\n
 * @return {?} The fully combined URI.\n
 * ^\n
function
_buildFromEncodedParts(opt_scheme, opt_userInfo, opt_domain, opt_port, opt_path, opt_queryData, opt_fragment)
{\n
 var /** @type {?} */ out = [];\n
 if (opt_scheme != null) {\n
 out.push(opt_scheme + ':');\n
 }\n
 if
(opt_domain != null) {\n
 out.push("//");\n
 if (opt_userInfo != null) {\n
 out.push(opt_userInfo + '@');\n
 }\n
 out.push(opt_domain);\n
 if (opt_port != null) {\n
 out.push(': + opt_port);\n
 }\n
 }\n
 if
(opt_path != null) {\n
 out.push(opt_path);\n
 }\n
 if (opt_queryData != null) {\n
 out.push('? +
opt_queryData);\n
 }\n
 if (opt_fragment != null) {\n
 out.push('# + opt_fragment);\n
 }\n
 return
out.join("");\n
}\n
/**\n
 * A regular expression for breaking a URI into its component parts.\n
 * \n
 * {\\@link
http://www.gbiv.com/protocols/uri/rfc/rfc3986.html#RFC2234} says\n
 * As the "first-match-wins" algorithm is
identical to the "greedy"\n
 * disambiguation method used by POSIX regular expressions, it is natural and\n
 *
commonplace to use a regular expression for parsing the potential five\n
 * components of a URI reference.\n
 * \n
 * The following line is the regular expression for breaking-down a\n
 * well-formed URI reference into its
components.\n
 * \n
 * <pre>\n
 * ^(([^:/?#]+):)?(//([^/?#]*))?(\\?([^#]*)?)(#(?:.)*?)?\n
 * 12 3 4 5
6 7 8 9\n
 * </pre>\n
 * \n
 * The numbers in the second line above are only to assist readability; they\n
 * indicate
the reference points for each subexpression (i.e., each paired\n
 * parenthesis). We refer to the value matched for
subexpression <n> as $<n>.\n
 * For example, matching the above expression to\n
 * <pre>\n
 * http://www.ics.uci.edu/pub/ietf/uri/#Related\n
 * </pre>\n
 * results in the following subexpression matches:\n
 *
<pre>\n
 * $1 = http:\n
 * $2 = http\n
 * $3 = //www.ics.uci.edu\n
 * $4 = www.ics.uci.edu\n
 * $5 =
/pub/ietf/uri\n
 * $6 = <undefined>\n
 * $7 = <undefined>\n
 * $8 = #Related\n
 * $9 = Related\n
 * </pre>\n
 *
where <undefined> indicates that the component is not present, as is the\n
 * case for the query component in the
above example. Therefore, we can\n
 * determine the value of the five components as\n
 * <pre>\n
 * scheme =
$2\n
 * authority = $4\n
 * path = $5\n
 * query = $7\n
 * fragment = $9\n
 * </pre>\n
 * \n
 * The regular
expression has been modified slightly to expose the\n
 * userInfo, domain, and port separately from the authority.\n
 * \n
 * The modified version yields\n
 * <pre>\n
 * $1 = http
scheme\n
 * $2 = <undefined> userInfo -\n
 *

```

```

$3 = www.ics.uci.edu domain | authority\n * $4 = <undefined> port -/\n * $5 = /pub/ietf/uri/ path\n *
$6 = <undefined> query without ?\n * $7 = Related fragment without #\n * </pre>\n * \\@internal\n
*\nvar _splitRe = new RegExp('^ +\n '(?: +\n '([^\?#.]+' // scheme - ignore special characters\n ':)?' +\n
'(?:// +\n '(?:([^\?#]*)@)?' // userInfo\n '([\w\|\|d\|\|\|u0100-\|\|\uffff.%]*)' // domain - restrict to letters,\n
'(?::([0-9]+))?' // port\n ')?' +\n '([^\?#]+)?' // path\n '(?:\|\|\|?([^\#]*)?)' // query\n '(?:#(.*))?' //
fragment\n '$');\n** @enum {number} *\nvar _ComponentIndex = {\n Scheme: 1,\n UserInfo: 2,\n
Domain: 3,\n Port: 4,\n Path: 5,\n QueryData: 6,\n Fragment:
7,\n};\n_ComponentIndex[_ComponentIndex.Scheme] =
\'Scheme\';\n_ComponentIndex[_ComponentIndex.UserInfo] =
\'UserInfo\';\n_ComponentIndex[_ComponentIndex.Domain] =
\'Domain\';\n_ComponentIndex[_ComponentIndex.Port] = \'Port\';\n_ComponentIndex[_ComponentIndex.Path] =
\'Path\';\n_ComponentIndex[_ComponentIndex.QueryData] =
\'QueryData\';\n_ComponentIndex[_ComponentIndex.Fragment] = \'Fragment\';\n**\n * Splits a URI into its
component parts.\n *\n * Each component can be accessed via the component indices; for example:\n * <pre>\n *
goog.uri.utils.split(someStr)[goog.uri.utils.ComponentIndex.QUERY_DATA];\n * </pre>\n *\n * @param {?} uri
The URI string to examine.\n *\n * @return {?} Each component still URI-encoded.\n * Each component that is
present will contain the encoded value, whereas\n * components that are not present will be undefined or empty,
depending\n * on the browser's regular expression implementation. Never null, since\n * arbitrary strings may
still look like path names.\n *\nfunction _split(uri) {\n return /** @type {?} */ ((uri.match(_splitRe)));\n}\n**\n
 * Removes dot segments in given path component, as described in\n * RFC 3986, section 5.2.4.\n *\n * @param {?}
path A non-empty path component.\n * @return {?} Path component with removed dot segments.\n *\nfunction
_removeDotSegments(path) {\n if (path == '/')\n return '/';\n var /** @type {?} */ leadingSlash = path[0] ==
'/' ? '/' : '';\n var /** @type {?} */ trailingSlash = path[path.length - 1] === '/' ? '/' : '';\n var /** @type {?} */
segments = path.split('/');\n var /** @type {?} */ out = [];\n var /** @type {?} */ up = 0;\n for (var /** @type
{?} */ pos = 0; pos < segments.length; pos++) {\n var /** @type {?} */ segment = segments[pos];\n switch
(segment) {\n case '':\n case '.':\n break;\n case '..':\n if (out.length > 0) {\n
out.pop();\n }\n else {\n up++;;\n }\n break;\n
default:\n out.push(segment);\n }\n }\n if (leadingSlash == '') {\n while (up-- > 0) {\n
out.unshift('.');\n }\n if (out.length === 0)\n out.push('.');\n }\n return leadingSlash + out.join('/')
+ trailingSlash;\n}\n**\n
 * Takes an array of the parts from split and canonicalizes the path part\n * and then joins
all the parts.\n * @param {?} parts\n * @return {?}\n *\nfunction _joinAndCanonicalizePath(parts) {\n var /**
@type {?} */ path = parts[_ComponentIndex.Path];\n path = path == null ? '' : _removeDotSegments(path);\n
parts[_ComponentIndex.Path] = path;\n return _buildFromEncodedParts(parts[_ComponentIndex.Scheme],
parts[_ComponentIndex.UserInfo], parts[_ComponentIndex.Domain], parts[_ComponentIndex.Port], path,
parts[_ComponentIndex.QueryData], parts[_ComponentIndex.Fragment]);\n}\n**\n
 * Resolves a URL.\n *\n * @param {?} base The URL acting as the base URL.\n *\n * @param {?} url\n *\nfunction
_resolveUrl(base, url) {\n var /** @type {?} */ parts = _split(encodeURI(url));\n var /** @type {?} */ baseParts
= _split(base);\n if (parts[_ComponentIndex.Scheme] != null) {\n return _joinAndCanonicalizePath(parts);\n
}\n else {\n parts[_ComponentIndex.Scheme] = baseParts[_ComponentIndex.Scheme];\n }\n for (var /** @type
{?} */ i = _ComponentIndex.Scheme; i <= _ComponentIndex.Port; i++) {\n if (parts[i] == null) {\n
parts[i] = baseParts[i];\n }\n }\n if (parts[_ComponentIndex.Path][0] == '/') {\n return
_joinAndCanonicalizePath(parts);\n }\n var /** @type {?} */ path = baseParts[_ComponentIndex.Path];\n if
(path == null)\n path = '';\n var /** @type {?} */ index = path.lastIndexOf('/');\n path = path.substring(0,
index + 1) + parts[_ComponentIndex.Path];\n parts[_ComponentIndex.Path] = path;\n return
_joinAndCanonicalizePath(parts);\n}\n**\n
 * @fileoverview added by tsickle\n * @suppress {checkTypes}
checked by tsc\n *\n**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source
code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n
\n\n * An interface for retrieving documents by URL that the compiler uses\n * to load templates.\n *\nvar

```

```

ResourceLoader = /** @class */ (function () {
 function ResourceLoader() {}
 /**
 * @param {?} url
 * @return {?}
 */
 ResourceLoader.prototype.get = /**
 * @param {?} url
 * @return {?}
 */
 function (url) {
 return "";
 };
 return ResourceLoader;
})();

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 */

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 * found in the LICENSE file at
 * https://angular.io/license
 */

/**
 * The host of the Extractor disconnects the implementation from TypeScript /
 * other language
 * services and from underlying file systems.
 */

var Extractor = /** @class */
(function () {
 function Extractor(host, staticSymbolResolver, messageBundle, metadataResolver) {
 this.host = host;
 this.staticSymbolResolver = staticSymbolResolver;
 this.messageBundle = messageBundle;
 this.metadataResolver = metadataResolver;
 }
 /**
 * @param {?} rootFiles
 * @return {?}
 */
 Extractor.prototype.extract = /**
 * @param {?} rootFiles
 * @return {?}
 */
 function (rootFiles) {
 var _this = this;
 var _a = analyzeAndValidateNgModules(rootFiles, this.host, this.staticSymbolResolver, this.metadataResolver), files = _a.files, ngModules = _a.ngModules;
 return Promise.all(ngModules.map(function (ngModule) {
 return _this.metadataResolver.loadNgModuleDirectiveAndPipeMetadata(ngModule.type.reference, false);
 })).then(function () {
 var /** @type {?} */ errors = [];
 files.forEach(function (file) {
 var /** @type {?} */ compMetas = [];
 file.directives.forEach(function (directiveType) {
 var /** @type {?} */ dirMeta = _this.metadataResolver.getDirectiveMetadata(directiveType);
 if (dirMeta && dirMeta.isComponent) {
 compMetas.push(dirMeta);
 }
 });
 compMetas.forEach(function (compMeta) {
 var /** @type {?} */ html = /** @type {?} */ ((/** @type {?} */ ((compMeta.template)).template));
 var /** @type {?} */ interpolationConfig = InterpolationConfig.fromArray(/** @type {?} */ ((compMeta.template)).interpolation);
 errors.push.apply(errors, /** @type {?} */ (_this.messageBundle.updateFromTemplate(html, file.fileName, interpolationConfig)));
 });
 if (errors.length) {
 throw new Error(errors.map(function (e) {
 return e.toString();
 }).join('\n'));
 }
 return _this.messageBundle;
 });
 });
 };
 /**
 * @param {?} host
 * @param {?} locale
 * @return {?}
 */
 Extractor.create = /**
 * @param {?} host
 * @param {?} locale
 * @return {?}
 */
 function (host, locale) {
 var /** @type {?} */ htmlParser = new HtmlParser();
 var /** @type {?} */ urlResolver = createAotUrlResolver(host);
 var /** @type {?} */ symbolCache = new StaticSymbolCache();
 var /** @type {?} */ summaryResolver = new AotSummaryResolver(host, symbolCache);
 var /** @type {?} */ staticSymbolResolver = new StaticSymbolResolver(host, symbolCache, summaryResolver);
 var /** @type {?} */ staticReflector = new StaticReflector(summaryResolver, staticSymbolResolver);
 var /** @type {?} */ config = new CompilerConfig({
 defaultEncapsulation: ViewEncapsulation.Emulated,
 useJit: false
 });
 var /** @type {?} */ normalizer = new DirectiveNormalizer({
 get: function (url) {
 return host.loadResource(url);
 }
 }, urlResolver, htmlParser, config);
 var /** @type {?} */ elementSchemaRegistry = new DomElementSchemaRegistry();
 var /** @type {?} */ resolver = new CompileMetadataResolver(config, htmlParser, new NgModuleResolver(staticReflector), new DirectiveResolver(staticReflector), new PipeResolver(staticReflector), summaryResolver, elementSchemaRegistry, normalizer, console, symbolCache, staticReflector);
 // TODO(vicb): implicit tags & attributes
 var /** @type {?} */ messageBundle = new MessageBundle(htmlParser, [], {}, locale);
 var /** @type {?} */ extractor = new Extractor(host, staticSymbolResolver, messageBundle, resolver);
 return {
 extractor: extractor,
 staticReflector: staticReflector
 };
 };
 return Extractor;
})();

/**
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 */

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 */

// This file only reexports content of the `src` folder. Keep it that way.
/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked

```





```

ParamDecorator;\n /**\n * @param {?} cls\n * @param {?} unusedKey\n * @param {?}
index\n * @return {?})\n *^\n function ParamDecorator(cls, unusedKey, index) {\n // Use of
Object.defineProperty is important since it creates non-enumerable property which\n // prevents the property
is copied during subclassing.\n var /** @type {?} */ parameters = cls.hasOwnProperty(PARAMETERS) ?\n (/** @type {?} */ (cls))[PARAMETERS] :\n Object.defineProperty(cls, PARAMETERS, { value:
[] })[PARAMETERS];\n // there might be gaps if some in between parameters do not have annotations.\n
// we pad with nulls.\n while (parameters.length <= index) {\n parameters.push(null);\n }\n
(parameters[index] = parameters[index] || []).push(annotationInstance);\n return cls;\n }\n var
_a;\n }\n if (parentClass) {\n ParamDecoratorFactory.prototype = Object.create(parentClass.prototype);\n
}\n ParamDecoratorFactory.prototype.ngMetadataName = name;\n (/** @type {?} */
(ParamDecoratorFactory)).annotationCls = ParamDecoratorFactory;\n return ParamDecoratorFactory;\n }\n\n/**\n *
@param {?} name\n * @param {?=} props\n * @param {?=} parentClass\n * @return {?}\n *^\nfunction
makePropDecorator(name, props, parentClass) {\n var /** @type {?} */ metaCtor = makeMetadataCtor(props);\n
/**\n * @param {...?} args\n * @return {?}\n *^\n function PropDecoratorFactory() {\n var args =
[];\n for (var _i = 0; _i < arguments.length; _i++) {\n args[_i] = arguments[_i];\n }\n if (this
instanceof PropDecoratorFactory) {\n metaCtor.apply(this, args);\n return this;\n }\n var /**
@type {?} */ decoratorInstance = new ((_a = (/** @type {?} */ (PropDecoratorFactory))).bind.apply(_a, [void
0].concat(args)));\n return function PropDecorator(target, name) {\n var /** @type {?} */ constructor =
target.constructor;\n // Use of Object.defineProperty is important since it creates non-enumerable property
which\n // prevents the property is copied during subclassing.\n var /** @type {?} */ meta =
constructor.hasOwnProperty(PROP_METADATA) ?\n (/** @type {?} */
(constructor))[PROP_METADATA] :\n Object.defineProperty(constructor, PROP_METADATA, { value:
{ } })[PROP_METADATA];\n meta[name] = meta.hasOwnProperty(name) && meta[name] || [];\n
meta[name].unshift(decoratorInstance);\n }; \n var _a;\n }\n if (parentClass) {\n
PropDecoratorFactory.prototype = Object.create(parentClass.prototype);\n }\n
PropDecoratorFactory.prototype.ngMetadataName = name;\n (/** @type {?} */
(PropDecoratorFactory)).annotationCls = PropDecoratorFactory;\n return PropDecoratorFactory;\n }\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *^\n\n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n *^\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n *^\n\n * This token can be used to create a virtual
provider that will populate the\n * `entryComponents` fields of components and ng modules based on its
`useValue`.\n * All components that are referenced in the `useValue` value (either directly\n * or in a nested array or
map) will be added to the `entryComponents` property.\n *^\n * ### Example\n * The following example shows how
the router can populate the `entryComponents`\n * field of an NgModule based on the router configuration which
refers\n * to components.\n *^\n * ```typescript\n * // helper function inside the router\n * function
provideRoutes(routes) {\n * return [\n * {provide: ROUTES, useValue: routes},\n * {provide:
ANALYZE_FOR_ENTRY_COMPONENTS, useValue: routes, multi: true}\n *];\n * }\n * // user code\n * let
routes = [\n * {path: '/root', component: RootComp},\n * {path: '/teams', component: TeamsComp}\n *];\n *^\n *
@NgModule({\n * providers: [provideRoutes(routes)]\n * })\n * class ModuleWithRoutes {\n * //^\n *^\n *
@@experimental\n *^\n * nvar ANALYZE_FOR_ENTRY_COMPONENTS = new
InjectionToken('AnalyzeForEntryComponents');\n *^\n * Type of the Attribute decorator / constructor function.\n *
^\n * @@stable\n * @record\n *^\n * Attribute decorator and metadata.\n *^\n * @@stable\n *
@@Annotation\n *^\n * nvar Attribute = makeParamDecorator('Attribute', function (attributeName) { return ({
attributeName: attributeName }); });\n *^\n * Base class for query metadata.\n *^\n * See {@@link
ContentChildren}, {@@link ContentChild}, {@@link ViewChildren}, {@@link ViewChild} for\n * more
information.\n *^\n * @@stable\n * @abstract\n *^\n * nvar Query = /** @class */ (function () {\n function Query() {\n
}\n return Query;\n }());\n *^\n * Type of the ContentChildren decorator / constructor function.\n *^\n * See
{@@link ContentChildren}.\n *^\n * @@stable\n * @record\n *^\n * ContentChildren decorator and

```









```

retrieves the reference value from a forwardRef.\n *\n * Acts as the identity function when given a non-forward-ref
value.\n *\n * ### Example ([live demo](http://plnkr.co/edit/GU72mJrk1fiodChcmiDR?p=preview))\n *\n * {\@\example core/di/ts/forward_ref/forward_ref_spec.ts region='resolve_forward_ref'}\n *\n * See: {\@\link
forwardRef}\n *\n * {\@\experimental\n * @param {?} type\n * @return {?}\n * ^\nfunction resolveForwardRef(type)
{\n if (typeof type === 'function' && type.hasOwnProperty('__forward_ref__') &&\n type.__forward_ref__
=== forwardRef) {\n return (** @type {?} / (type));\n }\n else {\n return type;\n }\n}\n\n/**\n *
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Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n * ^\nvar SOURCE = '__source';\nvar
_THROW_IF_NOT_FOUND = new Object();\nvar THROW_IF_NOT_FOUND =
_THROW_IF_NOT_FOUND;\nvar _NullInjector = /** @class */ (function () {\n function _NullInjector() {\n
}\n /**\n * @param {?} token\n * @param {?=} notFoundValue\n * @return {?}\n * ^\n
_NullInjector.prototype.get = /**\n * @param {?} token\n * @param {?=} notFoundValue\n * @return
{?}\n * ^\n function (token, notFoundValue) {\n if (notFoundValue === void 0) { notFoundValue =
_THROW_IF_NOT_FOUND; }\n if (notFoundValue === _THROW_IF_NOT_FOUND) {\n throw new
Error("NullInjectorError: No provider for '" + stringify(token) + "'!");\n }\n return notFoundValue;\n
};\n return _NullInjector;\n})();\n\n/**\n * {\@\whatItDoes Injector interface\n * {\@\howToUse\n * ```\n * const
injector: Injector = ...;\n * injector.get(...);\n * ```\n *\n * {\@\description\n * For more details, see the {\@\linkDocs
guide/dependency-injection "Dependency Injection Guide"}.\n *\n * ### Example\n *\n * {\@\example
core/di/ts/injector_spec.ts region='Injector'}\n *\n * `Injector` returns itself when given `Injector` as a token:\n *
{\@\example core/di/ts/injector_spec.ts region='injectInjector'}\n *\n * {\@\stable\n * @abstract\n * ^\nvar Injector =
/** @class */ (function () {\n function Injector() {\n }\n /**\n * Create a new Injector which is configure
using `StaticProvider`s.\n *\n * ### Example\n *\n * {\@\example core/di/ts/provider_spec.ts
region='ConstructorProvider'}\n * ^\n /**\n * Create a new Injector which is configure using
`StaticProvider`s.\n *\n * ### Example\n *\n * {\@\example core/di/ts/provider_spec.ts
region='ConstructorProvider'}\n * @param {?} options\n * @param {?=} parent\n * @return {?}\n * ^\n
Injector.create = /**\n * Create a new Injector which is configure using `StaticProvider`s.\n *\n * ###
Example\n *\n * {\@\example core/di/ts/provider_spec.ts region='ConstructorProvider'}\n * @param {?}
options\n * @param {?=} parent\n * @return {?}\n * ^\n function (options, parent) {\n if
(Array.isArray(options)) {\n return new StaticInjector(options, parent);\n }\n else {\n return
new StaticInjector(options.providers, options.parent, options.name || null);\n }\n }\n });\n Injector.THROW_IF_NOT_FOUND = _THROW_IF_NOT_FOUND;\n Injector.NULL = new _NullInjector();\n return Injector;\n})();\n \nvar IDENT = function (value) {\n return value;\n};\nvar EMPTY = /** @type {?} */
([]);\nvar CIRCULAR = IDENT;\nvar MULTI_PROVIDER_FN = function () {\n return
Array.prototype.slice.call(arguments);\n};\nvar GET_PROPERTY_NAME = /** @type {?} */ ({});\nvar 2 =
GET_PROPERTY_NAME;\nvar USE_VALUE = getClosureSafeProperty({ provide: String, useValue: 2 });\nvar
NG_TOKEN_PATH = 'ngTokenPath';\nvar NG_TEMP_TOKEN_PATH = 'ngTempTokenPath';\nvar
NULL_INJECTOR = Injector.NULL;\nvar NEW_LINE = ^\n/gm;\nvar NO_NEW_LINE = '';\nvar StaticInjector =
/** @class */ (function () {\n function StaticInjector(providers, parent, source) {\n if (parent === void 0) {\n
parent = NULL_INJECTOR; }\n if (source === void 0) { source = null; }\n this.parent = parent;\n this.source = source;\n var /** @type {?} */ records = this._records = new Map();\n records.set(Injector,
/** @type {?} */ ({ token: Injector, fn: IDENT, deps: EMPTY, value: this, useNew: false }));\n recursivelyProcessProviders(records, providers);\n }\n /**\n * @param {?} token\n * @param {?=}
notFoundValue\n * @return {?}\n * ^\n StaticInjector.prototype.get = /**\n * @param {?} token\n *
@param {?=} notFoundValue\n * @return {?}\n * ^\n function (token, notFoundValue) {\n var /**
@type {?} */ record = this._records.get(token);\n try {\n return tryResolveToken(token, record,
this._records, this.parent, notFoundValue);\n }\n catch (** @type {?} / e) {\n var /** @type {?} */
tokenPath = e[NG_TEMP_TOKEN_PATH];\n if (token[SOURCE]) {\n

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tokenPath.unshift(token[SOURCE]);\n }\n e.message = formatError('\n' + e.message, tokenPath,
this.source);\n e[NG_TOKEN_PATH] = tokenPath;\n e[NG_TEMP_TOKEN_PATH] = null;\n throw e;\n }\n };\n /**\n * @return {?}\n */\n StaticInjector.prototype.toString = /**\n * @return
{?}\n */\n function () {\n var /** @type {?} */ tokens = /** @type {?} */ ([]), /** @type {?} */ records =
this._records;\n records.forEach(function (v, token) { return tokens.push(stringify(token)); });\n return
\"StaticInjector[\" + tokens.join(', ') + \"]\";\n };\n return StaticInjector;\n})();\n\n/**\n * @param {?} provider\n * @return {?}\n */\nfunction resolveProvider(provider) {\n var /** @type {?} */ deps = computeDeps(provider);\n var /** @type {?} */ fn = IDENT;\n var /** @type {?} */ value = EMPTY;\n var /** @type {?} */ useNew =
false;\n var /** @type {?} */ provide = resolveForwardRef(provider.provide);\n if (USE_VALUE in provider)
{\n // We need to use USE_VALUE in provider since provider.useValue could be defined as undefined.\n value = /** @type {?} */ (provider).useValue;\n } else if ((/** @type {?} */ (provider)).useFactory) {\n
fn = /** @type {?} */ (provider).useFactory;\n } else if ((/** @type {?} */ (provider)).useExisting) {\n
// Just use IDENT\n } else if ((/** @type {?} */ (provider)).useClass) {\n useNew = true;\n fn =
resolveForwardRef((/** @type {?} */ (provider)).useClass);\n } else if (typeof provide == 'function') {\n
useNew = true;\n fn = provide;\n } else {\n throw staticError('StaticProvider does not have
[useValue|useFactory|useExisting|useClass] or [provide] is not newable', provider);\n }\n return { deps: deps, fn:
fn, useNew: useNew, value: value };\n}\n\n/**\n * @param {?} token\n * @return {?}\n */\nfunction
multiProviderMixError(token) {\n return staticError('Cannot mix multi providers and regular providers',
token);\n}\n\n/**\n * @param {?} records\n * @param {?} provider\n * @return {?}\n */\nfunction
recursivelyProcessProviders(records, provider) {\n if (provider) {\n provider =
resolveForwardRef(provider);\n if (provider instanceof Array) {\n // if we have an array recurse into the
array\n for (var /** @type {?} */ i = 0; i < provider.length; i++) {\n
recursivelyProcessProviders(records, provider[i]);\n }\n } else if (typeof provider === 'function')
{\n // Functions were supported in ReflectiveInjector, but are not here. For safety give useful\n // error
messages\n throw staticError('Function/Class not supported', provider);\n } else if (provider &&
typeof provider === 'object' && provider.provide) {\n // At this point we have what looks like a provider:\n
{provide: ?, ...}\n var /** @type {?} */ token = resolveForwardRef(provider.provide);\n var /**
@type {?} */ resolvedProvider = resolveProvider(provider);\n if (provider.multi === true) {\n //
This is a multi provider.\n var /** @type {?} */ multiProvider = records.get(token);\n if
(multiProvider) {\n if (multiProvider.fn !== MULTI_PROVIDER_FN) {\n throw
multiProviderMixError(token);\n }\n } else {\n // Create a placeholder
factory which will look up the constituents of the multi provider.\n records.set(token, multiProvider =
/** @type {?} */ ({\n token: provider.provide,\n deps: [],\n useNew:
false,\n fn: MULTI_PROVIDER_FN,\n value: EMPTY\n }));\n }\n // Treat the provider as the token.\n token = provider;\n multiProvider.deps.push({\n
token: token, options: 6 /* Default */ });\n var /** @type {?} */ record = records.get(token);\n if
(record && record.fn == MULTI_PROVIDER_FN) {\n throw multiProviderMixError(token);\n }\n records.set(token, resolvedProvider);\n } else {\n throw staticError('Unexpected
provider', provider);\n }\n }\n }\n}\n\n/**\n * @param {?} token\n * @param {?} record\n * @param {?} records\n * @param {?} parent\n * @param {?} notFoundValue\n * @return {?}\n */\nfunction tryResolveToken(token,
record, records, parent, notFoundValue) {\n try {\n return resolveToken(token, record, records, parent,
notFoundValue);\n } catch (** @type {?} */ e) {\n // ensure that 'e' is of type Error.\n if (!(e
instanceof Error)) {\n e = new Error(e);\n }\n var /** @type {?} */ path =
e[NG_TEMP_TOKEN_PATH] = e[NG_TEMP_TOKEN_PATH] || [];\n path.unshift(token);\n if (record
&& record.value == CIRCULAR) {\n // Reset the Circular flag.\n record.value = EMPTY;\n }\n throw e;\n }\n}\n\n/**\n * @param {?} token\n * @param {?} record\n * @param {?} records\n * @param {?} parent\n * @param {?} notFoundValue\n * @return {?}\n */\nfunction resolveToken(token, record, records, parent,
notFoundValue) {\n var /** @type {?} */ value;\n if (record) {\n // If we don't have a record, this implies

```





```

originalError) {\n var /** @type {?} */ keys = [key];\n var /** @type {?} */ errMsg =
constructResolvingMessage(keys);\n var /** @type {?} */ error = /** @type {?} */ ((originalError ?
wrappedError(errMsg, originalError) : Error(errMsg));\n error.addKey = addKey;\n error.keys = keys;\n
error.injectors = [injector];\n error.constructResolvingMessage = constructResolvingMessage;\n (/** @type {?}
*/ (error))[ERROR_ORIGINAL_ERROR] = originalError;\n return error;\n}\n\n/**\n * @this {?} \n * @param {?}
injector\n * @param {?} key\n * @return {?} \n * \nfunction addKey(injector, key) {\n
this.injectors.push(injector);\n this.keys.push(key);\n // Note: This updated message won't be reflected in the
.stack` property\n this.message = this.constructResolvingMessage(this.keys);\n}\n\n/**\n * Thrown when trying to
retrieve a dependency by key from {@link Injector}, but the\n * {@link Injector} does not have a {@link
Provider} for the given key.\n * \n * ### Example ([live
demo](http://plnkr.co/edit/vq8D3FRB9aGbnWJqtEPE?p=preview))\n * \n * ```typescript\n * class A {\n *
constructor(b:B) {\n * }\n * }\n * \n * expect(() => Injector.resolveAndCreate([A])).toThrowError();\n * \n * \n * @param
{?} injector\n * @param {?} key\n * @return {?} \n * \nfunction noProviderError(injector, key) {\n return
injectionError(injector, key, function (keys) {\n var /** @type {?} */ first = stringify(keys[0].token);\n
return `No provider for ` + first + `!` + constructResolvingPath(keys);\n });\n}\n\n/**\n * Thrown when
dependencies form a cycle.\n * \n * ### Example ([live
demo](http://plnkr.co/edit/wYQdNos0Tzql3ei1EV9j?p=info))\n * \n * ```typescript\n * var injector =
Injector.resolveAndCreate([\n * {provide: `one`, useFactory: (two) => `two`, deps: [[new Inject(`two`)]],\n *
 {provide: `two`, useFactory: (one) => `one`, deps: [[new Inject(`one`)]]\n *]);\n * \n * expect(() =>
injector.get(`one`)).toThrowError();\n * \n * \n * Retrieving `A` or `B` throws a `CyclicDependencyError` as the
graph above cannot be constructed.\n * \n * @param {?} injector\n * @param {?} key\n * @return {?} \n * \nfunction
cyclicDependencyError(injector, key) {\n return injectionError(injector, key, function (keys) {\n return
`Cannot instantiate cyclic dependency!` + constructResolvingPath(keys);\n });\n}\n\n/**\n * Thrown when a
constructing type returns with an Error.\n * \n * The `InstantiationError` class contains the original error plus the
dependency graph which caused\n * this object to be instantiated.\n * \n * ### Example ([live
demo](http://plnkr.co/edit/7aWYdcqTQsP0eNqEdUAF?p=preview))\n * \n * ```typescript\n * class A {\n *
constructor() {\n * throw new Error('message');\n * }\n * }\n * \n * var injector =
Injector.resolveAndCreate([A]);\n * \n * try {\n * injector.get(A);\n * } catch (e) {\n * expect(e instanceof
InstantiationError).toBe(true);\n * expect(e.originalException.message).toEqual(`message`);\n * expect(e.originalStack).toBeDefined();\n * }\n * \n * \n * @param {?} injector\n * @param {?} originalException\n *
@param {?} originalStack\n * @param {?} key\n * @return {?} \n * \nfunction instantiationError(injector,
originalException, originalStack, key) {\n return injectionError(injector, key, function (keys) {\n var /**
@type {?} */ first = stringify(keys[0].token);\n return originalException.message + `: Error during instantiation
of ` + first + `!` + constructResolvingPath(keys) + `.`;\n }, originalException);\n}\n\n/**\n * Thrown when an
object other than {@link Provider} (or `Type`) is passed to {@link Injector}\n * creation.\n * \n * ### Example
([live demo](http://plnkr.co/edit/YatCFbPAMCL0JSSQ4mvH?p=preview))\n * \n * ```typescript\n * expect(() =>
Injector.resolveAndCreate([`not a type`])).toThrowError();\n * \n * \n * @param {?} provider\n * @return {?} \n *
\nfunction invalidProviderError(provider) {\n return Error(`Invalid provider - only instances of Provider and
Type are allowed, got: ` + provider);\n}\n\n/**\n * Thrown when the class has no annotation information.\n * \n *
Lack of annotation information prevents the {@link Injector} from determining which dependencies\n * need to be
injected into the constructor.\n * \n * ### Example ([live
demo](http://plnkr.co/edit/rHnZtlNS7vJOPQ6pcVkm?p=preview))\n * \n * ```typescript\n * class A {\n *
constructor(b) {\n * }\n * }\n * \n * expect(() => Injector.resolveAndCreate([A])).toThrowError();\n * \n * \n * This
error is also thrown when the class not marked with {@link Injectable} has parameter types.\n * \n * ```typescript\n *
class B {\n * }\n * \n * class A {\n * constructor(b:B) {\n * } // no information about the parameter types of A is available
at runtime.\n * }\n * \n * expect(() => Injector.resolveAndCreate([A,B])).toThrowError();\n * \n * \n * \n * @stable\n *
@param {?} typeOrFunc\n * @param {?} params\n * @return {?} \n * \nfunction noAnnotationError(typeOrFunc,
params) {\n var /** @type {?} */ signature = [];\n for (var /** @type {?} */ i = 0, /** @type {?} */ ii =

```



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Attention: This regex has to hold even if the code is minified!

```

nvar DELEGATE_CTOR =
/^function\s+(\S+)(\s*\{\s*\S+\}\.apply\(\(this,\s*arguments\)\);nvar ReflectionCapabilities = /** @class */
(function () {n function ReflectionCapabilities(reflect) {n this._reflect = reflect || _global['Reflect'];n }n
/**n * @return {?}n */n ReflectionCapabilities.prototype.isReflectionEnabled = /**n * @return {?}n
*/n function () { return true; };n /**n * @template Tn * @param {?} t\n * @return {?}n */n
ReflectionCapabilities.prototype.factory = /**n * @template Tn * @param {?} t\n * @return {?}n */n
function (t) { return function () {n var args = [];\n for (var _i = 0; _i < arguments.length; _i++) {n args[_i] = arguments[_i];\n }n return new (t.bind.apply(t, [void 0].concat(args)))();\n }; };n /**
@internaln */n /**n * @internaln * @param {?} paramTypes\n * @param {?} paramAnnotations\n * @return {?}n */n ReflectionCapabilities.prototype._zipTypesAndAnnotations = /**n * @internaln *
@param {?} paramTypes\n * @param {?} paramAnnotations\n * @return {?}n */n function
(paramTypes, paramAnnotations) {n var /** @type {?} */ result;\n if (typeof paramTypes === 'undefined')
{n result = new Array(paramAnnotations.length);\n }n else {n result = new
Array(paramTypes.length);\n }n for (var /** @type {?} */ i = 0; i < result.length; i++) {n // TS
outputs Object for parameters without types, while Traceur omits\n // the annotations. For now we preserve
the Traceur behavior to aid\n // migration, but this can be revisited.\n if (typeof paramTypes ===
'undefined') {n result[i] = [];\n }n else if (paramTypes[i] != Object) {n result[i] =
[paramTypes[i]];\n }n else {n result[i] = [];\n }n if (paramAnnotations &&
paramAnnotations[i] != null) {n result[i] = result[i].concat(paramAnnotations[i]);\n }n }n
return result;\n };n /**n * @param {?} type\n * @param {?} parentCtor\n * @return {?}n */n
ReflectionCapabilities.prototype._ownParameters = /**n * @param {?} type\n * @param {?} parentCtor\n
* @return {?}n */n function (type, parentCtor) {n // If we have no decorators, we only have
function.length as metadata.\n // In that case, to detect whether a child class declared an own constructor or
not,\n // we need to look inside of that constructor to check whether it is\n // just calling the parent.\n //
This also helps to work around for https://github.com/Microsoft/TypeScript/issues/12439\n // that sets
'design:paramtypes' to []\n // if a class inherits from another class but has no ctor declared itself.\n if
(DELEGATE_CTOR.exec(type.toString()))\n return null;\n }n // Prefer the direct API.\n if
((/** @type {?} */ (type)).parameters && (/** @type {?} */ (type)).parameters !== parentCtor.parameters) {n
return (/** @type {?} */ (type)).parameters;\n }n // API of tsickle for lowering decorators to properties on
the class.\n var /** @type {?} */ tsickleCtorParams = (/** @type {?} */ (type)).ctorParameters;\n if
(tsickleCtorParams && tsickleCtorParams !== parentCtor.ctorParameters) {n // Newer tsickle uses a
function closure\n // Retain the non-function case for compatibility with older tsickle\n var /** @type
{?} */ ctorParameters = typeof tsickleCtorParams === 'function' ? tsickleCtorParams() : tsickleCtorParams;\n
var /** @type {?} */ paramTypes_1 = ctorParameters.map(function (ctorParam) { return ctorParam &&
ctorParam.type; });\n var /** @type {?} */ paramAnnotations_1 = ctorParameters.map(function (ctorParam)
{n return ctorParam && convertTsickleDecoratorIntoMetadata(ctorParam.decorators);\n });\n
return this._zipTypesAndAnnotations(paramTypes_1, paramAnnotations_1);\n }n // API for metadata
created by invoking the decorators.\n var /** @type {?} */ paramAnnotations =
type.hasOwnProperty(PARAMETERS) && (/** @type {?} */ (type))[PARAMETERS];\n var /** @type {?}
*/ paramTypes = this._reflect && this._reflect.getOwnMetadata &&\n
this._reflect.getOwnMetadata('design:paramtypes', type);\n if (paramTypes || paramAnnotations) {n
return this._zipTypesAndAnnotations(paramTypes, paramAnnotations);\n }n // If a class has no decorators,
at least create metadata\n // based on function.length.\n // Note: We know that this is a real constructor as
we checked\n // the content of the constructor above.\n return new Array((/** @type {?} */
(type.length))).fill(undefined);\n };n /**n * @param {?} type\n * @return {?}n */n
ReflectionCapabilities.prototype.parameters = /**n * @param {?} type\n * @return {?}n */n function
(type) {n // Note: only report metadata if we have at least one class decorator\n // to stay in sync with the

```



```

static reflector.\n if (!isType(type)) {\n return [];\n }\n var /** @type {?} */ parentCtor =
getParentCtor(type);\n var /** @type {?} */ parameters = this._ownParameters(type, parentCtor);\n if
(!parameters && parentCtor !== Object) {\n parameters = this.parameters(parentCtor);\n }\n return
parameters || [];\n };\n /**\n * @param {?} typeOrFunc\n * @param {?} parentCtor\n * @return {?}\n
*/\n ReflectionCapabilities.prototype._ownAnnotations = /**\n * @param {?} typeOrFunc\n * @param {?}
parentCtor\n * @return {?}\n */\n function (typeOrFunc, parentCtor) {\n // Prefer the direct API.\n if
(/** @type {?} */ (typeOrFunc)).annotations && /** @type {?} */ (typeOrFunc).annotations !==
parentCtor.annotations) {\n var /** @type {?} */ annotations = /** @type {?} */
(typeOrFunc).annotations;\n if (typeof annotations === 'function' && annotations.annotations) {\n
 annotations = annotations.annotations;\n }\n return annotations;\n }\n // API of tsickle for
lowering decorators to properties on the class.\n if ((/** @type {?} */ (typeOrFunc)).decorators && /** @type
{?} */ (typeOrFunc).decorators !== parentCtor.decorators) {\n return
convertTsickleDecoratorIntoMetadata(/** @type {?} */ (typeOrFunc).decorators);\n }\n // API for
metadata created by invoking the decorators.\n if (typeOrFunc.hasOwnProperty(ANNOTATIONS)) {\n
 return /** @type {?} */ (typeOrFunc)[ANNOTATIONS];\n }\n return null;\n };\n /**\n * @param
{?} typeOrFunc\n * @return {?}\n */\n ReflectionCapabilities.prototype.annotations = /**\n * @param
{?} typeOrFunc\n * @return {?}\n */\n function (typeOrFunc) {\n if (!isType(typeOrFunc)) {\n
 return [];\n }\n var /** @type {?} */ parentCtor = getParentCtor(typeOrFunc);\n var /** @type {?} */
ownAnnotations = this._ownAnnotations(typeOrFunc, parentCtor) || [];\n var /** @type {?} */
parentAnnotations = parentCtor !== Object ? this.annotations(parentCtor) : [];\n return
parentAnnotations.concat(ownAnnotations);\n };\n /**\n * @param {?} typeOrFunc\n * @param {?}
parentCtor\n * @return {?}\n */\n ReflectionCapabilities.prototype._ownPropMetadata = /**\n * @param
{?} typeOrFunc\n * @param {?} parentCtor\n * @return {?}\n */\n function (typeOrFunc, parentCtor) {\n
 // Prefer the direct API.\n if ((/** @type {?} */ (typeOrFunc)).propMetadata &&\n /** @type {?} */
(typeOrFunc).propMetadata !== parentCtor.propMetadata) {\n var /** @type {?} */ propMetadata = /**
@type {?} */ (typeOrFunc).propMetadata;\n if (typeof propMetadata === 'function' &&
propMetadata.propMetadata) {\n propMetadata = propMetadata.propMetadata;\n }\n return
propMetadata;\n }\n // API of tsickle for lowering decorators to properties on the class.\n if ((/** @type
{?} */ (typeOrFunc)).propDecorators &&\n /** @type {?} */ (typeOrFunc).propDecorators !==
parentCtor.propDecorators) {\n var /** @type {?} */ propDecorators_1 = /** @type {?} */
(typeOrFunc).propDecorators;\n var /** @type {?} */ propMetadata_1 = /** @type {?} */ ({});\n Object.keys(propDecorators_1).forEach(function (prop) {\n propMetadata_1[prop] =
convertTsickleDecoratorIntoMetadata(propDecorators_1[prop]);\n });\n return propMetadata_1;\n }\n // API for metadata created by invoking the decorators.\n if
(typeOrFunc.hasOwnProperty(PROP_METADATA)) {\n return /** @type {?} */
(typeOrFunc)[PROP_METADATA];\n }\n return null;\n };\n /**\n * @param {?} typeOrFunc\n
 * @return {?}\n */\n ReflectionCapabilities.prototype.propMetadata = /**\n * @param {?} typeOrFunc\n
 * @return {?}\n */\n function (typeOrFunc) {\n if (!isType(typeOrFunc)) {\n return {};\n }\n var /** @type {?} */ parentCtor = getParentCtor(typeOrFunc);\n var /** @type {?} */ propMetadata = {};\n if (parentCtor !== Object) {\n var /** @type {?} */ parentPropMetadata_1 =
this.propMetadata(parentCtor);\n Object.keys(parentPropMetadata_1).forEach(function (propName) {\n propMetadata[propName] = parentPropMetadata_1[propName];\n });\n }\n var /** @type {?} */
ownPropMetadata = this._ownPropMetadata(typeOrFunc, parentCtor);\n if (ownPropMetadata) {\n Object.keys(ownPropMetadata).forEach(function (propName) {\n var /** @type {?} */ decorators = [];\n if (propMetadata.hasOwnProperty(propName)) {\n decorators.push.apply(decorators,
propMetadata[propName]);\n }\n decorators.push.apply(decorators,
ownPropMetadata[propName]);\n propMetadata[propName] = decorators;\n });\n }\n return propMetadata;\n };\n /**\n * @param {?} type\n * @param {?} lcProperty\n * @return {?}\n
*/

```

```

*^n ReflectionCapabilities.prototype.hasLifecycleHook = /**^n * @param {?} type^n * @param {?}
lcProperty^n * @return {?}^n */^n function (type, lcProperty) {^n return type instanceof Type &&
lcProperty in type.prototype;^n };^n /**^n * @param {?} type^n * @return {?}^n */^n
ReflectionCapabilities.prototype.guards = /**^n * @param {?} type^n * @return {?}^n */^n function (type)
{ return {}; };^n /**^n * @param {?} name^n * @return {?}^n */^n
ReflectionCapabilities.prototype.getter = /**^n * @param {?} name^n * @return {?}^n */^n function
(name) { return /** @type {?} */ (new Function('o', 'return o.' + name + ';')); };^n /**^n * @param {?} name^n
* @return {?}^n */^n ReflectionCapabilities.prototype.setter = /**^n * @param {?} name^n * @return
{?}^n */^n function (name) {^n return /** @type {?} */ (new Function('o', 'v', 'return o.' + name + ' = v;'));^n
};^n /**^n * @param {?} name^n * @return {?}^n */^n ReflectionCapabilities.prototype.method = /**^n
* @param {?} name^n * @return {?}^n */^n function (name) {^n var /** @type {?} */ /functionBody =
'if (!o.' + name + ') throw new Error("\\\\\\" + name + '\\\\\\" is undefined');^n return o.' + name + '\\.apply(o,
args);'^n return /** @type {?} */ (new Function('o', 'args', functionBody)); };^n // There is not a concept
of import uri in Js, but this is useful in developing Dart applications.^n /**^n * @param {?} type^n * @return
{?}^n */^n ReflectionCapabilities.prototype.importUri = /**^n * @param {?} type^n * @return {?}^n */^n
function (type) {^n // StaticSymbol^n if (typeof type === 'object' && type['filePath']) {^n return
type['filePath'];^n }^n // Runtime type^n return '\\.^' + stringify(type); };^n /**^n * @param {?}
type^n * @return {?}^n */^n ReflectionCapabilities.prototype.resourceUri = /**^n * @param {?} type^n *
@return {?}^n */^n function (type) { return '\\.^' + stringify(type); };^n /**^n * @param {?} name^n *
@param {?} moduleUrl^n * @param {?} members^n * @param {?} runtime^n * @return {?}^n */^n
ReflectionCapabilities.prototype.resolveIdentifier = /**^n * @param {?} name^n * @param {?} moduleUrl^n
* @param {?} members^n * @param {?} runtime^n * @return {?}^n */^n function (name, moduleUrl,
members, runtime) {^n return runtime; };^n /**^n * @param {?} enumIdentifier^n * @param {?}
name^n * @return {?}^n */^n ReflectionCapabilities.prototype.resolveEnum = /**^n * @param {?}
enumIdentifier^n * @param {?} name^n * @return {?}^n */^n function (enumIdentifier, name) { return
enumIdentifier[name]; };^n return ReflectionCapabilities;^n());^n/**^n * @param {?} decoratorInvocations^n *
@return {?}^n */^n function convertTsickleDecoratorIntoMetadata(decoratorInvocations) {^n if
(!decoratorInvocations) {^n return [];^n }^n return decoratorInvocations.map(function (decoratorInvocation)
{^n var /** @type {?} */ /decoratorType = decoratorInvocation.type;^n var /** @type {?} */ /annotationCls
= decoratorType.annotationCls;^n var /** @type {?} */ /annotationArgs = decoratorInvocation.args ?
decoratorInvocation.args : [];^n return new (annotationCls.bind.apply(annotationCls, [void
0].concat(annotationArgs))());^n });^n }^n /**^n * @param {?} ctor^n * @return {?}^n */^n function
getParentCtor(ctor) {^n var /** @type {?} */ /parentProto = Object.getPrototypeOf(ctor.prototype);^n var /**
@type {?} */ /parentCtor = parentProto ? parentProto.constructor : null;^n // Note: We always use `Object` as the
null value^n // to simplify checking later on.^n return parentCtor || Object;^n }^n }^n /**^n * @fileoverview added by
tsickle^n * @suppress {checkTypes} checked by tsc^n */^n /**^n * @license^n * Copyright Google Inc. All Rights
Reserved.^n * Use of this source code is governed by an MIT-style license that can be^n * found in the
LICENSE file at https://angular.io/license^n */^n /**^n * Provides access to reflection data about symbols. Used
internally by Angular^n * to power dependency injection and compilation.^n */^n var Reflector = /** @class */
(function () {^n function Reflector(reflectionCapabilities) {^n this.reflectionCapabilities =
reflectionCapabilities;^n }^n /**^n * @param {?} caps^n * @return {?}^n */^n
Reflector.prototype.updateCapabilities = /**^n * @param {?} caps^n * @return {?}^n */^n function (caps) {
this.reflectionCapabilities = caps; };^n /**^n * @param {?} type^n * @return {?}^n */^n
Reflector.prototype.factory = /**^n * @param {?} type^n * @return {?}^n */^n function (type) { return
this.reflectionCapabilities.factory(type); };^n /**^n * @param {?} typeOrFunc^n * @return {?}^n */^n
Reflector.prototype.parameters = /**^n * @param {?} typeOrFunc^n * @return {?}^n */^n function
(typeOrFunc) {^n return this.reflectionCapabilities.parameters(typeOrFunc); };^n /**^n * @param {?}
typeOrFunc^n * @return {?}^n */^n Reflector.prototype.annotations = /**^n * @param {?} typeOrFunc^n

```

```

* @return {?} \n * \n function (typeOrFunc) { \n return
this.reflectionCapabilities.annotations(typeOrFunc); \n }; \n /** \n * @param {?} typeOrFunc \n * @return
{?} \n * \n Reflector.prototype.propMetadata = /** \n * @param {?} typeOrFunc \n * @return {?} \n * \n
function (typeOrFunc) { \n return this.reflectionCapabilities.propMetadata(typeOrFunc); \n }; \n /** \n *
@param {?} type \n * @param {?} lcProperty \n * @return {?} \n * \n
Reflector.prototype.hasLifecycleHook = /** \n * @param {?} type \n * @param {?} lcProperty \n * @return
{?} \n * \n function (type, lcProperty) { \n return this.reflectionCapabilities.hasLifecycleHook(type,
lcProperty); \n }; \n /** \n * @param {?} name \n * @return {?} \n * \n Reflector.prototype.getter = /** \n
* @param {?} name \n * @return {?} \n * \n function (name) { return
this.reflectionCapabilities.getter(name); }; \n /** \n * @param {?} name \n * @return {?} \n * \n
Reflector.prototype.setter = /** \n * @param {?} name \n * @return {?} \n * \n function (name) { return
this.reflectionCapabilities.setter(name); }; \n /** \n * @param {?} name \n * @return {?} \n * \n
Reflector.prototype.method = /** \n * @param {?} name \n * @return {?} \n * \n function (name) { return
this.reflectionCapabilities.method(name); }; \n /** \n * @param {?} type \n * @return {?} \n * \n
Reflector.prototype.importUri = /** \n * @param {?} type \n * @return {?} \n * \n function (type) { return
this.reflectionCapabilities.importUri(type); }; \n /** \n * @param {?} type \n * @return {?} \n * \n
Reflector.prototype.resourceUri = /** \n * @param {?} type \n * @return {?} \n * \n function (type) { return
this.reflectionCapabilities.resourceUri(type); }; \n /** \n * @param {?} name \n * @param {?} moduleUrl \n
* @param {?} members \n * @param {?} runtime \n * @return {?} \n * \n
Reflector.prototype.resolveIdentifier = /** \n * @param {?} name \n * @param {?} moduleUrl \n * @param
{?} members \n * @param {?} runtime \n * @return {?} \n * \n function (name, moduleUrl, members,
runtime) { \n return this.reflectionCapabilities.resolveIdentifier(name, moduleUrl, members, runtime); \n }; \n
/** \n * @param {?} identifier \n * @param {?} name \n * @return {?} \n * \n
Reflector.prototype.resolveEnum = /** \n * @param {?} identifier \n * @param {?} name \n * @return {?} \n
* \n function (identifier, name) { \n return this.reflectionCapabilities.resolveEnum(identifier, name); \n }; \n
return Reflector; \n })(); \n \n /** \n * @fileoverview added by tsickle \n * @suppress {checkTypes} checked by tsc \n
* \n /** \n * @license \n * Copyright Google Inc. All Rights Reserved. \n * \n * Use of this source code is governed by
an MIT-style license that can be \n * found in the LICENSE file at https://angular.io/license \n * \n /** \n * The
{ \n @link Reflector } used internally in Angular to access metadata \n * about symbols. \n * \n \n var reflector = new
Reflector(new ReflectionCapabilities()); \n \n /** \n * @fileoverview added by tsickle \n * @suppress {checkTypes}
checked by tsc \n * \n /** \n * @license \n * Copyright Google Inc. All Rights Reserved. \n * \n * Use of this source
code is governed by an MIT-style license that can be \n * found in the LICENSE file at https://angular.io/license \n
* \n /** \n * `Dependency` is used by the framework to extend DI. \n * This is internal to Angular and should not be
used directly. \n * \n \n var ReflectiveDependency = /** @class */ (function () { \n function
ReflectiveDependency(key, optional, visibility) { \n this.key = key; \n this.optional = optional; \n
this.visibility = visibility; \n } \n /** \n * @param {?} key \n * @return {?} \n * \n
ReflectiveDependency.fromKey = /** \n * @param {?} key \n * @return {?} \n * \n function (key) { \n
return new ReflectiveDependency(key, false, null); \n }; \n return ReflectiveDependency; \n })(); \n \n
var _EMPTY_LIST = []; \n \n /** \n * An internal resolved representation of a { \n @link Provider } used by the { \n
@link Injector }. \n * \n * It is usually created automatically by `Injector.resolveAndCreate`. \n * \n * It can be created
manually, as follows: \n * \n * ### Example ([live
demo](http://plnkr.co/edit/RfEnh8kUEI0G3qsnIeT?p%3Dpreview&p=preview)) \n * \n * ```typescript \n * var
resolvedProviders = Injector.resolve([{ provide: 'message', useValue: 'Hello' }]); \n * var injector =
Injector.fromResolvedProviders(resolvedProviders); \n * \n * expect(injector.get('message')).toEqual('Hello'); \n *
``` \n * \n * \n * @experimental \n * @record \n * \n \n var ResolvedReflectiveProvider_ = /** @class */ (function () { \n
function ResolvedReflectiveProvider_(key, resolvedFactories, multiProvider) { \n this.key = key; \n
this.resolvedFactories = resolvedFactories; \n this.multiProvider = multiProvider; \n this.resolvedFactory =
this.resolvedFactories[0]; \n } \n return ResolvedReflectiveProvider_; \n })(); \n \n /** \n * An internal resolved

```

```

representation of a factory function created by resolving {@link Provider}.n * {@experimental}n * \nvar
ResolvedReflectiveFactory = /** @class */ (function () {n  function ResolvedReflectiveFactory(factory,
dependencies) {n    this.factory = factory;n    this.dependencies = dependencies;n  }n  return
ResolvedReflectiveFactory;n}());n/**n * Resolve a single provider.n * @param {?} providern * @return {?}n
*/nfunction resolveReflectiveFactory(provider) {n  var /** @type {?} */ factoryFn;n  var /** @type {?} */
resolvedDeps;n  if (provider.useClass) {n    var /** @type {?} */ useClass =
resolveForwardRef(provider.useClass);n    factoryFn = reflector.factory(useClass);n    resolvedDeps =
_dependenciesFor(useClass);n  }n  else if (provider.useExisting) {n    factoryFn = function (aliasInstance) {
return aliasInstance; };n    resolvedDeps =
[ReflectiveDependency.fromKey(ReflectiveKey.get(provider.useExisting))];n  }n  else if (provider.useFactory)
{n    factoryFn = provider.useFactory;n    resolvedDeps = constructDependencies(provider.useFactory,
provider.deps);n  }n  else {n    factoryFn = function () { return provider.useValue; };n    resolvedDeps =
_EMPTY_LIST;n  }n  return new ResolvedReflectiveFactory(factoryFn, resolvedDeps);n}n/**n * Converts
the {@link Provider} into {@link ResolvedProvider}.n * {@link Injector} internally only uses {@link
ResolvedProvider}, {@link Provider} containsn * convenience provider syntax.n * @param {?} providern *
@return {?}n */nfunction resolveReflectiveProvider(provider) {n  return new
ResolvedReflectiveProvider_(ReflectiveKey.get(provider.provider), [resolveReflectiveFactory(provider)],
provider.multi || false);n}n/**n * Resolve a list of Providers.n * @param {?} providersn * @return {?}n
*/nfunction resolveReflectiveProviders(providers) {n  var /** @type {?} */ normalized =
_normalizeProviders(providers, []);n  var /** @type {?} */ resolved =
normalized.map(resolveReflectiveProvider);n  var /** @type {?} */ resolvedProviderMap =
mergeResolvedReflectiveProviders(resolved, new Map());n  return
Array.from(resolvedProviderMap.values());n}n/**n * Merges a list of ResolvedProviders into a list wheren *
each key is contained exactly once and multi providersn * have been merged.n * @param {?} providersn *
@param {?} normalizedProvidersMapn * @return {?}n */nfunction
mergeResolvedReflectiveProviders(providers, normalizedProvidersMap) {n  for (var /** @type {?} */ i = 0; i <
providers.length; i++) {n    var /** @type {?} */ provider = providers[i];n    var /** @type {?} */ existing =
normalizedProvidersMap.get(provider.key.id);n    if (existing) {n      if (provider.multiProvider !==
existing.multiProvider) {n        throw mixingMultiProvidersWithRegularProvidersError(existing, provider);n
      }n      if (provider.multiProvider) {n        for (var /** @type {?} */ j = 0; j <
provider.resolvedFactories.length; j++) {n
existing.resolvedFactories.push(provider.resolvedFactories[j]);n        }n      }n      else {n
normalizedProvidersMap.set(provider.key.id, provider);n      }n      else {n        var /** @type {?} */
*/ resolvedProvider = void 0;n        if (provider.multiProvider) {n          resolvedProvider = new
ResolvedReflectiveProvider_(provider.key, provider.resolvedFactories.slice(), provider.multiProvider);n
        }n        else {n          resolvedProvider = provider;n        }n
normalizedProvidersMap.set(provider.key.id, resolvedProvider);n      }n    }n  }n  return
normalizedProvidersMap;n}n/**n * @param {?} providersn * @param {?} resn * @return {?}n */nfunction
_normalizeProviders(providers, res) {n  providers.forEach(function (b) {n    if (b instanceof Type) {n
res.push({ provide: b, useClass: b });n    }n    else if (b && typeof b === 'object' && (/** @type {?} */
(b)).provide !== undefined) {n      res.push(/** @type {?} */ (b));n    }n    else if (b instanceof Array) {n
_normalizeProviders(b, res);n    }n    else {n      throw invalidProviderError(b);n    }n  });n
return res;n}n/**n * @param {?} typeOrFuncn * @param {=} dependenciesn * @return {?}n */nfunction
constructDependencies(typeOrFunc, dependencies) {n  if (!dependencies) {n    return
_dependenciesFor(typeOrFunc);n  }n  else {n    var /** @type {?} */ params_1 = dependencies.map(function
(t) { return [t]; });n    return dependencies.map(function (t) { return _extractToken(typeOrFunc, t, params_1);
});n  }n}n/**n * @param {?} typeOrFuncn * @return {?}n */nfunction _dependenciesFor(typeOrFunc) {n
var /** @type {?} */ params = reflector.parameters(typeOrFunc);n  if (!params)n    return [];n  if

```



```

{\n * constructor(public engine:Engine) {\n * }\n * }\n * var providers = ReflectiveInjector.resolve([Car,
Engine]);\n * var injector = ReflectiveInjector.fromResolvedProviders(providers);\n * expect(injector.get(Car)
instanceof Car).toBe(true);\n * ``\n * @experimental\n * /\n * /\n * Creates an injector from previously
resolved providers.\n * This API is the recommended way to construct injectors in performance-sensitive
parts.\n * \n * ### Example ([live demo](http://plnkr.co/edit/KrSMci?p=preview))\n * ``typescript\n *
@Inject()\n * class Engine {\n * }\n * \n * @Inject()\n * class Car {\n *
constructor(public engine:Engine) {\n * }\n * }\n * var providers = ReflectiveInjector.resolve([Car,
Engine]);\n * var injector = ReflectiveInjector.fromResolvedProviders(providers);\n * expect(injector.get(Car)
instanceof Car).toBe(true);\n * ``\n * @experimental\n * @param {?} providers\n * @param {?=}
parent\n * @return {?}\n * /\n * ReflectiveInjector.fromResolvedProviders = /\n * /\n * Creates an injector from
previously resolved providers.\n * This API is the recommended way to construct injectors in performance-
sensitive parts.\n * \n * ### Example ([live demo](http://plnkr.co/edit/KrSMci?p=preview))\n * \n *
``typescript\n * @Inject()\n * class Engine {\n * }\n * \n * @Inject()\n * class Car {\n *
constructor(public engine:Engine) {\n * }\n * }\n * var providers = ReflectiveInjector.resolve([Car,
Engine]);\n * var injector = ReflectiveInjector.fromResolvedProviders(providers);\n * expect(injector.get(Car)
instanceof Car).toBe(true);\n * ``\n * @experimental\n * @param {?} providers\n * @param {?=}
parent\n * @return {?}\n * /\n * function (providers, parent) {\n * return new ReflectiveInjector_(providers,
parent);\n * };\n * return ReflectiveInjector._(this);\n * var ReflectiveInjector_ = /\n * /\n * @class */ (function () {\n * /\n *
Private\n * /\n * function ReflectiveInjector_(providers, parent) {\n * /\n * \n * @internal\n * /\n *
this._constructionCounter = 0;\n * this._providers = providers;\n * this.parent = parent || null;\n * var /\n *
@type {?} */ len = providers.length;\n * this.keyIds = new Array(len);\n * this.objs = new Array(len);\n *
for (var /\n * @type {?} */ i = 0; i < len; i++) {\n * this.keyIds[i] = providers[i].key.id;\n * this.objs[i] =
UNDEFINED;\n * }\n * }\n * }\n * /\n * @param {?} token\n * @param {?=} notFoundValue\n * @return
{?}\n * /\n * ReflectiveInjector_.prototype.get = /\n * /\n * @param {?} token\n * @param {?=}
notFoundValue\n * @return {?}\n * /\n * function (token, notFoundValue) {\n * if (notFoundValue === void
0) {\n * notFoundValue = THROW_IF_NOT_FOUND;\n * }\n * return this._getByKey(ReflectiveKey.get(token), null,
notFoundValue);\n * };\n * }\n * /\n * @param {?} providers\n * @return {?}\n * /\n *
ReflectiveInjector_.prototype.resolveAndCreateChild = /\n * /\n * @param {?} providers\n * @return {?}\n *
/\n * function (providers) {\n * var /\n * @type {?} */ ResolvedReflectiveProviders =
ReflectiveInjector.resolve(providers);\n * return this.createChildFromResolved(ResolvedReflectiveProviders);\n *
};\n * }\n * /\n * @param {?} providers\n * @return {?}\n * /\n *
ReflectiveInjector_.prototype.createChildFromResolved = /\n * /\n * @param {?} providers\n * @return {?}\n *
/\n * function (providers) {\n * var /\n * @type {?} */ inj = new ReflectiveInjector_(providers);\n * (/\n * @type
{?} */ (inj)).parent = this;\n * return inj;\n * };\n * }\n * /\n * @param {?} provider\n * @return {?}\n *
/\n * ReflectiveInjector_.prototype.resolveAndInstantiate = /\n * /\n * @param {?} provider\n * @return {?}\n *
/\n * function (provider) {\n * return this.instantiateResolved(ReflectiveInjector.resolve([provider])[0]);\n *
};\n * }\n * /\n * @param {?} provider\n * @return {?}\n * /\n * ReflectiveInjector_.prototype.instantiateResolved =
/\n * /\n * @param {?} provider\n * @return {?}\n * /\n * function (provider) {\n * return
this._instantiateProvider(provider);\n * };\n * }\n * /\n * @param {?} index\n * @return {?}\n * /\n *
ReflectiveInjector_.prototype.getProviderAtIndex = /\n * /\n * @param {?} index\n * @return {?}\n * /\n *
function (index) {\n * if (index < 0 || index >= this._providers.length) {\n * throw
outOfBoundsError(index);\n * }\n * return this._providers[index];\n * };\n * }\n * /\n * @internal\n * /\n *
@internal\n * @param {?} provider\n * @return {?}\n * /\n * ReflectiveInjector_.prototype._new = /\n *
/\n * @internal\n * @param {?} provider\n * @return {?}\n * /\n * function (provider) {\n * if
(this._constructionCounter++ > this._getMaxNumberOfObjects()) {\n * throw cyclicDependencyError(this,
provider.key);\n * }\n * return this._instantiateProvider(provider);\n * };\n * }\n * /\n * @return {?}\n *
/\n * ReflectiveInjector_.prototype._getMaxNumberOfObjects = /\n * /\n * @return {?}\n * /\n * function () {\n * return
this.objs.length;\n * };\n * }\n * /\n * @param {?} provider\n * @return {?}\n * /\n *

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ReflectiveInjector_.prototype._instantiateProvider = /**\n * @param {?} provider\n * @return {?}\n */\n
function (provider) {\n  if (provider.multiProvider) {\n    var /** @type {?} */ res = new\n    Array(provider.resolvedFactories.length);\n    for (var /** @type {?} */ i = 0; i <\n    provider.resolvedFactories.length; ++i) {\n      res[i] = this._instantiate(provider,\n    provider.resolvedFactories[i]);\n    }\n    return res;\n  }\n  else {\n    return\n    this._instantiate(provider, provider.resolvedFactories[0]);\n  }\n};\n /**\n * @param {?} provider\n * @param {?} ResolvedReflectiveFactory\n * @return {?}\n */\n ReflectiveInjector_.prototype._instantiate =\n /**\n * @param {?} provider\n * @param {?} ResolvedReflectiveFactory\n * @return {?}\n */\n
function (provider, ResolvedReflectiveFactory$$1) {\n  var _this = this;\n  var /** @type {?} */ factory =\n    ResolvedReflectiveFactory$$1.factory;\n  var /** @type {?} */ deps;\n  try {\n    deps =\n    ResolvedReflectiveFactory$$1.dependencies.map(function (dep) { return _this._getByReflectiveDependency(dep);\n    });\n  }\n  catch (/** @type {?} */ e) {\n    if (e.addKey) {\n      e.addKey(this, provider.key);\n    }\n    throw e;\n  }\n  var /** @type {?} */ obj;\n  try {\n    obj = factory.apply(void 0,\n    deps);\n  }\n  catch (/** @type {?} */ e) {\n    throw instantiationError(this, e, e.stack, provider.key);\n  }\n  return obj;\n};\n /**\n * @param {?} dep\n * @return {?}\n */\n
ReflectiveInjector_.prototype._getByReflectiveDependency = /**\n * @param {?} dep\n * @return {?}\n */\n
function (dep) {\n  return this._getKey(dep.key, dep.visibility, dep.optional ? null :\n    THROW_IF_NOT_FOUND);\n};\n /**\n * @param {?} key\n * @param {?} visibility\n * @param\n {?} notFoundValue\n * @return {?}\n */\n
ReflectiveInjector_.prototype._getKey = /**\n * @param\n {?} key\n * @param {?} visibility\n * @param {?} notFoundValue\n * @return {?}\n */\n
function\n (key, visibility, notFoundValue) {\n  if (key === ReflectiveInjector_.INJECTOR_KEY) {\n    return this;\n  }\n  if (visibility instanceof Self) {\n    return this._getKeySelf(key, notFoundValue);\n  }\n  else {\n    return this._getKeyDefault(key, notFoundValue, visibility);\n  }\n};\n /**\n * @param\n {?} keyId\n * @return {?}\n */\n
ReflectiveInjector_.prototype._getObjByKeyId = /**\n * @param {?} keyId\n * @return {?}\n */\n
function (keyId) {\n  for (var /** @type {?} */ i = 0; i < this.keyIds.length;\n    i++) {\n    if (this.keyIds[i] === keyId) {\n      if (this.objs[i] === UNDEFINED) {\n        this.objs[i] = this._new(this._providers[i]);\n      }\n      return this.objs[i];\n    }\n  }\n  return UNDEFINED;\n};\n /** @internal */\n /**\n * @param {?} key\n * @param\n {?} notFoundValue\n * @return {?}\n */\n
ReflectiveInjector_.prototype._throwOrNull = /**\n * @internal\n * @param {?} key\n * @param {?} notFoundValue\n * @return {?}\n */\n
function (key,\n notFoundValue) {\n  if (notFoundValue !== THROW_IF_NOT_FOUND) {\n    return notFoundValue;\n  }\n  else {\n    throw noProviderError(this, key);\n  }\n};\n /** @internal */\n /**\n * @internal\n * @param {?} key\n * @param {?} notFoundValue\n * @return {?}\n */\n
ReflectiveInjector_.prototype._getKeySelf = /**\n * @internal\n * @param {?} key\n * @param {?} notFoundValue\n * @return {?}\n */\n
function (key, notFoundValue) {\n  var /** @type {?} */ obj =\n    this._getObjByKeyId(key.id);\n  return (obj !== UNDEFINED) ? obj : this._throwOrNull(key,\n    notFoundValue);\n};\n /** @internal */\n /**\n * @internal\n * @param {?} key\n * @param {?} notFoundValue\n * @param {?} visibility\n * @return {?}\n */\n
ReflectiveInjector_.prototype._getKeyDefault = /**\n * @internal\n * @param {?} key\n * @param {?} notFoundValue\n * @param {?} visibility\n * @return {?}\n */\n
function (key, notFoundValue, visibility)\n {\n  var /** @type {?} */ inj;\n  if (visibility instanceof SkipSelf) {\n    inj = this.parent;\n  }\n  else {\n    inj = this;\n  }\n  while (inj instanceof ReflectiveInjector_) {\n    var /** @type {?} */\n    inj_ = /** @type {?} */ (inj);\n    var /** @type {?} */ obj = inj_._getObjByKeyId(key.id);\n    if (obj !==\n    UNDEFINED)\n      return obj;\n    inj = inj_.parent;\n  }\n  if (inj !== null) {\n    return\n    inj.get(key.token, notFoundValue);\n  }\n  else {\n    return this._throwOrNull(key, notFoundValue);\n  }\n};\n Object.defineProperty(ReflectiveInjector_.prototype, 'displayName', {\n  get: /**\n * @return {?}\n */\n
function () {\n  var /** @type {?} */ providers = _mapProviders(this, function\n (b) { return ' ' + b.key.displayName + ' '; })\n    .join(', ');\n  return "ReflectiveInjector(providers:"

```



```

[" + providers + ")");\n    },\n    enumerable: true,\n    configurable: true\n  });\n  /**\n   * @return  

  {?}\n   *\n   ReflectiveInjector_.prototype.toString = /**\n   * @return {?}\n   *\n   function () { return  

  this.displayName; }\n  ReflectiveInjector_.INJECTOR_KEY = ReflectiveKey.get(Injector);\n  return  

  ReflectiveInjector_;\n  }());\n  /**\n   * @param {?} injector\n   * @param {?} fn\n   * @return {?}\n   *\n   function  

  _mapProviders(injector, fn) {\n    var /** @type {?} */ res = new Array(injector._providers.length);\n    for (var /**  

  @type {?} */ i = 0; i < injector._providers.length; ++i) {\n      res[i] = fn(injector.getProviderAtIndex(i));\n    }\n    return res;\n  }\n  /**\n   * @fileoverview added by tsickle\n   * @suppress {checkTypes} checked by tsc\n   *\n   *\n   * @license\n   * Copyright Google Inc. All Rights Reserved.\n   *\n   * Use of this source code is governed by an MIT-  

  style license that can be\n   * found in the LICENSE file at https://angular.io/license\n   *\n   *\n   * @module\n   *  

  @description\n   * The `di` module provides dependency injection container services.\n   *\n   *\n   * @fileoverview  

  added by tsickle\n   * @suppress {checkTypes} checked by tsc\n   *\n   *\n   * @license\n   * Copyright Google Inc. All  

  Rights Reserved.\n   *\n   * Use of this source code is governed by an MIT-style license that can be\n   * found in the  

  LICENSE file at https://angular.io/license\n   *\n   *\n   * Determine if the argument is shaped like a Promise\n   *  

  @param {?} obj\n   * @return {?}\n   *\n   function isPromise(obj) {\n    // allow any Promise/A+ compliant thenable.\n    // It's up to the caller to ensure that obj.then conforms to the spec\n    return !!obj && typeof obj.then ===  

  'function';\n  }\n  /**\n   * Determine if the argument is an Observable\n   * @param {?} obj\n   * @return {?}\n   *\n   function isObservable(obj) {\n    // TODO use Symbol.observable when  

  https://github.com/ReactiveX/rxjs/issues/2415 will be resolved\n    return !!obj && typeof obj.subscribe ===  

  'function';\n  }\n  /**\n   * @fileoverview added by tsickle\n   * @suppress {checkTypes} checked by tsc\n   *\n   *\n   * @license\n   * Copyright Google Inc. All Rights Reserved.\n   *\n   * Use of this source code is governed by an MIT-  

  style license that can be\n   * found in the LICENSE file at https://angular.io/license\n   *\n   *\n   * A function that will  

  be executed when an application is initialized.\n   * \n   * @experimental\n   * \n   * @nvar APP_INITIALIZER = new  

  InjectionToken('Application Initializer');\n  /**\n   * A class that reflects the state of running {\n   * @link  

  APP_INITIALIZER}s.\n   * \n   * @experimental\n   * \n   * @nvar ApplicationInitStatus = /** @class */ (function () {\n    function ApplicationInitStatus(appInits) {\n      var _this = this;\n      this.appInits = appInits;\n      this.initialized  

  = false;\n      this.done = false;\n      this.donePromise = new Promise(function (res, rej) {\n        _this.resolve =  

  res;\n        _this.reject = rej;\n      });\n    }\n    /** @internal\n    /**\n     * @internal\n     * @return {?}\n    *\n    ApplicationInitStatus.prototype.runInitializers = /**\n     * @internal\n     * @return {?}\n    *\n    function  

  () {\n      var _this = this;\n      if (this.initialized) {\n        return;\n      }\n      var /** @type {?} */  

  asyncInitPromises = [];\n      var /** @type {?} */ complete = function () {\n        (** @type {?} */  

  (_this)).done = true;\n        _this.resolve();\n      }; \n      if (this.appInits) {\n        for (var /** @type {?} */ i =  

  0; i < this.appInits.length; i++) {\n          var /** @type {?} */ initResult = this.appInits[i]();\n          if  

  (isPromise(initResult)) {\n            asyncInitPromises.push(initResult);\n          }\n        }\n      }\n      Promise.all(asyncInitPromises).then(function () { complete(); }).catch(function (e) { _this.reject(e); });\n      if  

  (asyncInitPromises.length === 0) {\n        complete();\n      }\n      this.initialized = true;\n    }; \n    ApplicationInitStatus.decorators = [\n      { type: Injectable },\n    ]; \n    /** @nocollapse\n    ApplicationInitStatus.ctorParameters = function () { return [\n      { type: Array, decorators: [{ type: Inject, args:  

  [APP_INITIALIZER, ], { type: Optional, .] },\n    ]; \n    }; \n    return ApplicationInitStatus;\n  }());\n  /**\n   *  

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  found in the LICENSE file at https://angular.io/license\n   *\n   *\n   * A DI Token representing a unique string id  

  assigned to the application by Angular and used\n   * primarily for prefixing application attributes and CSS styles  

  when\n   * {\n   * @link ViewEncapsulation#Emulated ViewEncapsulation.Emulated} is being used.\n   *\n   * If you need  

  to avoid randomly generated value to be used as an application id, you can provide\n   * a custom value via a DI  

  provider <!-- TODO: provider --> configuring the root {\n   * @link Injector}\n   * using this token.\n   *\n   *  

  @experimental\n   * \n   * @nvar APP_ID = new InjectionToken('AppId');\n  /**\n   * @return {?}\n   *\n   function  

  _appIdRandomProviderFactory() {\n    return `\" + _randomChar() + _randomChar() + _randomChar();\n  };\n  /**\n   *  

  Providers that will generate a random APP_ID_TOKEN.\n   * \n   * @experimental\n   * \n   * @nvar

```

```

APP_ID_RANDOM_PROVIDER = {\n  provide: APP_ID,\n  useFactory: _appIdRandomProviderFactory,\n  deps: /** @type {?} */ ([]),\n};\n/**\n * @return {\n * ^\nfunction _randomChar() {\n  return\n  String.fromCharCode(97 + Math.floor(Math.random() * 25));\n}\n}\n/**\n * A function that will be executed when a\n  platform is initialized.\n * \\\nexperimental\n * ^\nvar PLATFORM_INITIALIZER = new InjectionToken('Platform\n  Initializer');\n/**\n * A token that indicates an opaque platform id.\n * \\\nexperimental\n * ^\nvar PLATFORM_ID\n  = new InjectionToken('Platform ID');\n/**\n * All callbacks provided via this token will be called for every\n  component that is bootstrapped.\n * Signature of the callback:\n * \n * `(componentRef: ComponentRef) => void`\n * \n * \\\nexperimental\n * ^\nvar APP_BOOTSTRAP_LISTENER = new\n  InjectionToken('appBootstrapListener');\n/**\n * A token which indicates the root directory of the application\n * \\\nexperimental\n * ^\nvar PACKAGE_ROOT_URL = new InjectionToken('Application Packages Root\n  URL');\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * ^\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source code is governed by an MIT-\n  style license that can be\n * found in the LICENSE file at https://angular.io/license\n * ^\nvar Console = /** @class\n */ (function () {\n  function Console() {\n  }\n  /**\n   * @param {?} message\n   * @return {\n   * ^\n  Console.prototype.log = /**\n   * @param {?} message\n   * @return {\n   * ^\n  function (message) {\n  //\n  tslint:disable-next-line:no-console\n    console.log(message);\n  }; \n  // Note: for reporting errors use\n  `DOM.logError()` as it is platform specific\n  /**\n   * @param {?} message\n   * @return {\n   * ^\n  Console.prototype.warn = /**\n   * @param {?} message\n   * @return {\n   * ^\n  function (message) {\n  //\n  tslint:disable-next-line:no-console\n    console.warn(message);\n  }; \n  Console.decorators = [\n  { type:\n  Injectable },\n  ];\n  /** @nocollapse */\n  Console.ctorParameters = function () { return []; }; \n  return\n  Console;\n})();\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * ^\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source code is governed by an MIT-\n  style license that can be\n * found in the LICENSE file at https://angular.io/license\n * ^\n/**\n * Combination of\n  NgModuleFactory and ComponentFactories.\n * \n * \\\nexperimental\n * ^\nvar ModuleWithComponentFactories =\n  /** @class */ (function () {\n  function ModuleWithComponentFactories(ngModuleFactory, componentFactories)\n  {\n    this.ngModuleFactory = ngModuleFactory;\n    this.componentFactories = componentFactories;\n  }\n  return ModuleWithComponentFactories;\n})();\n/**\n * @return {\n * ^\nfunction _throwError() {\n  throw new\n  Error("Runtime compiler is not loaded");\n}\n}\n/**\n * Low-level service for running the angular compiler during\n  runtime\n * to create {\n * @link ComponentFactory}s, which\n * can later be used to create and render a Component\n  instance.\n * \n * Each {\n * @link NgModule` provides an own `Compiler` to its injector,\n * that will use the\n  directives/pipes of the ng module for compilation\n * of components.\n * \n * \\\nstable\n * ^\nvar Compiler = /** @class\n */ (function () {\n  function Compiler() {\n  }\n  /**\n   * Compiles the given NgModule and all of its\n  components. All templates of the components listed\n * in `entryComponents` have to be inlined.\n * \n * \n * \n * Compiles the given NgModule and all of its components. All templates of the components listed\n * in\n  `entryComponents` have to be inlined.\n * \n * @template T\n * @param {?} moduleType\n * @return {\n * ^\n  Compiler.prototype.compileModuleSync = /**\n * Compiles the given NgModule and all of its\n  components. All templates of the components listed\n * in `entryComponents` have to be inlined.\n * \n * @template T\n * @param {?} moduleType\n * @return {\n * ^\n  function (moduleType) {\n  throw\n  _throwError();\n};\n  /**\n   * Compiles the given NgModule and all of its components\n * ^\n  /**\n   * Compiles the given NgModule and all of its components\n * @template T\n * @param {?} moduleType\n * @return {\n * ^\n  Compiler.prototype.compileModuleAsync = /**\n * Compiles the given NgModule and\n  all of its components\n * @template T\n * @param {?} moduleType\n * @return {\n * ^\n  function\n  (moduleType) {\n  throw _throwError();\n};\n  /**\n   * Same as {\n * @link #compileModuleSync} but also creates\n  ComponentFactories for all components.\n * \n * \n * \n * Same as {\n * @link #compileModuleSync} but also\n  creates ComponentFactories for all components.\n * \n * @template T\n * @param {?} moduleType\n * @return\n  {\n * ^\n  Compiler.prototype.compileModuleAndAllComponentsSync = /**\n * Same as {\n * @link\n  #compileModuleSync} but also creates ComponentFactories for all components.\n * \n * @template T\n * @param\n  {\n * ^\n  function (moduleType) {\n    throw _throwError();\n  }; \n  /**\n
```



```

= this._parent.resolveComponentFactory(component);\n    }\n    if (!factory) {\n        throw\n        noComponentFactoryError(component);\n    }\n    return new ComponentFactoryBoundToModule(factory,\n    this.ngModule);\n  };\n  return CodegenComponentFactoryResolver;\n}());\n\nComponentFactoryBoundToModule = /** @class */ (function (_super) {\n  __extends(ComponentFactoryBoundToModule, _super);\n  function ComponentFactoryBoundToModule(factory,\n  ngModule) {\n    var _this = _super.call(this) || this;\n    _this.factory = factory;\n    _this.ngModule =\n    ngModule;\n    _this.selector = factory.selector;\n    _this.componentType = factory.componentType;\n    _this.ngContentSelectors = factory.ngContentSelectors;\n    _this.inputs = factory.inputs;\n    _this.outputs =\n    factory.outputs;\n    return _this;\n  }\n  /**\n   * @param {?} injector\n   * @param {?}=\n  projectableNodes\n   * @param {?}=\n  rootSelectorOrNode\n   * @param {?}=\n  ngModule\n   * @return {?}=\n  ComponentFactoryBoundToModule.prototype.create = /**\n   * @param {?} injector\n   * @param {?}=\n  projectableNodes\n   * @param {?}=\n  rootSelectorOrNode\n   * @param {?}=\n  ngModule\n   * @return {?}=\n  ComponentFactoryBoundToModule\n   */\n  function (injector, projectableNodes, rootSelectorOrNode, ngModule) {\n    return\n    this.factory.create(injector, projectableNodes, rootSelectorOrNode, ngModule || this.ngModule);\n  };\n  return\n  ComponentFactoryBoundToModule;\n})(ComponentFactory);\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n */\n\n/**\n * Represents an instance of an NgModule created via a {\n * @link\n * NgModuleFactory\n * }\n *.\n * NgModuleRef provides access to the NgModule Instance as well other objects related\n * to this\n * NgModule Instance.\n */\n\n/**\n * @abstract\n */\n\n/**\n * @class */ (function ()\n {\n  function NgModuleRef() {\n    }\n  return NgModuleRef;\n})();\n\n/**\n * @record\n */\n\n/**\n * @experimental\n */\n\n/**\n * @abstract\n */\n\n/**\n * @class */ (function ()\n {\n  function\n  NgModuleFactory() {\n    }\n  return NgModuleFactory;\n})();\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n */\n\n/**\n * A scope function for the Web Tracing Framework (WTF).\n */\n\n/**\n * @experimental\n */\n\n/**\n * @record\n */\n\n/**\n * @record\n */\n\n/**\n * @record\n */\n\n/**\n * @return {?}\n */\n\nfunction detectWTF() {\n  var /** @type {?} */ wtf = (/** @type {?} */\n  (_global /** TODO #9100 */) /** TODO #9100 */)['wtf'];\n  if (wtf) {\n    trace = wtf['trace'];\n    if (trace) {\n      events = trace['events'];\n      return true;\n    }\n  }\n  return false;\n}\n\n/**\n * @param {?}=\n  signature\n * @param {?}=\n  flags\n * @return {?}\n */\n\nfunction createScope(signature, flags) {\n  if (flags ===\n  void 0) {\n    flags = null;\n  }\n  return events.createScope(signature, flags);\n}\n\n/**\n * @template T\n */\n\n/**\n * @param {?}\n  scope\n * @param {?}=\n  returnValue\n * @return {?}\n */\n\nfunction leave(scope, returnValue) {\n  trace.leaveScope(scope, returnValue);\n  return returnValue;\n}\n\n/**\n * @param {?}\n  rangeType\n * @param {?}\n  action\n * @return {?}\n */\n\nfunction startTimeRange(rangeType, action) {\n  return\n  trace.beginTimeRange(rangeType, action);\n}\n\n/**\n * @param {?}\n  range\n * @return {?}\n */\n\nfunction\n  endTimeRange(range) {\n    trace.endTimeRange(range);\n  }\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n */\n\n/**\n * True if WTF is enabled.\n */\n\n/**\n * @nvar\n  wtfEnabled = detectWTF();\n */\n\n/**\n * @param {?}=\n  arg0\n * @param {?}=\n  arg1\n * @return {?}\n */\n\nfunction noopScope(arg0, arg1) {\n  return\n  null;\n}\n\n/**\n * Create trace scope.\n */\n\n/**\n * Scopes must be strictly nested and are analogous to stack frames, but\n * do not have to follow the stack frames. Instead it is recommended that they follow logical\n * nesting. You may\n * want to use\n * [Event\n * Signatures](http://google.github.io/tracing-framework/instrumenting-code.html#custom-\n * events)\n * as they are defined in WTF.\n */\n\n/**\n * Used to mark scope entry. The return value is used to leave the\n * scope.\n */\n\nvar myScope = wtfCreateScope('MyClass#myMethod(ascii someVal)');\n\n/**\n * someMethod()\n */\n\nvar s = myScope('Foo');\n// 'Foo' gets stored in tracing UI\n\n// DO SOME WORK HERE\n\nreturn wtfLeave(s, 123);\n// Return value 123\n\n}\n\n/**\n * Note, adding try-finally block around the work to

```

ensure that `wtfLeave` gets called can negatively impact the performance of your application. For this reason we recommend that you don't add them to ensure that `wtfLeave` gets called. In production `wtfLeave` is a noop so try-finally block has no value. When debugging perf issues, skipping `wtfLeave`, do an exception, will produce incorrect trace, but presence of exception signifies logic error which needs to be fixed before the app should be profiled. Add try-finally only when you expect that an exception is expected during normal execution while profiling.

```

@@experimental
nvar wtfCreateScope = wtfEnabled ? createScope : function
(signature, flags) { return noopScope; };
/**
 * Used to mark end of Scope. `scope` to end.
 * `returnValue` (optional) to be passed to the WTF.
 * Returns the `returnValue` for easy chaining.
 */
@@experimental
nvar wtfLeave = wtfEnabled ? leave : function (s, r) { return r; };
/**
 * Used to mark Async start. Async are similar to scope but they don't have to be strictly nested.
 * The return value is used in the call to [endAsync]. Async ranges only work if WTF has been enabled.
 */
someMethod() {
  var s = wtfStartTimeRange('HTTP:GET', 'some.url');
  var future = new Future.delay(5).then(() {
    wtfEndTimeRange(s);
  });
}
/**
 * Ends a async time range operation. [range] is the return value from [wtfStartTimeRange]
 * Async ranges only work if WTF has been enabled.
 */
@@experimental
nvar wtfEndTimeRange = wtfEnabled ? endTimeRange : function (r) { return null; };

```

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Use by directives and components to emit custom Events.

Examples
In the following example, `Zippy` alternatively emits `open` and `close` events when its title gets clicked:

```

@Component({
  selector: 'zippy',
  template:
`<div class="zippy">
  <div (click)="toggle()">Toggle</div>
  <div [hidden]="!visible">
    <ng-content></ng-content>
  </div>
`})
export class Zippy {
  visible: boolean = true;
}
@Output() open: EventEmitter<any> = new EventEmitter();
@Output() close: EventEmitter<any> = new EventEmitter();
toggle() {
  this.visible = !this.visible;
  if (this.visible) {
    this.open.emit(null);
  } else {
    this.close.emit(null);
  }
}

```

The events payload can be accessed by the parameter `sevent` on the components output event handler:

```

<zippy (open)="onOpen($event)" (close)="onClose($event)"></zippy>

```

Uses Rx.Observable but provides an adapter to make it work as specified here: <https://github.com/jhusain/observable-spec>
Once a reference implementation of the spec is available, switch to it.

```

@stable
nvar EventEmitter = /** @class */
(function (_super) {
  __extends(EventEmitter, _super);
  /**
   * Creates an instance of { @link EventEmitter}, which depending on `isAsync`,
   * delivers events synchronously or asynchronously.
   * @param isAsync By default, events are delivered synchronously (default value: `false`),
   * Set to `true` for asynchronous event delivery.
   */
  function EventEmitter(isAsync) {
    if (isAsync === void 0) { isAsync = false; }
    var _this = _super.call(this) || this;
    _this.__isAsync = isAsync;
    return _this;
  }
  /**
   * @param {=} value
   * @return {?}
   */
  EventEmitter.prototype.emit = function (value) {
    _super.prototype.next.call(this, value);
  };
  /**
   * @param {=} generatorOrNext
   * @param {=} error
   * @param {=} complete
   * @return {?}
   */
  EventEmitter.prototype.subscribe = function (generatorOrNext, error, complete) {
    var /** @type {?} */ schedulerFn;
    var /** @type {?} */ errorFn = function (err) { return null; };
    var /** @type {?} */ completeFn = function () { return null; };
    if (generatorOrNext && typeof generatorOrNext === 'object') {
      schedulerFn = this.__isAsync ? function (value) {
        setTimeout(function () {
          return generatorOrNext.next(value);
        });
      } : function (value) {
        generatorOrNext.next(value);
      };
      if (generatorOrNext.error) {
        errorFn = this.__isAsync ? function (err) {
          setTimeout(function () {
            return generatorOrNext.error(err);
          });
        } : function (err) {
          generatorOrNext.error(err);
        };
      } else {
        completeFn = this.__isAsync ? function () {
          setTimeout(function () {
            return generatorOrNext.complete();
          });
        } : function () {
          generatorOrNext.complete();
        };
      }
    }
  };
}

```

```

    }
    else {
      schedulerFn = this.__isAsync ? function (value) {
        setTimeout(function () {
          return generatorOrNext(value);
        });
      } : function (value) {
        generatorOrNext(value);
      };
      if (error) {
        errorFn = this.__isAsync ? function (err) {
          setTimeout(function () {
            return error(err);
          });
        } : function (err) {
          error(err);
        };
      }
      if (complete) {
        completeFn = this.__isAsync ? function () {
          setTimeout(function () {
            return complete();
          });
        } : function () {
          complete();
        };
      }
      return _super.prototype.subscribe.call(this, schedulerFn, errorFn, completeFn);
    }
    return EventEmitter.prototype.call(this, Subject);
  }
}

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An injectable service for executing work inside or outside of the Angular zone.
The most common use of this service is to optimize performance when starting a work consisting of one or more asynchronous tasks that don't require UI updates or error handling to be handled by Angular. Such tasks can be kicked off via {@link #runOutsideAngular} and if needed, these tasks can reenter the Angular zone via {@link #run}.
- docs explaining zones and the use of zones in Angular and change-detection
- link to runOutsideAngular/run (throughout this file!)
### Example
import {Component, NgZone} from '@angular/core';
import {NgIf} from '@angular/common';
@Component({
  selector: 'ng-zone-demo',
  template: `
    <h2>Demo: NgZone</h2>
    <p>Progress: {{progress}}%</p>
    <p *ngIf="progress >= 100">Done processing {{label}} of Angular zone!</p>
    <button (click)="processWithinAngularZone()">Process within Angular zone</button>
    <button (click)="processOutsideOfAngularZone()">Process outside of Angular zone</button>
  `
})
export class NgZoneDemo {
  progress: number = 0;
  label: string;
  constructor(private _ngZone: NgZone) {}
  // Loop inside the Angular zone
  // so the UI DOES refresh after each setTimeout cycle
  processWithinAngularZone() {
    this.label = 'inside';
    this.progress = 0;
    this._increaseProgress(() => console.log('Inside Done!'));
  }
  // Loop outside of the Angular zone
  // so the UI DOES NOT refresh after each setTimeout cycle
  processOutsideOfAngularZone() {
    this.label = 'outside';
    this.progress = 0;
    this._ngZone.runOutsideAngular(() => {
      this._increaseProgress(() => {
        // reenter the Angular zone and display done
        this._ngZone.run(() => {
          console.log('Outside Done!');
        });
      });
    });
  }
  _increaseProgress(doneCallback: () => void) {
    this.progress += 1;
    console.log(`Current progress: ${this.progress}%`);
    if (this.progress < 100) {
      window.setTimeout(() => this._increaseProgress(doneCallback), 10);
    } else {
      doneCallback();
    }
  }
}

/**
 * @experimental
 * @ngvar NgZone = /** @class */ (function () {
  function NgZone(_a) {
    var _b = _a.enableLongStackTrace, enableLongStackTrace = _b === void 0 ? false : _b;
    this.hasPendingMicrotasks = false;
    this.hasPendingMacrotasks = false;
    /**
     * Whether there are no outstanding microtasks or macrotasks.
     */
    this.isStable = true;
    /**
     * Notifies when code enters Angular Zone. This gets fired first on VM Turn.
     */
    this.onUnstable = new EventEmitter(false);
    /**
     * Notifies when there is no more microtasks enqueued in the current VM Turn.
     * This is a hint for Angular to do change detection, which may enqueue more microtasks.
     * For this reason this event can fire multiple times per VM Turn.
     */
    this.onMicrotaskEmpty = new EventEmitter(false);
    /**
     * Notifies when the last `onMicrotaskEmpty` has run and there are no more microtasks, which implies we are about to relinquish VM turn.
     * This event gets called just once.
     */
    this.onStable = new EventEmitter(false);
    /**
     * Notifies that an error has been delivered.
     */
    this.onError = new EventEmitter(false);
    if (typeof Zone === 'undefined') {
      throw new Error("In this configuration Angular requires Zone.js");
    }
    Zone.assertZonePatched();
    var /** @type {?} */ self = /** @type {?} */ ((this));
    self._nesting = 0;
    self._outer = self._inner = Zone.current;
    if ((/** @type {?} */ (Zone))['wtfZoneSpec']) {
      self._inner = self._inner.fork((/** @type {?} */ (Zone))['wtfZoneSpec']);
    }
    if (enableLongStackTrace && (/** @type {?} */ (Zone))['longStackTraceZoneSpec']) {
      self._inner = self._inner.fork((/** @type {?} */ (Zone))['longStackTraceZoneSpec']);
    }
    forkInnerZoneWithAngularBehavior(self);
  }
  /**
   * @return {?}
   */
  NgZone.isInAngularZone =

```

```

/**\n * @return {?}\n *\n function () { return Zone.current.get('isAngularZone') === true; }\n /**\n *
@return {?}\n *\n NgZone.assertInAngularZone = /**\n * @return {?}\n *\n function () {\n if
(!NgZone.isInAngularZone()) {\n throw new Error('Expected to be in Angular Zone, but it is not!');\n }\n
};\n /**\n * @return {?}\n *\n NgZone.assertNotInAngularZone = /**\n * @return {?}\n *\n
function () {\n if (NgZone.isInAngularZone()) {\n throw new Error('Expected to not be in Angular Zone,
but it is!');\n }\n };\n /**\n * Executes the `fn` function synchronously within the Angular zone and
returns value returned by\n * the function.\n *\n * Running functions via `run` allows you to reenter Angular
zone from a task that was executed\n * outside of the Angular zone (typically started via {@link
#runOutsideAngular}).\n *\n * Any future tasks or microtasks scheduled from within this function will
continue executing from\n * within the Angular zone.\n *\n * If a synchronous error happens it will be
rethrown and not reported via `onError`.\n *\n /**\n * Executes the `fn` function synchronously within the
Angular zone and returns value returned by\n * the function.\n *\n * Running functions via `run` allows you
to reenter Angular zone from a task that was executed\n * outside of the Angular zone (typically started via
{\@link #runOutsideAngular}).\n *\n * Any future tasks or microtasks scheduled from within this function
will continue executing from\n * within the Angular zone.\n *\n * If a synchronous error happens it will be
rethrown and not reported via `onError`.\n * @template T\n * @param {?} fn\n * @param {?=} applyThis\n
* @param {?=} applyArgs\n * @return {?}\n *\n NgZone.prototype.run = /**\n * Executes the `fn`
function synchronously within the Angular zone and returns value returned by\n * the function.\n *\n *
Running functions via `run` allows you to reenter Angular zone from a task that was executed\n * outside of the
Angular zone (typically started via {\@link #runOutsideAngular}).\n *\n * Any future tasks or microtasks
scheduled from within this function will continue executing from\n * within the Angular zone.\n *\n * If a
synchronous error happens it will be rethrown and not reported via `onError`.\n * @template T\n * @param
{?} fn\n * @param {?=} applyThis\n * @param {?=} applyArgs\n * @return {?}\n *\n function (fn,
applyThis, applyArgs) {\n return /** @type {?} */ ((/** @type {?} */ ((this)))._inner.run(fn, applyThis,
applyArgs));\n };\n /**\n * Executes the `fn` function synchronously within the Angular zone as a task and
returns value\n * returned by the function.\n *\n * Running functions via `run` allows you to reenter Angular
zone from a task that was executed\n * outside of the Angular zone (typically started via {@link
#runOutsideAngular}).\n *\n * Any future tasks or microtasks scheduled from within this function will
continue executing from\n * within the Angular zone.\n *\n * If a synchronous error happens it will be
rethrown and not reported via `onError`.\n *\n /**\n * Executes the `fn` function synchronously within the
Angular zone as a task and returns value\n * returned by the function.\n *\n * Running functions via `run`
allows you to reenter Angular zone from a task that was executed\n * outside of the Angular zone (typically
started via {\@link #runOutsideAngular}).\n *\n * Any future tasks or microtasks scheduled from within this
function will continue executing from\n * within the Angular zone.\n *\n * If a synchronous error happens it
will be rethrown and not reported via `onError`.\n * @template T\n * @param {?} fn\n * @param {?=}
applyThis\n * @param {?=} applyArgs\n * @param {?=} name\n * @return {?}\n *\n NgZone.prototype.runTask = /**\n * Executes the `fn` function synchronously within the Angular zone as a task
and returns value\n * returned by the function.\n *\n * Running functions via `run` allows you to reenter
Angular zone from a task that was executed\n * outside of the Angular zone (typically started via {\@link
#runOutsideAngular}).\n *\n * Any future tasks or microtasks scheduled from within this function will
continue executing from\n * within the Angular zone.\n *\n * If a synchronous error happens it will be
rethrown and not reported via `onError`.\n * @template T\n * @param {?} fn\n * @param {?=} applyThis\n
* @param {?=} applyArgs\n * @param {?=} name\n * @return {?}\n *\n function (fn, applyThis,
applyArgs, name) {\n var /** @type {?} */ /zone = (/** @type {?} */ ((this)))._inner;\n var /** @type {?}
*/ task = zone.scheduleEventTask('NgZoneEvent: ' + name, fn, EMPTY_PAYLOAD, noop, noop);\n try {\n
return /** @type {?} */ (zone.runTask(task, applyThis, applyArgs));\n }\n finally {\n
zone.cancelTask(task);\n }\n };\n /**\n * Same as `run`, except that synchronous errors are caught and
forwarded via `onError` and not\n * rethrown.\n *\n /**\n * Same as `run`, except that synchronous errors

```



```

Provides a noop implementation of `NgZone` which does nothing. This zone requires explicit calls to framework
to perform rendering.
*/
class NoopNgZone {
  function NoopNgZone() {
    this.hasPendingMicrotasks = false;
    this.hasPendingMacrotasks = false;
    this.isStable = true;
    this.onUnstable = new EventEmitter();
    this.onMicrotaskEmpty = new EventEmitter();
    this.onStable = new EventEmitter();
    this.onError = new EventEmitter();
  }

  /**
   * @param {?} fn
   * @return {?}
   */
  NoopNgZone.prototype.run = function (fn) {
    return fn();
  };

  /**
   * @param {?} fn
   * @return {?}
   */
  NoopNgZone.prototype.runGuarded = function (fn) {
    return fn();
  };

  /**
   * @param {?} fn
   * @return {?}
   */
  NoopNgZone.prototype.runOutsideAngular = function (fn) {
    return fn();
  };

  /**
   * @template T
   * @param {?} fn
   * @return {?}
   */
  NoopNgZone.prototype.runTask = function (fn) {
    return fn();
  };
}

return NoopNgZone;
})();

/**
 * @fileoverview added by tsickle
 * @suppress {checkTypes} checked by tsc
 */

/**
 * Copyright Google Inc. All Rights Reserved.
 * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at
 * https://angular.io/license
 */

The Testability service provides testing hooks that can be accessed from the browser and by services such as Protractor. Each bootstrapped Angular application on the page will have an instance of Testability.

/**
 * @experimental
 */
class Testability {
  function Testability(_ngZone) {
    this._ngZone = _ngZone;

    /**
     * @internal
     */
    this._pendingCount = 0;

    /**
     * @internal
     */
    this._isZoneStable = true;

    /**
     * Whether any work was done since the last 'whenStable' callback. This is useful to detect if this could have potentially destabilized another component while it is stabilizing.
     * @internal
     */
    this._didWork = false;

    /**
     * @internal
     */
    this._callbacks = [];

    /**
     * @internal
     */
    this._watchAngularEvents = function () {
      Testability.prototype._watchAngularEvents.call(this);
    };

    var _this = this;
    this._ngZone.onUnstable.subscribe({
      next: function () {
        _this._didWork = true;
        _this._isZoneStable = false;
      }
    });
    this._ngZone.runOutsideAngular(function () {
      _this._ngZone.onStable.subscribe({
        next: function () {
          NgZone.assertNotInAngularZone();
          scheduleMicroTask(function () {
            _this._isZoneStable = true;
            _this._runCallbacksIfReady();
          });
        }
      });
    });

    /**
     * Increases the number of pending request
     */
    Testability.prototype.increasePendingRequestCount = function () {
      Increases the number of pending request
      this._pendingCount += 1;
      this._didWork = true;
      return this._pendingCount;
    };

    /**
     * Decreases the number of pending request
     */
    Testability.prototype.decreasePendingRequestCount = function () {
      Decreases the number of pending request
      @return {?}
      function () {
        this._pendingCount -= 1;
        if (this._pendingCount < 0) {
          throw new Error('pending async requests below zero');
        }
        this._runCallbacksIfReady();
        return this._pendingCount;
      };

      /**
       * Whether an associated application is stable
       */
      Testability.prototype.isStable = function () {
        Whether an associated application is stable
        @return {?}
        function () {
          return this._isZoneStable && this._pendingCount === 0 && !this._ngZone.hasPendingMacrotasks;
        };

        /**
         * @internal
         */
        Testability.prototype._runCallbacksIfReady = function () {
          @return {?}
          function () {
            var _this = this;
            if (this.isStable()) {
              if (this._callbacks.length !== 0) {
                // Schedules the call backs after a macro task run outside of the angular zone to make sure // no new task are added
                this._ngZone.runOutsideAngular(function () {
                  setTimeout(function () {
                    if (_this.isStable()) {
                      while (_this._callbacks.length !== 0) {
                        /**
                         * @type {?} */
                        (_this._callbacks.pop()))(_this._didWork);
                      }
                      _this._didWork = false;
                    }
                  });
                }
            }
          }
        };
      }
    };
  }
}

```

```

        }\n        });\n        });\n        }\n        else {\n            this._didWork = false;\n        }\n    }\n    else {\n        // Not Ready\n        this._didWork = true;\n    }\n    };\n    /**\n     * Run callback when the application is stable\n     * @param callback function to be called after the application is stable\n     */\n    /**\n     * Run callback when the application is stable\n     * @param {?} callback function to be called after the application is stable\n     * @return {?}\n     */\n    Testability.prototype.whenStable = /**\n     * Run callback when the application is stable\n     * @param {?} callback function to be called after the application is stable\n     * @return {?}\n     */\n    function (callback) {\n        this._callbacks.push(callback);\n        this._runCallbacksIfReady();\n    };\n    /**\n     * Get the number of pending requests\n     */\n    /**\n     * Get the number of pending requests\n     * @return {?}\n     */\n    Testability.prototype.getPendingRequestCount = /**\n     * Get the number of pending requests\n     * @return {?}\n     */\n    function () { return this._pendingCount; };\n    /**\n     * Find providers by name\n     * @param using The root element to search from\n     * @param provider The name of binding variable\n     * @param exactMatch Whether using exactMatch\n     */\n    /**\n     * Find providers by name\n     * @param {?} using The root element to search from\n     * @param {?} provider The name of binding variable\n     * @param {?} exactMatch Whether using exactMatch\n     * @return {?}\n     */\n    Testability.prototype.findProviders = /**\n     * Find providers by name\n     * @param {?} using The root element to search from\n     * @param {?} provider The name of binding variable\n     * @param {?} exactMatch Whether using exactMatch\n     * @return {?}\n     */\n    function (using, provider, exactMatch) {\n        // TODO(juliemr): implement.\n        return [];\n    };\n    Testability.decorators = [\n        { type: Injectable },\n    ];\n    /** @nocollapse */\n    Testability.ctorParameters = function () { return [\n        { type: NgZone, },\n    ]; }; return Testability;\n    });\n    /**\n     * A global registry of {@link Testability} instances for specific elements.\n     */\n    /**\n     * @experimental\n     */\n    nvar TestabilityRegistry = /**\n     * @class */ (function () {\n        function TestabilityRegistry() {\n            /**\n             * @internal\n             */\n            this._applications = new Map();\n        }\n        _testabilityGetter.addToWindow(this);\n    });\n    /**\n     * Registers an application with a testability hook so that it can be tracked\n     * @param token token of application, root element\n     * @param testability Testability hook\n     */\n    /**\n     * Registers an application with a testability hook so that it can be tracked\n     * @param {?} token token of application, root element\n     * @param {?} testability Testability hook\n     * @return {?}\n     */\n    TestabilityRegistry.prototype.registerApplication = /**\n     * Registers an application with a testability hook so that it can be tracked\n     * @param {?} token token of application, root element\n     * @param {?} testability Testability hook\n     * @return {?}\n     */\n    function (token, testability) {\n        this._applications.set(token, testability);\n    };\n    /**\n     * Unregisters an application.\n     * @param token token of application, root element\n     */\n    /**\n     * Unregisters an application.\n     * @param {?} token token of application, root element\n     * @return {?}\n     */\n    TestabilityRegistry.prototype.unregisterApplication = /**\n     * Unregisters an application.\n     * @param {?} token token of application, root element\n     * @return {?}\n     */\n    function (token) {\n        this._applications.delete(token);\n    };\n    /**\n     * Unregisters all applications\n     */\n    /**\n     * Unregisters all applications\n     * @return {?}\n     */\n    TestabilityRegistry.prototype.unregisterAllApplications = /**\n     * Unregisters all applications\n     * @return {?}\n     */\n    function () {\n        this._applications.clear();\n    };\n    /**\n     * Get a testability hook associated with the application\n     * @param elem root element\n     */\n    /**\n     * Get a testability hook associated with the application\n     * @param {?} elem root element\n     * @return {?}\n     */\n    TestabilityRegistry.prototype.getTestability = /**\n     * Get a testability hook associated with the application\n     * @param {?} elem root element\n     * @return {?}\n     */\n    function (elem) {\n        return this._applications.get(elem) || null;\n    };\n    /**\n     * Get all registered testabilities\n     */\n    /**\n     * Get all registered testabilities\n     * @return {?}\n     */\n    TestabilityRegistry.prototype.getAllTestabilities = /**\n     * Get all registered testabilities\n     * @return {?}\n     */\n    function () {\n        return Array.from(this._applications.values());\n    };\n    /**\n     * Get all registered applications(root elements)\n     */\n    /**\n     * Get all registered applications(root elements)\n     * @return {?}\n     */\n    TestabilityRegistry.prototype.getAllRootElements = /**\n     * Get all registered applications(root elements)\n     * @return {?}\n     */\n    function () {\n        return Array.from(this._applications.keys());\n    };\n    /**\n     * Find testability of a node in the Tree\n     * @param elem node\n     * @param findInAncestors whether finding testability in ancestors

```



```

platform and all Angular applications on the page.\n * @return {?}\n */\n PlatformRef.prototype.destroy =
/**\n * Destroy the Angular platform and all Angular applications on the page.\n * @return {?}\n */\n
function () {\n    if (this._destroyed) {\n        throw new Error('The platform has already been destroyed!');\n    }\n    this._modules.slice().forEach(function (module) { return module.destroy(); });\n    this._destroyListeners.forEach(function (listener) { return listener(); });\n    this._destroyed = true;\n};\n
Object.defineProperty(PlatformRef.prototype, 'destroyed', {\n    get: /**\n * @return {?}\n */\n
function () { return this._destroyed; },\n    enumerable: true,\n    configurable: true\n});\n
PlatformRef.decorators = [\n    { type: Injectable },\n];\n /** @nocollapse */\n PlatformRef.ctorParameters
= function () { return [\n    { type: Injector },\n];\n};\n return PlatformRef;\n})();\n\n/**\n * @param {?}=\n ngZoneOption\n * @return {?}\n */\n\nfunction getNgZone(ngZoneOption) {\n    var /** @type {?} */ ngZone;\n    if (ngZoneOption === 'noop') {\n        ngZone = new NoopNgZone();\n    } else {\n        ngZone = (ngZoneOption
=== 'zone.js' ? undefined : ngZoneOption) ||\n        new NgZone({ enableLongStackTrace: isDevMode() });\n    }\n    return ngZone;\n}\n\n/**\n * @param {?} errorHandler\n * @param {?} ngZone\n * @param {?} callback\n * @return {?}\n */\n\nfunction _callAndReportToErrorHandler(errorHandler, ngZone, callback) {\n    try {\n        var
/** @type {?} */ result = callback();\n        if (isPromise(result)) {\n            return result.catch(function (e) {\n
                ngZone.runOutsideAngular(function () { return errorHandler.handleError(e); });\n                // rethrow as the
exception handler might not do it\n                throw e;\n            });\n        }\n        return result;\n    } catch (**
@type {?} */ e) {\n        ngZone.runOutsideAngular(function () { return errorHandler.handleError(e); });\n        //
rethrow as the exception handler might not do it\n        throw e;\n    }\n}\n\n/**\n * @template T\n * @param {?}
dst\n * @param {?} objs\n * @return {?}\n */\n\nfunction optionsReducer(dst, objs) {\n    if (Array.isArray(objs)) {\n
        dst = objs.reduce(optionsReducer, dst);\n    } else {\n        dst = __assign({}, dst, (** @type {?} */
(objs)));\n    }\n    return dst;\n}\n\n/**\n * A reference to an Angular application running on a page.\n * @n
*\n * @stable\n * @nvar ApplicationRef = /** @class */ (function () {\n    /** @internal */\n    function
ApplicationRef(_zone, _console, _injector, _exceptionHandler, _componentFactoryResolver, _initStatus) {\n
        var _this = this;\n        this._zone = _zone;\n        this._console = _console;\n        this._injector = _injector;\n
        this._exceptionHandler = _exceptionHandler;\n        this._componentFactoryResolver =
        _componentFactoryResolver;\n        this._initStatus = _initStatus;\n        this._bootstrapListeners = [];\n
        this._views = [];\n        this._runningTick = false;\n        this._enforceNoNewChanges = false;\n        this._stable =
true;\n        /**\n * Get a list of component types registered to this application.\n * This list is populated
even before the component is created.\n * @n
*\n * @nvar this.componentTypes = [];\n        /**\n * Get a list of
components registered to this application.\n * @n
*\n * @nvar this.components = [];\n        this._enforceNoNewChanges
= isDevMode();\n        this._zone.onMicrotaskEmpty.subscribe({ next: function () { _this._zone.run(function () {
_this.tick(); }); });\n        var /** @type {?} */ isCurrentlyStable = new Observable(function (observer) {\n
            _this._stable = _this._zone.isStable && !_this._zone.hasPendingMacrotasks &&\n
            !_this._zone.hasPendingMicrotasks;\n            _this._zone.runOutsideAngular(function () {\n
                observer.next(_this._stable);\n                observer.complete();\n            });\n        });\n        var /** @type {?} */
isStable = new Observable(function (observer) {\n            // Create the subscription to onStable outside the Angular
Zone so that\n            // the callback is run outside the Angular Zone.\n            var /** @type {?} */ stableSub;\n
            _this._zone.runOutsideAngular(function () {\n                stableSub = _this._zone.onStable.subscribe(function () {\n
                    NgZone.assertNotInAngularZone();\n                    // Check whether there are no pending macro/micro
tasks in the next tick\n                    // to allow for NgZone to update the state.\n                    scheduleMicroTask(function () {\n
                        if (!_this._stable && !_this._zone.hasPendingMacrotasks &&\n
                            !_this._zone.hasPendingMicrotasks) {\n                            _this._stable = true;\n
                        }\n                    });\n                });\n                var /** @type {?} */
unstableSub = _this._zone.onUnstable.subscribe(function () {\n                    NgZone.assertInAngularZone();\n
                    if (!_this._stable) {\n                        _this._stable = false;\n                        _this._zone.runOutsideAngular(function () {\n
                            observer.next(false); });\n                    });\n                });\n                return function () {\n                    stableSub.unsubscribe();\n
                    unstableSub.unsubscribe();\n                });\n            });\n            (** @type {?} */ (this)).isStable =\n

```

```

merge(isCurrentlyStable, share.call(isStable));\n  }\n  /**\n   * Bootstrap a new component at the root level of
the application.\n   *\n   * ### Bootstrap process\n   *\n   * When bootstrapping a new root component into an
application, Angular mounts the\n   * specified application component onto DOM elements identified by the
[componentType]'s\n   * selector and kicks off automatic change detection to finish initializing the component.\n   *\n   * Optionally, a component can be mounted onto a DOM element that does not match the\n   *\n   * [componentType]'s selector.\n   *\n   * ### Example\n   * {\n   *   @example core/ts/platform/platform.ts
region='longform'}\n   * }\n   */\n   * Bootstrap a new component at the root level of the application.\n   *\n   * ### Bootstrap process\n   *\n   * When bootstrapping a new root component into an application, Angular mounts
the\n   * specified application component onto DOM elements identified by the [componentType]'s\n   * selector and kicks off automatic change detection to finish initializing the component.\n   *\n   * Optionally, a component can be mounted onto a DOM element that does not match the\n   * [componentType]'s selector.\n   *\n   * ### Example\n   * {\n   *   @example core/ts/platform/platform.ts region='longform'}\n   *   @template C\n   *   @param {?} componentOrFactory\n   *   @param {?} rootSelectorOrNode\n   *   @return {?}\n   * }\n   */\n   ApplicationRef.prototype.bootstrap = /**\n    * Bootstrap a new component at the root level of the application.\n    *\n    * ### Bootstrap process\n    *\n    * When bootstrapping a new root component into an application, Angular
mounts the\n    * specified application component onto DOM elements identified by the [componentType]'s\n    * selector and kicks off automatic change detection to finish initializing the component.\n    *\n    * Optionally, a component can be mounted onto a DOM element that does not match the\n    * [componentType]'s selector.\n    *\n    * ### Example\n    * {\n    *   @example core/ts/platform/platform.ts region='longform'}\n    *   @template C\n    *   @param {?} componentOrFactory\n    *   @param {?} rootSelectorOrNode\n    *   @return {?}\n    * }\n    */\n    function\n    (componentOrFactory, rootSelectorOrNode) {\n      var _this = this;\n      if (!this._initStatus.done) {\n        throw new Error('Cannot bootstrap as there are still asynchronous initializers running. Bootstrap components in the\n`ngDoBootstrap` method of the root module.');
```

```

second change detection cycle to ensure that no
 * further changes are detected. If additional changes are picked
up during this second cycle,
 * bindings in the app have side-effects that cannot be resolved in a single change
detection
 * pass.
 * In this case, Angular throws an error, since an Angular application can only have one
change
 * detection pass during which all change detection must complete.
 * @return {?}
 */
function () {
    var _this = this;
    if (this._runningTick) {
        throw new Error('ApplicationRef.tick is
called recursively');
    }
    var /** @type {?} */ scope = ApplicationRef._tickScope();
    try {
        this._runningTick = true;
        this._views.forEach(function (view) { return view.detectChanges(); });
        if (this._enforceNoNewChanges) {
            this._views.forEach(function (view) { return view.checkNoChanges();
});
        }
    }
    catch (/** @type {?} */ e) {
        // Attention: Don't rethrow as it could cancel
subscriptions to Observables!
        this._zone.runOutsideAngular(function () { return
_this._exceptionHandler.handleError(e); });
    }
    finally {
        this._runningTick = false;
        wtfLeave(scope);
    }
};
/**
 * Attaches a view so that it will be dirty checked.
 * The view will
be automatically detached when it is destroyed.
 * This will throw if the view is already attached to a
ViewContainer.
 */
/**
 * Attaches a view so that it will be dirty checked.
 * The view will be
automatically detached when it is destroyed.
 * This will throw if the view is already attached to a
ViewContainer.
 */
 * @param {?} viewRef
 * @return {?}
 */
ApplicationRef.prototype.attachView =
/**
 * Attaches a view so that it will be dirty checked.
 * The view will be automatically detached when it is
destroyed.
 * This will throw if the view is already attached to a ViewContainer.
 */
 * @param {?} viewRef
 * @return {?}
 */
function (viewRef) {
    var /** @type {?} */ view = (/** @type {?} */ (viewRef));
    this._views.push(view);
    view.attachToAppRef(this);
};
/**
 * Detaches a view from dirty
checking again.
 */
/**
 * Detaches a view from dirty checking again.
 */
 * @param {?} viewRef
 *
 * @return {?}
 */
ApplicationRef.prototype.detachView = /**
 * Detaches a view from dirty checking
again.
 */
 * @param {?} viewRef
 * @return {?}
 */
function (viewRef) {
    var /** @type {?} */
view = (/** @type {?} */ (viewRef));
    remove(this._views, view);
    view.detachFromAppRef();
};
/**
 * @param {?} componentRef
 * @return {?}
 */
ApplicationRef.prototype._loadComponent =
/**
 * @param {?} componentRef
 * @return {?}
 */
function (componentRef) {
    this.attachView(componentRef.hostView);
    this.tick();
    this.components.push(componentRef);
    //
Get the listeners lazily to prevent DI cycles.
    var /** @type {?} */ listeners =
this._injector.get(APP_BOOTSTRAP_LISTENER, []).concat(this._bootstrapListeners);
    listeners.forEach(function (listener) { return listener(componentRef); });
};
/**
 * @param {?}
componentRef
 * @return {?}
 */
ApplicationRef.prototype._unloadComponent = /**
 * @param {?}
componentRef
 * @return {?}
 */
function (componentRef) {
    this.detachView(componentRef.hostView);
    remove(this.components, componentRef);
};
/**
 * @internal
 */
/**
 * @internal
 */
 * @return {?}
 */
ApplicationRef.prototype.ngOnDestroy = /**
 *
 * @internal
 */
 * @return {?}
 */
function () {
    // TODO(alxhub): Dispose of the NgZone.
    this._views.slice().forEach(function (view) { return view.destroy(); });
};
Object.defineProperty(ApplicationRef.prototype, 'viewCount', {
    /**
 * Returns the number of
attached views.
 */
    get: /**
 * Returns the number of attached views.
 */
    * @return {?}
 */
function () { return this._views.length; },
    enumerable: true,
    configurable: true
});
/**
 * @internal
 */
ApplicationRef._tickScope = wtfCreateScope('ApplicationRef#tick()');
ApplicationRef.decorators = [
    { type: Injectable },
];
/** @nocollapse */
ApplicationRef.ctorParameters = function () { return [
    { type: NgZone },
    { type: Console },
    {
type: Injector },
    { type: ErrorHandler },
    { type: ComponentFactoryResolver },
    { type:
ApplicationInitStatus },
]; };
return ApplicationRef;
})();
/**
 * @template T
 */
 * @param {?} list
 *
 * @param {?} el
 * @return {?}
 */
function remove(list, el) {
    var /** @type {?} */ index = list.indexOf(el);
    if (index > -1) {
        list.splice(index, 1);
    }
}
/**
 * @fileoverview added by tsickle
 * @suppress
{checkTypes} checked by tsc
 */
/**
 * @license
 * Copyright Google Inc. All Rights Reserved.
 */
 * Use of
this source code is governed by an MIT-style license that can be
 * found in the LICENSE file at

```



```

https://angular.io/license\n *\n\n**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by
tsc\n *\n\n**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n\n**\n
* @deprecated Use `RendererType2` (and `Renderer2`) instead.\n *\n\nvar RenderComponentType = /** @class */
(function () {\n  function RenderComponentType(id, templateUrl, slotCount, encapsulation, styles, animations) {\n
    this.id = id;\n    this.templateUrl = templateUrl;\n    this.slotCount = slotCount;\n    this.encapsulation =
encapsulation;\n    this.styles = styles;\n    this.animations = animations;\n  }\n  return
RenderComponentType;\n})();\n\n**\n * @deprecated Debug info is handled internally in the view engine now.\n *
@abstract\n *\n\nvar RenderDebugInfo = /** @class */ (function () {\n  function RenderDebugInfo() {\n  }\n
return RenderDebugInfo;\n})();\n\n**\n * @deprecated Use the `Renderer2` instead.\n *\n * @record\n *\n\n**\n
* @deprecated Use the `Renderer2` instead.\n *\n * @abstract\n *\n\nvar Renderer = /** @class */ (function () {\n
function Renderer() {\n  }\n  return Renderer;\n})();\n\nvar Renderer2Interceptor = new
InjectionToken('Renderer2Interceptor');\n\n**\n * Injectable service that provides a low-level interface for modifying
the UI.\n *\n * Use this service to bypass Angular's templating and make custom UI changes that can't be\n *
expressed declaratively. For example if you need to set a property or an attribute whose name is\n * not statically
known, use {\@link Renderer#setElementProperty setElementProperty} or\n * {\@link
Renderer#setElementAttribute setElementAttribute} respectively.\n *\n * If you are implementing a custom
renderer, you must implement this interface.\n *\n * The default Renderer implementation is `DomRenderer`. Also
available is `WebWorkerRenderer`.\n *\n * @deprecated Use `RendererFactory2` instead.\n *\n * @abstract\n *\n\nvar
RootRenderer = /** @class */ (function () {\n  function RootRenderer() {\n  }\n  return
RootRenderer;\n})();\n\n**\n * \@\experimental\n * @record\n *\n\n**\n * \@\experimental\n * @abstract\n
*\n\nvar RendererFactory2 = /** @class */ (function () {\n  function RendererFactory2() {\n  }\n  return
RendererFactory2;\n})();\n\n**\n * @enum {number} *\n\nvar RendererStyleFlags2 = {\n  Important: 1,\n  DashCase:
2,\n};\n\nRendererStyleFlags2[RendererStyleFlags2.Important] =
`Important`;\n\nRendererStyleFlags2[RendererStyleFlags2.DashCase] = `DashCase`;\n\n**\n * \@\experimental\n
* @abstract\n *\n\nvar Renderer2 = /** @class */ (function () {\n  function Renderer2() {\n  }\n  return
Renderer2;\n})();\n\n\n**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
*\n\n**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n\n**\n
* @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n\n**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n
* found in the LICENSE file at https://angular.io/license\n *\n\n**\n * A wrapper around a native element inside of a
View.\n *\n * An `ElementRef` is backed by a render-specific element. In the browser, this is usually a DOM\n *
element.\n *\n * \@\security Permitting direct access to the DOM can make your application more vulnerable to\n *
XSS attacks. Carefully review any use of `ElementRef` in your code. For more detail, see the\n * [Security
Guide](http://g.co/ng/security).\n *\n * \@\stable\n *\n\nvar ElementRef = /** @class */ (function () {\n  function
ElementRef(nativeElement) {\n    this.nativeElement = nativeElement;\n  }\n  return
ElementRef;\n})();\n\n\n**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
*\n\n**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n\n**\n * Used to
load ng module factories.\n *\n * \@\stable\n * @abstract\n *\n\nvar NgModuleFactoryLoader = /** @class */ (function
() {\n  function NgModuleFactoryLoader() {\n  }\n  return NgModuleFactoryLoader;\n})();\n\nvar
moduleFactories = new Map();\n\n**\n * Registers a loaded module. Should only be called from generated
NgModuleFactory code.\n *\n * \@\experimental\n * @param {?} id\n * @param {?} factory\n * @return {?}\n
*\n\nfunction registerModuleFactory(id, factory) {\n  var /** @type {?} */ existing = moduleFactories.get(id);\n  if
(existing) {\n    throw new Error(`Duplicate module registered for ` + id + ` - ` + existing.moduleType.name +
` vs ` + factory.moduleType.name);\n  }\n  moduleFactories.set(id, factory);\n}\n\n**\n * @return {?}\n
*\n\n**\n * Returns the NgModuleFactory with the given id, if it exists and has been loaded.\n * Factories for

```

modules that do not specify an `id` cannot be retrieved. Throws if the module cannot be found.

```

@@experimental
@param {?} id
@return {?}
function getModuleFactory(id) {
  var /** @type {?} */
  factory = moduleFactories.get(id);
  if (!factory)
    throw new Error("No module with ID " + id + "
loaded");
  return factory;
}

```

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An unmodifiable list of items that Angular keeps up to date when the state of the application changes.
The type of object that `@@link ViewChildren`, `@@link ContentChildren`, and `@@link QueryList` provide.
Implements an iterable interface, therefore it can be used in both ES6 javascript `for (var i of items)` loops as well as in Angular templates with `*ngFor="let i of myList"`.
Changes can be observed by subscribing to the changes `Observable`.
NOTE: In the future this class will implement an `Observable` interface.

Example ([live demo](http://plnkr.co/edit/RX8sJnQYI9FWuSCWme5z?p=preview))

```

typescript
@Component({...})
class Container {
  @@ViewChildren(Item) items: QueryList<Item>;
}

```

```

@stable
nvar QueryList = /** @class */ (function () {
  function QueryList() {
    this.dirty = true;
    this._results = [];
    this.changes = new EventEmitter();
  }
  /** See [Array.map](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/map) */
  QueryList.prototype.map = /** See [Array.map](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/map) */
  @template U
  @param {?} fn
  @return {?}
  function (fn) { return this._results.map(fn); };
  /** See [Array.filter](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/filter) */
  QueryList.prototype.filter = /** See [Array.filter](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/filter) */
  @param {?} fn
  @return {?}
  function (fn) { return this._results.filter(fn); };
  /** See [Array.find](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/find) */
  QueryList.prototype.find = /** See [Array.find](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/find) */
  @param {?} fn
  @return {?}
  function (fn) { return this._results.find(fn); };
  /** See [Array.reduce](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/reduce) */
  QueryList.prototype.reduce = /** See [Array.reduce](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/reduce) */
  @template U
  @param {?} fn
  @param {?} init
  @return {?}
  function (fn, init) { return this._results.reduce(fn, init); };
  /** See [Array.forEach](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/forEach) */
  QueryList.prototype.forEach = /** See [Array.forEach](https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Array/forEach) */
  @param {?} fn
  @return {?}
  function (fn) { this._results.forEach(fn); };
  /** See

```



```

TemplateRef}s.\n *\n * The outer/inner {{@link TemplateRef}s are then assembled into views like so:\n *\n * ```\n
* <!-- ViewRef: outer-0 -->\n * Count: 2\n * <ul>\n * <ng-template view-container-ref></ng-template>\n * <!--
ViewRef: inner-1 --><li>first</li><!-- /ViewRef: inner-1 -->\n * <!-- ViewRef: inner-2 --><li>second</li><!--
/ViewRef: inner-2 -->\n * </ul>\n * <!-- /ViewRef: outer-0 -->\n * ```\n
*\n * @@experimental\n * @abstract\n *\nvar
EmbeddedViewRef = /** @class */ (function (_super) {\n __extends(EmbeddedViewRef, _super);\n function
EmbeddedViewRef() {\n return _super !== null && _super.apply(this, arguments) || this;\n }\n return
EmbeddedViewRef;\n})(ViewRef);\n/**\n * @record\n *\n *\n *\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n *\n *\n *\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
*\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n *\n *\n *\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by
tsc\n *\n *\n *\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\nvar
EventListener = /** @class */ (function () {\n function EventListener(name, callback) {\n this.name =
name;\n this.callback = callback;\n }\n return EventListener;\n})();\n/**\n * @@experimental All debugging
apis are currently experimental.\n *\nvar DebugNode = /** @class */ (function () {\n function
DebugNode(nativeNode, parent, _debugContext) {\n this._debugContext = _debugContext;\n
this.nativeNode = nativeNode;\n if (parent && parent instanceof DebugElement) {\n
parent.addChild(this);\n }\n else {\n this.parent = null;\n }\n this.listeners = [];\n }\n
Object.defineProperty(DebugNode.prototype, "injector", {\n get: /**\n * @return {?}\n *\n
function () { return this._debugContext.injector; },\n enumerable: true,\n configurable: true\n });\n
Object.defineProperty(DebugNode.prototype, "componentInstance", {\n get: /**\n * @return {?}\n
*\n function () { return this._debugContext.component; },\n enumerable: true,\n configurable: true\n
});\n Object.defineProperty(DebugNode.prototype, "context", {\n get: /**\n * @return {?}\n *\n
function () { return this._debugContext.context; },\n enumerable: true,\n configurable: true\n });\n
Object.defineProperty(DebugNode.prototype, "references", {\n get: /**\n * @return {?}\n *\n
function () { return this._debugContext.references; },\n enumerable: true,\n configurable: true\n });\n
Object.defineProperty(DebugNode.prototype, "providerTokens", {\n get: /**\n * @return {?}\n *\n
function () { return this._debugContext.providerTokens; },\n enumerable: true,\n configurable: true\n
});\n return DebugNode;\n})();\n/**\n * @@experimental All debugging apis are currently experimental.\n *\nvar
DebugElement = /** @class */ (function (_super) {\n __extends(DebugElement, _super);\n function
DebugElement(nativeNode, parent, _debugContext) {\n var _this = _super.call(this, nativeNode, parent,
_debugContext) || this;\n _this.properties = {};\n _this.attributes = {};\n _this.classes = {};\n
_this.styles = {};\n _this.childNodes = [];\n _this.nativeElement = nativeNode;\n return _this;\n }\n
/**\n * @param {?} child\n * @return {?}\n *\n DebugElement.prototype.addChild = /**\n * @param
{?} child\n * @return {?}\n *\n function (child) {\n if (child) {\n this.childNodes.push(child);\n
child.parent = this;\n }\n }\n /**\n * @param {?} child\n * @return {?}\n *\n
DebugElement.prototype.removeChild = /**\n * @param {?} child\n * @return {?}\n *\n function (child)
{\n var /** @type {?} */ childIndex = this.childNodes.indexOf(child);\n if (childIndex !== -1) {\n
child.parent = null;\n this.childNodes.splice(childIndex, 1);\n }\n }\n /**\n * @param {?} child\n
* @param {?} newChildren\n * @return {?}\n *\n DebugElement.prototype.insertChildrenAfter = /**\n
* @param {?} child\n * @param {?} newChildren\n * @return {?}\n *\n function (child, newChildren)
{\n var _this = this;\n var /** @type {?} */ siblingIndex = this.childNodes.indexOf(child);\n if
(siblingIndex !== -1) {\n (_a = this.childNodes).splice.apply(_a, [siblingIndex + 1,
0].concat(newChildren));\n newChildren.forEach(function (c) {\n if (c.parent) {\n
c.parent.removeChild(c);\n }\n c.parent = _this;\n });\n }\n var _a;\n }\n }\n /**\n
* @param {?} refChild\n * @param {?} newChild\n * @return {?}\n *\n
DebugElement.prototype.insertBefore = /**\n * @param {?} refChild\n * @param {?} newChild\n *
@return {?}\n *\n function (refChild, newChild) {\n var /** @type {?} */ refIndex =

```

```

this.childNodes.indexOf(refChild);\n    if (refIndex === -1) {\n        this.addChild(newChild);\n    }\n    else {\n        if (newChild.parent) {\n            newChild.parent.removeChild(newChild);\n        }\n        newChild.parent = this;\n        this.childNodes.splice(refIndex, 0, newChild);\n    }\n};\n\n/**\n * @param {?} predicate\n * @return {?}\n */\n\nDebugElement.prototype.query = /**\n * @param {?} predicate\n * @return {?}\n */\n\nfunction (predicate) {\n    var /** @type {?} */ results = this.queryAll(predicate);\n    return results[0] || null;\n};\n\n/**\n * @param {?} predicate\n * @return {?}\n */\n\nDebugElement.prototype.queryAll = /**\n * @param {?} predicate\n * @return {?}\n */\n\nfunction (predicate) {\n    var /** @type {?} */ matches = [];\n    _queryElementChildren(this, predicate, matches);\n    return matches;\n};\n\n/**\n * @param {?} predicate\n * @return {?}\n */\n\nDebugElement.prototype.queryAllNodes = /**\n * @param {?} predicate\n * @return {?}\n */\n\nfunction (predicate) {\n    var /** @type {?} */ matches = [];\n    _queryNodeChildren(this, predicate, matches);\n    return matches;\n};\n\nObject.defineProperty(DebugElement.prototype, 'children', {\n    get: /**\n * @return {?}\n */\n\nfunction () {\n    return /** @type {?} */ (this.childNodes.filter(function (node) {\n        return node instanceof DebugElement;\n    }));\n},\n    enumerable: true,\n    configurable: true\n});\n\n/**\n * @param {?} eventName\n * @param {?} eventObj\n * @return {?}\n */\n\nDebugElement.prototype.triggerEventHandler = /**\n * @param {?} eventName\n * @param {?} eventObj\n * @return {?}\n */\n\nfunction (eventName, eventObj) {\n    this.listeners.forEach(function (listener) {\n        if (listener.name === eventName) {\n            listener.callback(eventObj);\n        }\n    });\n    return DebugElement;\n}(DebugNode);\n\n/**\n * @experimental\n * @param {?} debugEls\n * @return {?}\n */\n\nfunction asNativeElements(debugEls) {\n    return debugEls.map(function (el) {\n        return el.nativeElement;\n    });\n}\n\n/**\n * @param {?} element\n * @param {?} predicate\n * @param {?} matches\n * @return {?}\n */\n\nfunction _queryElementChildren(element, predicate, matches) {\n    element.childNodes.forEach(function (node) {\n        if (node instanceof DebugElement) {\n            if (predicate(node)) {\n                matches.push(node);\n            }\n            _queryElementChildren(node, predicate, matches);\n        }\n    });\n}\n\n/**\n * @param {?} parentNode\n * @param {?} predicate\n * @param {?} matches\n * @return {?}\n */\n\nfunction _queryNodeChildren(parentNode, predicate, matches) {\n    if (parentNode instanceof DebugElement) {\n        parentNode.childNodes.forEach(function (node) {\n            if (predicate(node)) {\n                matches.push(node);\n            }\n            if (node instanceof DebugElement) {\n                _queryNodeChildren(node, predicate, matches);\n            }\n        });\n    }\n}\n\n// Need to keep the nodes in a global Map so that multiple angular apps are supported.\nvar _nativeNodeToDebugNode = new Map();\n\n/**\n * @experimental\n * @param {?} nativeNode\n * @return {?}\n */\n\nfunction getDebugNode(nativeNode) {\n    return _nativeNodeToDebugNode.get(nativeNode) || null;\n}\n\n/**\n * @return {?}\n */\n\nfunction indexDebugNode(node) {\n    _nativeNodeToDebugNode.set(node.nativeElement, node);\n}\n\n/**\n * @param {?} node\n * @return {?}\n */\n\nfunction removeDebugNodeFromIndex(node) {\n    _nativeNodeToDebugNode.delete(node.nativeElement);\n}\n\n/**\n * A boolean-valued function over a value, possibly including context information\n * regarding that value's position in an array.\n * @experimental All debugging apis are currently experimental.\n * @record\n * @fileoverview added by tsickle\n * @suppress {checkTypes}\n * checked by tsc\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at\n * https://angular.io/license\n * @param {?} a\n * @param {?} b\n * @return {?}\n */\n\nfunction devModeEqual(a, b) {\n    var /** @type {?} */ isListLikeIterableA = isListLikeIterable(a);\n    var /** @type {?} */ isListLikeIterableB = isListLikeIterable(b);\n    if (isListLikeIterableA && isListLikeIterableB) {\n        return areIterablesEqual(a, b, devModeEqual);\n    }\n    else {\n        var /** @type {?} */ isAObject = a && (typeof a === 'object' || typeof a === 'function');\n        var /** @type {?} */ isBObject = b && (typeof b === 'object' || typeof b === 'function');\n        if (!isListLikeIterableA && isAObject && !isListLikeIterableB && isBObject) {\n            return true;\n        }\n        else {\n            return looseIdentical(a, b);\n        }\n    }\n}\n\n/**\n * Indicates that the result of a {@link Pipe} transformation has changed even though the\n * reference has not changed.\n */

```

```

Wrapped values are unwrapped automatically during the change detection, and the unwrapped value is stored.
Example:
if (this._latestValue === this._latestReturnedValue) {
  return this._latestReturnedValue;
} else {
  this._latestReturnedValue = this._latestValue;
  return WrappedValue.wrap(this._latestValue); // this will force update
}

/** @class */ (function () {
  function WrappedValue(value) {
    this.wrapped = value;
  }
  /** Creates a wrapped value.
   * @param {?} value
   * @return {?}
   */
  WrappedValue.wrap = /**
   * Creates a wrapped value.
   * @param {?} value
   * @return {?}
   */
  function (value) {
    return new WrappedValue(value);
  };
  /** Returns the underlying value of a wrapped value.
   * Returns the given `value` when it is not wrapped.
   * @param {?} value
   * @return {?}
   */
  WrappedValue.unwrap = /**
   * Returns the underlying value of a wrapped value.
   * Returns the given `value` when it is not wrapped.
   * @param {?} value
   * @return {?}
   */
  function (value) {
    return WrappedValue.isWrapped(value) ? value.wrapped : value;
  };
  /** Returns true if `value` is a wrapped value.
   * Returns true if `value` is a wrapped value.
   * @param {?} value
   * @return {?}
   */
  WrappedValue.isWrapped = /**
   * Returns true if `value` is a wrapped value.
   * @param {?} value
   * @return {?}
   */
  function (value) {
    return value instanceof WrappedValue;
  };
  return WrappedValue;
})();

/** Represents a basic change from a previous to a new value.
 * @stable
 * @nvar SimpleChange = /** @class */ (function () {
  function SimpleChange(previousValue, currentValue, firstChange) {
    this.previousValue = previousValue;
    this.currentValue = currentValue;
    this.firstChange = firstChange;
  }
  /** Check whether the new value is the first value assigned.
   * Check whether the new value is the first value assigned.
   * @return {?}
   */
  SimpleChange.prototype.isFirstChange = /**
   * Check whether the new value is the first value assigned.
   * @return {?}
   */
  function () {
    return this.firstChange;
  };
  return SimpleChange;
})();

/** @param {?} obj
 * @return {?}
 */
function isListLikeIterable(obj) {
  if (!isObject(obj)) {
    return false;
  }
  return Array.isArray(obj) || (!obj instanceof Map) && // JS Map are iterables but return entries as [k, v]
  // JS Map are iterables but return entries as [k, v]
  getSymbolIterator() in obj; // JS Iterable have a
  Symbol.iterator prop
}

/** @param {?} a
 * @param {?} b
 * @param {?} comparator
 * @return {?}
 */
function areIterablesEqual(a, b, comparator) {
  var iterator1 = a[getSymbolIterator]();
  var iterator2 = b[getSymbolIterator]();
  while (true) {
    var item1 = iterator1.next();
    var item2 = iterator2.next();
    if (item1.done && item2.done) {
      return true;
    }
    if (item1.done || item2.done) {
      return false;
    }
    if (!comparator(item1.value, item2.value)) {
      return false;
    }
  }
}

/** @param {?} obj
 * @param {?} fn
 * @return {?}
 */
function iterateListLike(obj, fn) {
  if (Array.isArray(obj)) {
    for (var i = 0; i < obj.length; i++) {
      fn(obj[i]);
    }
  } else {
    var iterator = obj[getSymbolIterator]();
    var item = void 0;
    while (!(item = iterator.next()).done) {
      fn(item.value);
    }
  }
}

/** @param {?} o
 * @return {?}
 */
function isJsObject(o) {
  return o !== null && (typeof o === 'function' || typeof o === 'object');
}

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@nvar DefaultIterableDifferFactory = /** @class */ (function () {
  function DefaultIterableDifferFactory() {}
  /** @param {?} obj
   * @return {?}
   */
  DefaultIterableDifferFactory.prototype.supports = /**
   * @param {?} obj
   * @return {?}
   */
  function (obj) {
    return isListLikeIterable(obj);
  };
  /** @template V
   * @param {?} trackByFn
   * @return {?}
   */
  DefaultIterableDifferFactory.prototype.create = /**
   * @template V
   * @param {?} trackByFn
   * @return {?}
   */
  function (trackByFn) {
    return new DefaultIterableDiffer(trackByFn);
  };
  return DefaultIterableDifferFactory;
})();

@nvar trackByIdentity = function (index, item) {
  return item;
};

@deprecated v4.0.0 - Should not be part of public API
@nvar DefaultIterableDiffer = /** @class */ (function () {
  function DefaultIterableDiffer(trackByFn) {}

```

```

this.length = 0;\n    this._linkedRecords = null;\n    this._unlinkedRecords = null;\n    this._previousItHead =
null;\n    this._itHead = null;\n    this._itTail = null;\n    this._additionsHead = null;\n    this._additionsTail
= null;\n    this._movesHead = null;\n    this._movesTail = null;\n    this._removalsHead = null;\n
this._removalsTail = null;\n    this._identityChangesHead = null;\n    this._identityChangesTail = null;\n
this._trackByFn = trackByFn || trackByIdentity;\n    }\n    /**\n     * @param {?} fn\n     * @return {?}\n     */\n    DefaultIterableDiffer.prototype.forEachItem = /**\n     * @param {?} fn\n     * @return {?}\n     */\n     function (fn)
{\n     var /** @type {?} */ record;\n     for (record = this._itHead; record !== null; record = record._next) {\n
fn(record);\n     }\n     };\n     /**\n     * @param {?} fn\n     * @return {?}\n     */\n     function (fn) {\n     var /** @type {?} */ nextIt = this._itHead;\n     var /** @type {?} */ nextRemove =
this._removalsHead;\n     var /** @type {?} */ addRemoveOffset = 0;\n     var /** @type {?} */ moveOffsets =
null;\n     while (nextIt || nextRemove) {\n     // Figure out which is the next record to process\n     //
Order: remove, add, move\n     var /** @type {?} */ record = !nextRemove ||\n     nextIt && /** @type
{?} */ ((nextIt.currentIndex) < getPreviousIndex(nextRemove, addRemoveOffset, moveOffsets)) ? /** @type {?}
*/\n     ((nextIt) : \n     nextRemove;\n     var /** @type {?} */ adjPreviousIndex =
getPreviousIndex(record, addRemoveOffset, moveOffsets);\n     var /** @type {?} */ currentIndex =
record.currentIndex;\n     // consume the item, and adjust the addRemoveOffset and update moveDistance if
necessary\n     if (record === nextRemove) {\n     addRemoveOffset--;\n     nextRemove =
nextRemove._nextRemoved;\n     }\n     else {\n     nextIt = /** @type {?} */ ((nextIt)._next);\n     if (record.previousIndex == null) {\n     addRemoveOffset++;\n     }\n     else {\n
// INVARIANT: currentIndex < previousIndex\n     if (!moveOffsets)\n     moveOffsets =
[];\n     var /** @type {?} */ localMovePreviousIndex = adjPreviousIndex - addRemoveOffset;\n     var /** @type {?} */ localCurrentIndex = /** @type {?} */ ((currentIndex) - addRemoveOffset);\n     if
(localMovePreviousIndex != localCurrentIndex) {\n     for (var /** @type {?} */ i = 0; i <
localMovePreviousIndex; i++) {\n     var /** @type {?} */ offset = i < moveOffsets.length ?
moveOffsets[i] : (moveOffsets[i] = 0);\n     var /** @type {?} */ index = offset + i;\n     if (localCurrentIndex <= index && index < localMovePreviousIndex) {\n     moveOffsets[i] =
offset + 1;\n     }\n     }\n     }\n     var /** @type {?} */ previousIndex =
record.previousIndex;\n     moveOffsets[previousIndex] = localCurrentIndex -
localMovePreviousIndex;\n     }\n     }\n     }\n     }\n     if (adjPreviousIndex !== currentIndex)
{\n     fn(record, adjPreviousIndex, currentIndex);\n     }\n     }\n     };\n     /**\n     * @param {?} fn\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype.forEachPreviousItem = /**\n     * @param {?} fn\n     *
@return {?}\n     */\n     function (fn) {\n     var /** @type {?} */ record;\n     for (record = this._previousItHead;\n     record !== null; record = record._nextPrevious) {\n     fn(record);\n     }\n     };\n     /**\n     * @param {?} fn\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype.forEachAddedItem = /**\n     * @param {?} fn\n     *
@return {?}\n     */\n     function (fn) {\n     var /** @type {?} */ record;\n     for (record = this._additionsHead;\n     record !== null; record = record._nextAdded) {\n     fn(record);\n     }\n     };\n     /**\n     * @param {?} fn\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype.forEachMovedItem = /**\n     * @param {?} fn\n     *
@return {?}\n     */\n     function (fn) {\n     var /** @type {?} */ record;\n     for (record = this._movesHead;\n     record !== null; record = record._nextMoved) {\n     fn(record);\n     }\n     };\n     /**\n     * @param {?} fn\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype.forEachRemovedItem = /**\n     * @param {?} fn\n     *
@return {?}\n     */\n     function (fn) {\n     var /** @type {?} */ record;\n     for (record = this._removalsHead;\n     record !== null; record = record._nextRemoved) {\n     fn(record);\n     }\n     };\n     /**\n     * @param {?} fn\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype.forEachIdentityChange = /**\n     * @param {?} fn\n     * @return {?}\n     */\n     function (fn) {\n     var /** @type {?} */ record;\n     for (record =
this._identityChangesHead; record !== null; record = record._nextIdentityChange) {\n     fn(record);\n     }\n     };\n     /**\n     * @param {?} collection\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype.diff = /**\n     * @param {?} collection\n     * @return {?}\n     */\n     function (collection) {\n     if (collection == null)\n
```



```

collection = [];\n    if (!isListLikeIterable(collection)) {\n        throw new Error("Error trying to diff \"" +
stringify(collection) + "\". Only arrays and iterables are allowed");\n    }\n    if (this.check(collection)) {\n
return this;\n    }\n    else {\n        return null;\n    }\n};\n /**\n * @return {?}\n */\n
DefaultIterableDiffer.prototype.onDestroy = /**\n * @return {?}\n */\n function () {\n /**\n *
@param {?} collection\n * @return {?}\n */\n DefaultIterableDiffer.prototype.check = /**\n * @param
{?} collection\n * @return {?}\n */\n function (collection) {\n    var _this = this;\n    this._reset();\n
var /** @type {?} */ record = this._itHead;\n    var /** @type {?} */ maybeDirty = false;\n    var /** @type
{?} */ index;\n    var /** @type {?} */ item;\n    var /** @type {?} */ itemTrackBy;\n    if
(Array.isArray(collection)) {\n        /** @type {?} */ (this).length = collection.length;\n        for (var /**
@type {?} */ index_1 = 0; index_1 < this.length; index_1++) {\n            item = collection[index_1];\n
itemTrackBy = this._trackByFn(index_1, item);\n            if (record === null || !looseIdentical(record.trackById,
itemTrackBy)) {\n                record = this._mismatch(record, item, itemTrackBy, index_1);\n
maybeDirty = true;\n            }\n            else {\n                if (maybeDirty) {\n                    //
TODO(misko): can we limit this to duplicates only?\n                    record = this._verifyReinsertion(record, item,
itemTrackBy, index_1);\n                }\n                if (!looseIdentical(record.item, item))\n
this._addIdentityChange(record, item);\n                }\n                record = record._next;\n            }\n        }
else {\n            index = 0;\n            iterateListLike(collection, function (item) {\n                itemTrackBy =
_this._trackByFn(index, item);\n                if (record === null || !looseIdentical(record.trackById, itemTrackBy)) {\n
                    record = _this._mismatch(record, item, itemTrackBy, index);\n                    maybeDirty = true;\n
                }\n                else {\n                    if (maybeDirty) {\n                        // TODO(misko): can we limit this to duplicates
only?\n                        record = _this._verifyReinsertion(record, item, itemTrackBy, index);\n                    }\n
                    if (!looseIdentical(record.item, item))\n                        _this._addIdentityChange(record, item);\n                }\n
                record = record._next;\n                index++;\n            });\n            /** @type {?} */ (this).length = index;\n
}\n        this._truncate(record);\n        /** @type {?} */ (this).collection = collection;\n        return this.isDirty;\n
};\n    Object.defineProperty(DefaultIterableDiffer.prototype, "isDirty", {\n        /* CollectionChanges is
considered dirty if it has any additions, moves, removals, or identity\n        * changes.\n        */\n        get: /**\n
* @return {?}\n        */\n        function () {\n            return this._additionsHead !== null || this._movesHead !== null ||
this._removalsHead !== null || this._identityChangesHead !== null;\n        },\n        enumerable: true,\n
configurable: true\n    });\n    /**\n     * Reset the state of the change objects to show no changes. This means set
previousKey to\n     * currentKey, and clear all of the queues (additions, moves, removals).\n     * Set the
previousIndexes of moved and added items to their currentIndexes\n     * Reset the list of additions, moves and
removals\n     */\n     * @internal\n     */\n     /**\n     * Reset the state of the change objects to show no changes. This
means set previousKey to\n     * currentKey, and clear all of the queues (additions, moves, removals).\n     * Set the
previousIndexes of moved and added items to their currentIndexes\n     * Reset the list of additions, moves and
removals\n     */\n     * @internal\n     * @return {?}\n     */\n     DefaultIterableDiffer.prototype._reset = /**\n
Reset the state of the change objects to show no changes. This means set previousKey to\n     * currentKey, and
clear all of the queues (additions, moves, removals).\n     * Set the previousIndexes of moved and added items to
their currentIndexes\n     * Reset the list of additions, moves and removals\n     */\n     * @internal\n     * @return
{?}\n     */\n     function () {\n        if (this.isDirty) {\n            var /** @type {?} */ record = void 0;\n            var /**
@type {?} */ nextRecord = void 0;\n            for (record = this._previousItHead = this._itHead; record !== null;
record = record._next) {\n                record._nextPrevious = record._next;\n            }\n            for (record =
this._additionsHead; record !== null; record = record._nextAdded) {\n                record.previousIndex =
record.currentIndex;\n            }\n            this._additionsHead = this._additionsTail = null;\n            for (record =
this._movesHead; record !== null; record = nextRecord) {\n                record.previousIndex = record.currentIndex;\n
                nextRecord = record._nextMoved;\n            }\n            this._movesHead = this._movesTail = null;\n
            this._removalsHead = this._removalsTail = null;\n            this._identityChangesHead = this._identityChangesTail =
null;\n            // todo(vicb) when assert gets supported\n            // assert(!this.isDirty);\n        }\n    };
}\n /**\n *
This is the core function which handles differences between collections.\n     */\n     * - `record` is the record which

```

```

we saw at this position last time. If null then it is a new\n
 * item.\n
 * - `item` is the current item in the
collection\n
 * - `index` is the position of the item in the collection\n
 * \n
 * @internal\n
 * \n
/**\n
 *
This is the core function which handles differences between collections.\n
 * \n
 * - `record` is the record which
we saw at this position last time. If null then it is a new\n
 * item.\n
 * - `item` is the current item in the
collection\n
 * - `index` is the position of the item in the collection\n
 * \n
 * \n
 * @internal\n
 * @param {?}
record\n
 * @param {?} item\n
 * @param {?} itemTrackBy\n
 * @param {?} index\n
 * @return {?}\n
 * \n
DefaultIterableDiffer.prototype._mismatch = /**\n
 * This is the core function which handles differences
between collections.\n
 * \n
 * - `record` is the record which we saw at this position last time. If null then it is a
new\n
 * item.\n
 * - `item` is the current item in the collection\n
 * - `index` is the position of the item in the
collection\n
 * \n
 * \n
 * @internal\n
 * @param {?} record\n
 * @param {?} item\n
 * @param {?}
itemTrackBy\n
 * @param {?} index\n
 * @return {?}\n
 * \n
function (record, item, itemTrackBy, index)
{\n
 // The previous record after which we will append the current one.\n
 var /** @type {?} */
previousRecord;\n
 if (record === null) {\n
 previousRecord = this._itTail;\n
 } else {\n
previousRecord = record._prev;\n
 // Remove the record from the collection since we know it does not match
the item.\n
 this._remove(record);\n
 } \n
 // Attempt to see if we have seen the item before.\n
record = this._linkedRecords === null ? null : this._linkedRecords.get(itemTrackBy, index);\n
 if (record !==
null) {\n
 // We have seen this before, we need to move it forward in the collection.\n
 // But first we
need to check if identity changed, so we can update in view if necessary\n
 if (!looseIdentical(record.item,
item))\n
 this._addIdentityChange(record, item);\n
 this._moveAfter(record, previousRecord,
index);\n
 } \n
 else {\n
 // Never seen it, check evicted list.\n
 record = this._unlinkedRecords
=== null ? null : this._unlinkedRecords.get(itemTrackBy, null);\n
 if (record !== null) {\n
 // It is an
item which we have evicted earlier: reinsert it back into the list.\n
 // But first we need to check if identity
changed, so we can update in view if necessary\n
 if (!looseIdentical(record.item, item))\n
this._addIdentityChange(record, item);\n
 this._reinsertAfter(record, previousRecord, index);\n
 } \n
 else {\n
 // It is a new item: add it.\n
 record =\n
 this._addAfter(new
IterableChangeRecord_(item, itemTrackBy), previousRecord, index);\n
 } \n
 } \n
 return record;\n
};\n
/**\n
 * This check is only needed if an array contains duplicates. (Short circuit of nothing dirty)\n
 * \n
 * Use case: `[a, a] => [b, a, a]`\n
 * \n
 * If we did not have this check then the insertion of `b` would:\n
 * 1)
evict first `a`\n
 * 2) insert `b` at `0` index.\n
 * 3) leave `a` at index `1` as is. <-- this is wrong!\n
 * 3)
reinsert `a` at index 2. <-- this is wrong!\n
 * \n
 * The correct behavior is:\n
 * 1) evict first `a`\n
 * 2)
insert `b` at `0` index.\n
 * 3) reinsert `a` at index 1.\n
 * 3) move `a` at from `1` to `2`.\n
 * \n
 * \n
 * Double check that we have not evicted a duplicate item. We need to check if the item type may\n
 * have already
been removed:\n
 * The insertion of b will evict the first 'a'. If we don't reinsert it now it will be reinserted\n
 * at
the end. Which will show up as the two 'a's switching position. This is incorrect, since a\n
 * better way to think of
it is as insert of 'b' rather than switch 'a' with 'b' and then add 'a'\n
 * at the end.\n
 * \n
 * @internal\n
 * \n
 * \n
/**\n
 * This check is only needed if an array contains duplicates. (Short circuit of nothing dirty)\n
 * \n
 * Use
case: `[a, a] => [b, a, a]`\n
 * \n
 * If we did not have this check then the insertion of `b` would:\n
 * 1) evict
first `a`\n
 * 2) insert `b` at `0` index.\n
 * 3) leave `a` at index `1` as is. <-- this is wrong!\n
 * 3) reinsert
`a` at index 2. <-- this is wrong!\n
 * \n
 * The correct behavior is:\n
 * 1) evict first `a`\n
 * 2) insert `b` at
`0` index.\n
 * 3) reinsert `a` at index 1.\n
 * 3) move `a` at from `1` to `2`.\n
 * \n
 * \n
 * Double check
that we have not evicted a duplicate item. We need to check if the item type may\n
 * have already been
removed:\n
 * The insertion of b will evict the first 'a'. If we don't reinsert it now it will be reinserted\n
 * at
the end. Which will show up as the two 'a's switching position. This is incorrect, since a\n
 * better way to think of it is
as insert of 'b' rather than switch 'a' with 'b' and then add 'a'\n
 * at the end.\n
 * \n
 * \n
 * \n
 * @internal\n
 * @param
{?} record\n
 * @param {?} item\n
 * @param {?} itemTrackBy\n
 * @param {?} index\n
 * @return {?}\n
 * \n
DefaultIterableDiffer.prototype._verifyReinsertion = /**\n
 * This check is only needed if an array
contains duplicates. (Short circuit of nothing dirty)\n
 * \n
 * Use case: `[a, a] => [b, a, a]`\n
 * \n
 * If we did
not have this check then the insertion of `b` would:\n
 * 1) evict first `a`\n
 * 2) insert `b` at `0` index.\n
 *

```



```

*^n /**^n * \\@internal^n * @param {?} record^n * @param {?} prevRecord^n * @param {?} index^n
* @return {?}^n *^n DefaultIterableDiffer.prototype._insertAfter = /**^n * \\@internal^n * @param {?}
record^n * @param {?} prevRecord^n * @param {?} index^n * @return {?}^n *^n function (record,
prevRecord, index) {^n // todo(vicb)^n // assert(record !== prevRecord);^n // assert(record._next ===
null);^n // assert(record._prev === null);^n var /** @type {?} */ next = prevRecord === null ? this._itHead :
prevRecord._next;^n // todo(vicb)^n // assert(next !== record);^n // assert(prevRecord !== record);^n
record._next = next;^n record._prev = prevRecord;^n if (next === null) {^n this._itTail = record;^n
}^n else {^n next._prev = record;^n }^n if (prevRecord === null) {^n this._itHead =
record;^n }^n else {^n prevRecord._next = record;^n }^n if (this._linkedRecords === null) {^n
this._linkedRecords = new _DuplicateMap();^n }^n this._linkedRecords.put(record);^n
record.currentIndex = index;^n return record;^n };^n /** @internal *^n /**^n * \\@internal^n *
@param {?} record^n * @return {?}^n *^n DefaultIterableDiffer.prototype._remove = /**^n *
\\@internal^n * @param {?} record^n * @return {?}^n *^n function (record) {^n return
this._addToRemovals(this._unlink(record));^n };^n /** @internal *^n /**^n * \\@internal^n * @param {?}
record^n * @return {?}^n *^n DefaultIterableDiffer.prototype._unlink = /**^n * \\@internal^n * @param
{?} record^n * @return {?}^n *^n function (record) {^n if (this._linkedRecords !== null) {^n
this._linkedRecords.remove(record);^n }^n var /** @type {?} */ prev = record._prev;^n var /** @type
{?} */ next = record._next;^n // todo(vicb)^n // assert((record._prev = null) === null);^n //
assert((record._next = null) === null);^n if (prev === null) {^n this._itHead = next;^n }^n else {^n
prev._next = next;^n }^n if (next === null) {^n this._itTail = prev;^n }^n else {^n
next._prev = prev;^n }^n return record;^n };^n /** @internal *^n /**^n * \\@internal^n * @param
{?} record^n * @param {?} toIndex^n * @return {?}^n *^n DefaultIterableDiffer.prototype._addToMoves
= /**^n * \\@internal^n * @param {?} record^n * @param {?} toIndex^n * @return {?}^n *^n
function (record, toIndex) {^n // todo(vicb)^n // assert(record._nextMoved === null);^n if
(record.previousIndex === toIndex) {^n return record;^n }^n if (this._movesTail === null) {^n
// todo(vicb)^n // assert(_movesHead === null);^n this._movesTail = this._movesHead = record;^n
}^n else {^n // todo(vicb)^n // assert(_movesTail._nextMoved === null);^n this._movesTail
= this._movesTail._nextMoved = record;^n }^n return record;^n };^n /**^n * @param {?} record^n *
@return {?}^n *^n DefaultIterableDiffer.prototype._addToRemovals = /**^n * @param {?} record^n *
@return {?}^n *^n function (record) {^n if (this._unlinkedRecords === null) {^n
this._unlinkedRecords = new _DuplicateMap();^n }^n this._unlinkedRecords.put(record);^n
record.currentIndex = null;^n record._nextRemoved = null;^n if (this._removalsTail === null) {^n //
todo(vicb)^n // assert(_removalsHead === null);^n this._removalsTail = this._removalsHead =
record;^n record._prevRemoved = null;^n }^n else {^n // todo(vicb)^n //
assert(_removalsTail._nextRemoved === null);^n // assert(record._nextRemoved === null);^n
record._prevRemoved = this._removalsTail;^n this._removalsTail = this._removalsTail._nextRemoved =
record;^n }^n return record;^n };^n /** @internal *^n /**^n * \\@internal^n * @param {?}
record^n * @param {?} item^n * @return {?}^n *^n DefaultIterableDiffer.prototype._addIdentityChange =
/**^n * \\@internal^n * @param {?} record^n * @param {?} item^n * @return {?}^n *^n function
(record, item) {^n record.item = item;^n if (this._identityChangesTail === null) {^n
this._identityChangesTail = this._identityChangesHead = record;^n }^n else {^n
this._identityChangesTail = this._identityChangesTail._nextIdentityChange = record;^n }^n return record;^n
};^n return DefaultIterableDiffer;^n})();^n /**^n * \\@stable^n *^n var IterableChangeRecord_ = /** @class */
(function () {^n function IterableChangeRecord_(item, trackById) {^n this.item = item;^n this.trackById =
trackById;^n this.currentIndex = null;^n this.previousIndex = null;^n /**^n * \\@internal^n *^n
this._nextPrevious = null;^n /**^n * \\@internal^n *^n this._prev = null;^n /**^n *
\\@internal^n *^n this._next = null;^n /**^n * \\@internal^n *^n this._prevDup = null;^n
/**^n * \\@internal^n *^n this._nextDup = null;^n /**^n * \\@internal^n *^n

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this._prevRemoved = null;\n      /**\n      * \\@internal\n      */\n      this._nextRemoved = null;\n      /**\n      * \\@internal\n      */\n      this._nextAdded = null;\n      /**\n      * \\@internal\n      */\n      this._nextMoved = null;\n      /**\n      * \\@internal\n      */\n      this._nextIdentityChange = null;\n    }\n    return IterableChangeRecord_.\n  }());\n  nvar _DuplicateItemRecordList = /** @class */ (function () {\n    function\n    _DuplicateItemRecordList() {\n      /**\n      * \\@internal\n      */\n      this._head = null;\n      /**\n      * \\@internal\n      */\n      this._tail = null;\n    }\n    /**\n     * Append the record to the list of duplicates.\n     *\n     * Note: by design all records in the list of duplicates hold the same value in record.item.\n     */\n    Append the record to the list of duplicates.\n     *\n     * Note: by design all records in the list of duplicates hold the\n     same value in record.item.\n     * @param {?} record\n     * @return {?}\n     */\n    _DuplicateItemRecordList.prototype.add = /**\n     * Append the record to the list of duplicates.\n     *\n     * Note:\n     by design all records in the list of duplicates hold the same value in record.item.\n     * @param {?} record\n     * @return {?}\n     */\n     function (record) {\n       if (this._head === null) {\n         this._head = this._tail =\n         record;\n         record._nextDup = null;\n         record._prevDup = null;\n       }\n       else {\n         /** @type\n         {?} */ (\n           // todo(vicb)\n           // assert(record.item == _head.item ||\n           // record.item is num &&\n           record.item.isNaN && _head.item is num && _head.item.isNaN);\n         this._tail)._nextDup = record;\n         record._prevDup = this._tail;\n         record._nextDup = null;\n         this._tail = record;\n       }\n     };\n    //\n    Returns a IterableChangeRecord_ having IterableChangeRecord_.trackById == trackById and\n    //\n    IterableChangeRecord_.currentIndex >= atOrAfterIndex\n    /**\n     * @param {?} trackById\n     * @param {?} atOrAfterIndex\n     * @return {?}\n     */\n     _DuplicateItemRecordList.prototype.get = /**\n     * @param {?} trackById\n     * @param {?} atOrAfterIndex\n     * @return {?}\n     */\n     function (trackById, atOrAfterIndex)\n     {\n       var /** @type {?} */ record;\n       for (record = this._head; record !== null; record = record._nextDup) {\n         if ((atOrAfterIndex === null || atOrAfterIndex <= /** @type {?} */ ((record.currentIndex))) &&\n         looseIdentical(record.trackById, trackById)) {\n           return record;\n         }\n       }\n       return null;\n     };\n    /**\n     * Remove one {@link IterableChangeRecord_} from the list of duplicates.\n     *\n     * Returns\n     whether the list of duplicates is empty.\n     */\n     /**\n     * Remove one {@link IterableChangeRecord_} from the\n     list of duplicates.\n     *\n     * Returns whether the list of duplicates is empty.\n     * @param {?} record\n     * @return {?}\n     */\n     _DuplicateItemRecordList.prototype.remove = /**\n     * Remove one {@link\n     IterableChangeRecord_} from the list of duplicates.\n     *\n     * Returns whether the list of duplicates is empty.\n     * @param {?} record\n     * @return {?}\n     */\n     function (record) {\n       // todo(vicb)\n       // assert()\n       {\n         // verify that the record being removed is in the list.\n         // for (IterableChangeRecord_ cursor = _head; cursor\n         != null; cursor = cursor._nextDup) {\n           // if (identical(cursor, record)) return true;\n           // }\n           // return\n           false;\n         //});\n         var /** @type {?} */ prev = record._prevDup;\n         var /** @type {?} */ next =\n         record._nextDup;\n         if (prev === null) {\n           this._head = next;\n         }\n         else {\n           prev._nextDup\n           = next;\n         }\n         if (next === null) {\n           this._tail = prev;\n         }\n         else {\n           next._prevDup =\n           prev;\n         }\n         return this._head === null;\n       };\n       return _DuplicateItemRecordList;\n     }());\n     nvar\n     _DuplicateMap = /** @class */ (function () {\n       function _DuplicateMap() {\n         this.map = new Map();\n       }\n       /**\n        * @param {?} record\n        * @return {?}\n        */\n        _DuplicateMap.prototype.put = /**\n        * @param {?} record\n        * @return {?}\n        */\n        function (record) {\n          var /** @type {?} */ key = record.trackById;\n          var /** @type {?} */ duplicates = this.map.get(key);\n          if (!duplicates) {\n            duplicates = new\n            _DuplicateItemRecordList();\n            this.map.set(key, duplicates);\n          }\n          duplicates.add(record);\n        };\n       /**\n        * Retrieve the `value` using key. Because the IterableChangeRecord_ value may be one which we\n        * have already iterated over, we use the `atOrAfterIndex` to pretend it is not there.\n        *\n        * Use case: `[a, b, c, a, a]` if we are at index `3` which is the second `a` then asking if we\n        * have any more `a`s needs to return the\n        second `a`.\n        */\n        /**\n        * Retrieve the `value` using key. Because the IterableChangeRecord_ value may be\n        one which we\n        * have already iterated over, we use the `atOrAfterIndex` to pretend it is not there.\n        *\n        * Use case: `[a, b, c, a, a]` if we are at index `3` which is the second `a` then asking if we\n        * have any more `a`s\n        needs to return the second `a`.\n        * @param {?} trackById\n        * @param {?} atOrAfterIndex\n        * @return\n        {?}\n        */\n        _DuplicateMap.prototype.get = /**\n        * Retrieve the `value` using key. Because the

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IterableChangeRecord_ value may be one which we
 * have already iterated over, we use the `atOrAfterIndex`
to pretend it is not there.
 * Use case: `[a, b, c, a, a]` if we are at index `3` which is the second `a` then
asking if we
 * have any more `a`s needs to return the second `a`.
 * @param {?} trackById
 * @param
 {?} atOrAfterIndex
 * @return {?}
 * ^ function (trackById, atOrAfterIndex) {
 *   var /** @type {?} */
 * key = trackById;
 *   var /** @type {?} */ recordList = this.map.get(key);
 *   return recordList ?
recordList.get(trackById, atOrAfterIndex) : null;
 * };
 * Removes a {@link IterableChangeRecord_}
from the list of duplicates.
 * The list of duplicates also is removed from the map if it gets empty.
 * Removes a {@link IterableChangeRecord_} from the list of duplicates.
 * The list of
duplicates also is removed from the map if it gets empty.
 * @param {?} record
 * @return {?}
 * ^ function (record) {
 *   var /** @type {?} */ key = record.trackById;
 *   var /** @type {?} */ recordList = /** @type {?} */ ((this.map.get(key)));
 *   // Remove the list of duplicates
when it gets empty
 *   if (recordList.remove(record)) {
 *     this.map.delete(key);
 *   }
 *   return
record;
 * };
 * Object.defineProperty(_DuplicateMap.prototype, "isEmpty", {
 *   get: /**
 *     @return
 {?}
 *     ^ function () { return this.map.size === 0; },
 *   enumerable: true,
 *   configurable: true
 * });
 * @return {?}
 * ^ _DuplicateMap.prototype.clear = /**
 *   @return
 {?}
 *   ^ function () { this.map.clear(); }
 *   return _DuplicateMap;
 * });
 * @param {?} item
 * @param {?}
addRemoveOffset
 * @param {?} moveOffsets
 * @return {?}
 * ^ function getPreviousIndex(item,
addRemoveOffset, moveOffsets) {
 *   var /** @type {?} */ previousIndex = item.previousIndex;
 *   if
(previousIndex === null)
 *     return previousIndex;
 *   var /** @type {?} */ moveOffset = 0;
 *   if (moveOffsets
&& previousIndex < moveOffsets.length) {
 *     moveOffset = moveOffsets[previousIndex];
 *   }
 *   return
previousIndex + addRemoveOffset + moveOffset;
 * }
 * ^ fileoverview added by tsickle
 * @suppress
{checkTypes} checked by tsc
 * ^ license
 * Copyright Google Inc. All Rights Reserved.
 * Use of
this source code is governed by an MIT-style license that can be
 * found in the LICENSE file at
https://angular.io/license
 * nvar DefaultKeyValueDifferFactory = /** @class */ (function () {
 *   function
DefaultKeyValueDifferFactory() {}
 *   /**
 *     @param {?} obj
 *     @return {?}
 *     ^
DefaultKeyValueDifferFactory.prototype.supports = /**
 *     @param {?} obj
 *     @return {?}
 *     ^
function (obj) { return obj instanceof Map || isJsObject(obj); };
 *   /**
 *     @template K, V
 *     @return {?}
 *     ^
DefaultKeyValueDifferFactory.prototype.create = /**
 *     @template K, V
 *     @return {?}
 *     ^
function () { return new DefaultKeyValueDiffer(); };
 *   return DefaultKeyValueDifferFactory;
 * }());
 * nvar
DefaultKeyValueDiffer = /** @class */ (function () {
 *   function DefaultKeyValueDiffer() {
 *     this._records =
new Map();
 *     this._mapHead = null;
 *     this._appendAfter = null;
 *     this._previousMapHead = null;
 *     this._changesHead = null;
 *     this._changesTail = null;
 *     this._additionsHead = null;
 *     this._additionsTail = null;
 *     this._removalsHead = null;
 *     this._removalsTail = null;
 *   }
 *   Object.defineProperty(DefaultKeyValueDiffer.prototype, "isDirty", {
 *     get: /**
 *       @return
 {?}
 *       ^
function () {
 *         return this._additionsHead !== null || this._changesHead !== null ||
this._removalsHead !== null;
 *       },
 *     enumerable: true,
 *     configurable: true
 *   });
 *   /**
 *     @param {?} fn
 *     @return {?}
 *     ^
DefaultKeyValueDiffer.prototype.forEachItem = /**
 *     @param
 {?} fn
 *     @return {?}
 *     ^
function (fn) {
 *       var /** @type {?} */ record;
 *       for (record =
this._mapHead; record !== null; record = record._next) {
 *         fn(record);
 *       }
 *   };
 *   /**
 *     @param
 {?} fn
 *     @return {?}
 *     ^
DefaultKeyValueDiffer.prototype.forEachPreviousItem = /**
 *     @param
 {?} fn
 *     @return {?}
 *     ^
function (fn) {
 *       var /** @type {?} */ record;
 *       for (record =
this._previousMapHead; record !== null; record = record._nextPrevious) {
 *         fn(record);
 *       }
 *   };
 *   /**
 *     @param {?} fn
 *     @return {?}
 *     ^
DefaultKeyValueDiffer.prototype.forEachChangedItem =
 *   /**
 *     @param {?} fn
 *     @return {?}
 *     ^
function (fn) {
 *       var /** @type {?} */ record;
 *       for
(record = this._changesHead; record !== null; record = record._nextChanged) {
 *         fn(record);
 *       }
 *   };
 *   /**
 *     @param {?} fn
 *     @return {?}
 *     ^
DefaultKeyValueDiffer.prototype.forEachAddedItem =

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/**\n * @param {?} fn\n * @return {?}\n */\n function (fn) {\n var /** @type {?} */ record;\n for\n (record = this._additionsHead; record !== null; record = record._nextAdded) {\n fn(record);\n }\n };\n\n /**\n * @param {?} fn\n * @return {?}\n */\n DefaultKeyValueDiffer.prototype.forEachRemovedItem =\n /**\n * @param {?} fn\n * @return {?}\n */\n function (fn) {\n var /** @type {?} */ record;\n for\n (record = this._removalsHead; record !== null; record = record._nextRemoved) {\n fn(record);\n }\n };\n\n /**\n * @param {?=} map\n * @return {?}\n */\n DefaultKeyValueDiffer.prototype.diff = /**\n * @param {?=} map\n * @return {?}\n */\n function (map) {\n if (!map) {\n map = new Map();\n }\n else if (!(map instanceof Map || isJsObject(map))) {\n throw new Error(`Error trying to diff ` +\n stringify(map) + ``. Only maps and objects are allowed");\n }\n return this.check(map) ? this : null;\n };\n\n /**\n * @return {?}\n */\n DefaultKeyValueDiffer.prototype.onDestroy = /**\n * @return {?}\n */\n function () { };\n\n /**\n * Check the current state of the map vs the previous.\n * The algorithm is\n optimised for when the keys do no change.\n */\n /**\n * Check the current state of the map vs the\n previous.\n * The algorithm is optimised for when the keys do no change.\n */\n @param {?} map\n @return\n {?}\n */\n DefaultKeyValueDiffer.prototype.check = /**\n * Check the current state of the map vs the\n previous.\n * The algorithm is optimised for when the keys do no change.\n */\n @param {?} map\n @return\n {?}\n */\n function (map) {\n var _this = this;\n this._reset();\n var /** @type {?} */ insertBefore =\n this._mapHead;\n this._appendAfter = null;\n this._forEach(map, function (value, key) {\n if\n (insertBefore && insertBefore.key === key) {\n _this._maybeAddToChanges(insertBefore, value);\n _this._appendAfter = insertBefore;\n insertBefore = insertBefore._next;\n }\n else {\n var /** @type {?} */ record = _this._getOrCreateRecordForKey(key, value);\n insertBefore =\n _this._insertBeforeOrAppend(insertBefore, record);\n }\n });\n // Items remaining at the end of the\n list have been deleted\n if (insertBefore) {\n if (insertBefore._prev) {\n insertBefore._prev._next = null;\n }\n this._removalsHead = insertBefore;\n for (var /** @type\n {?} */ record = insertBefore; record !== null; record = record._nextRemoved) {\n if (record ===\n this._mapHead) {\n this._mapHead = null;\n }\n this._records.delete(record.key);\n record._nextRemoved = record._next;\n record.previousValue = record.currentValue;\n record.currentValue = null;\n record._prev = null;\n record._next = null;\n }\n }\n // Make sure tails have no next records from previous runs\n if (this._changesTail)\n this._changesTail._nextChanged = null;\n if (this._additionsTail)\n this._additionsTail._nextAdded =\n null;\n return this.isDirty;\n };\n\n /**\n * Inserts a record before `before` or append at the end of the list\n when `before` is null.\n */\n * Notes:\n * - This method appends at `this._appendAfter`,\n * - This method\n updates `this._appendAfter`,\n * - The return value is the new value for the insertion pointer.\n */\n @param {?} before\n @param {?} record\n @return {?}\n */\n\n DefaultKeyValueDiffer.prototype._insertBeforeOrAppend = /**\n * Inserts a record before `before` or append at\n the end of the list when `before` is null.\n */\n * Notes:\n * - This method appends at `this._appendAfter`,\n * - This method\n updates `this._appendAfter`,\n * - The return value is the new value for the insertion pointer.\n */\n @param {?} before\n @param {?} record\n @return {?}\n */\n function (before, record) {\n if\n (before) {\n var /** @type {?} */ prev = before._prev;\n record._next = before;\n record._prev\n = prev;\n before._prev = record;\n if (prev) {\n prev._next = record;\n }\n if\n (before === this._mapHead) {\n this._mapHead = record;\n }\n this._appendAfter = before;\n return before;\n }\n if (this._appendAfter) {\n this._appendAfter._next = record;\n record._prev = this._appendAfter;\n }\n else {\n this._mapHead = record;\n }\n this._appendAfter = record;\n return null;\n };\n\n /**\n * @param {?} key\n * @param {?} value\n */\n @return {?}\n */\n DefaultKeyValueDiffer.prototype._getOrCreateRecordForKey = /**\n * @param {?} key\n * @param {?} value\n */\n @return {?}\n */\n function (key, value) {\n if (this._records.has(key))\n {\n var /** @type {?} */ record_1 = /** @type {?} */ ((this._records.get(key)));\n this._maybeAddToChanges(record_1, value);\n var /** @type {?} */ prev = record_1._prev;\n var /**\n @type {?} */ next = record_1._next;\n if (prev) {\n prev._next = next;\n }\n if (next)\n
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{\n      next._prev = prev;\n      }\n      record_1._next = null;\n      record_1._prev = null;\n      return record_1;\n      }\n      var /** @type {?} */ record = new KeyValueChangeRecord_(key);\n      this._records.set(key, record);\n      record.currentValue = value;\n      this._addToAdditions(record);\n      return\n      record;\n      };\n      /** @internal */\n      /**\n      * \\@internal\n      * @return {?} */\n      *\n      DefaultKeyValueDiffer.prototype._reset = /**\n      * \\@internal\n      * @return {?} */\n      *\n      function () {\n      if\n      (this.isDirty) {\n      var /** @type {?} */ record = void 0;\n      // let `previousMapHead` contain the state\n      of the map before the changes\n      this._previousMapHead = this._mapHead;\n      for (record =\n      this._previousMapHead; record !== null; record = record._next) {\n      record._nextPrevious =\n      record._next;\n      }\n      // Update `record.previousValue` with the value of the item before the changes\n      // We need to update all changed items (that's those which have been added and changed)\n      for (record =\n      this._changesHead; record !== null; record = record._nextChanged) {\n      record.previousValue =\n      record.currentValue;\n      }\n      for (record = this._additionsHead; record != null; record =\n      record._nextAdded) {\n      record.previousValue = record.currentValue;\n      }\n      this._changesHead = this._changesTail = null;\n      this._additionsHead = this._additionsTail = null;\n      this._removalsHead = null;\n      }\n      };\n      /**\n      * @param {?} record\n      * @param {?} newValue\n      *\n      @return {?} */\n      *\n      DefaultKeyValueDiffer.prototype._maybeAddToChanges = /**\n      * @param {?} record\n      * @param {?} newValue\n      * @return {?} */\n      *\n      function (record, newValue) {\n      if\n      (!looseIdentical(newValue, record.currentValue)) {\n      record.previousValue = record.currentValue;\n      record.currentValue = newValue;\n      this._addToChanges(record);\n      }\n      };\n      /**\n      * @param {?} record\n      * @return {?} */\n      *\n      DefaultKeyValueDiffer.prototype._addToAdditions = /**\n      * @param {?} record\n      * @return {?} */\n      *\n      function (record) {\n      if (this._additionsHead === null) {\n      this._additionsHead = this._additionsTail = record;\n      }\n      else {\n      /** @type {?} */\n      ((this._additionsTail)._nextAdded = record;\n      this._additionsTail = record;\n      }\n      };\n      /**\n      * @param {?} record\n      * @return {?} */\n      *\n      DefaultKeyValueDiffer.prototype._addToChanges = /**\n      * @param {?} record\n      * @return {?} */\n      *\n      function (record) {\n      if (this._changesHead === null) {\n      this._changesHead = this._changesTail = record;\n      }\n      else {\n      /** @type {?} */\n      ((this._changesTail)._nextChanged = record;\n      this._changesTail = record;\n      }\n      };\n      /**\n      * \\@internal\n      * @template K, V\n      * @param {?} obj\n      * @param {?} fn\n      * @return {?} */\n      *\n      DefaultKeyValueDiffer.prototype._forEach = /**\n      * \\@internal\n      * @template K, V\n      * @param {?} obj\n      * @param {?} fn\n      * @return {?} */\n      *\n      function (obj, fn) {\n      if (obj instanceof Map) {\n      obj.forEach(fn);\n      }\n      else {\n      Object.keys(obj).forEach(function (k) { return fn(obj[k], k); });\n      }\n      };\n      return DefaultKeyValueDiffer;\n      }());\n      /**\n      * \\@stable\n      * \\nvar KeyValueChangeRecord_ = /**\n      * @class */\n      (function () {\n      function KeyValueChangeRecord_(key) {\n      this.key = key;\n      this.previousValue = null;\n      this.currentValue = null;\n      /**\n      * \\@internal\n      * \\n\n      this._nextPrevious = null;\n      /**\n      * \\@internal\n      * \\n\n      this._next = null;\n      /**\n      * \\@internal\n      * \\n\n      this._prev = null;\n      /**\n      * \\@internal\n      * \\n\n      this._nextAdded =\n      null;\n      /**\n      * \\@internal\n      * \\n\n      this._nextRemoved = null;\n      /**\n      * \\@internal\n      * \\n\n      this._nextChanged = null;\n      }\n      return KeyValueChangeRecord_;\n      }());\n      /**\n      * @fileoverview\n      added by tsickle\n      * @suppress {checkTypes} checked by tsc\n      */\n      /**\n      * @license\n      * Copyright Google Inc. All\n      Rights Reserved.\n      * Use of this source code is governed by an MIT-style license that can be\n      * found in the\n      LICENSE file at https://angular.io/license\n      */\n      /**\n      * A strategy for tracking changes over time to an iterable.\n      Used by {\\@link NgForOf} to\n      * respond to changes in an iterable by effecting equivalent changes in the DOM.\n      *\n      * \\@stable\n      * @record\n      */\n      *\n      An object describing the changes in the `Iterable` collection since last\n      time\n      * `IterableDiffer#diff()` was invoked.\n      *\n      * \\@stable\n      * @record\n      */\n      *\n      Record representing the\n      item change information.\n      *\n      * \\@stable\n      * @record\n      */\n      *\n      @deprecated v4.0.0 - Use\n      IterableChangeRecord instead.\n      *\n      * @record\n      */\n      *\n      An optional function passed into {\\@link NgForOf}\n      that defines how to track\n      * items in an iterable (e.g. fby index or id)\n      *\n      * \\@stable\n      * @record\n      */\n      *\n      Provides a factory for {\\@link IterableDiffer}.\n      *\n      * \\@stable\n      * @record\n      */\n      *\n      A repository of

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different iterable diffing strategies used by NgFor, NgClass, and others.\n * \\@stable\n *^nvar IterableDiffers = /**
@class */ (function () {\n  function IterableDiffers(factories) {\n    this.factories = factories;\n  }\n  /**\n *
@param {?} factories\n * @param {?=} parent\n * @return {?}\n *^n  IterableDiffers.create = /**\n *
@param {?} factories\n * @param {?=} parent\n * @return {?}\n *^n  function (factories, parent) {\n
if (parent != null) {\n    var /** @type {?} */ copied = parent.factories.slice();\n    factories =
factories.concat(copied);\n    return new IterableDiffers(factories);\n  }\n  else {\n    return new
IterableDiffers(factories);\n  }\n  };\n  /**\n * Takes an array of {@link IterableDifferFactory} and returns a
provider used to extend the\n * inherited {@link IterableDiffers} instance with the provided factories and return a
new\n * {@link IterableDiffers} instance.\n *^n * The following example shows how to extend an existing
list of factories,\n * which will only be applied to the injector for this component and its children.\n * This step
is all that's required to make a new {@link IterableDiffer} available.\n *^n * ### Example\n *^n * ```\n *
@Component({\n *   viewProviders: [\n *     IterableDiffers.extend([new ImmutableListDiffer()])\n *   ]\n * })\n *
```\n *^n * Takes an array of {@link IterableDifferFactory} and returns a provider used to
extend the\n * inherited {@link IterableDiffers} instance with the provided factories and return a new\n *
{@link IterableDiffers} instance.\n *^n * The following example shows how to extend an existing list of
factories,\n * which will only be applied to the injector for this component and its children.\n * This step is all
that's required to make a new {@link IterableDiffer} available.\n *^n * ### Example\n *^n * ```\n *
@Component({\n * viewProviders: [\n * IterableDiffers.extend([new ImmutableListDiffer()])\n *]\n * })\n *
```\n *^n * @param {?} factories\n * @return {?}\n *^n  IterableDiffers.extend = /**\n * Takes
an array of {@link IterableDifferFactory} and returns a provider used to extend the\n * inherited {@link
IterableDiffers} instance with the provided factories and return a new\n * {@link IterableDiffers} instance.\n *^n *
The following example shows how to extend an existing list of factories,\n * which will only be applied
to the injector for this component and its children.\n * This step is all that's required to make a new {@link
IterableDiffer} available.\n *^n * ### Example\n *^n * ```\n *
@Component({\n *   viewProviders: [\n *     IterableDiffers.extend([new ImmutableListDiffer()])\n *   ]\n * })\n *
```\n *^n * @param {?} factories\n * @return {?}\n *^n  function (factories) {\n    return {\n      provide: IterableDiffers,\n
 useFactory: function (parent) {\n if (!parent) {\n // Typically would occur when calling
IterableDiffers.extend inside of dependencies passed\n // to\n // bootstrap(), which would
override default pipes instead of extending them.\n throw new Error('Cannot extend IterableDiffers
without a parent injector');\n }\n return IterableDiffers.create(factories, parent);\n },\n
 // Dependency technically isn't optional, but we can provide a better error message this way.\n deps:
[[IterableDiffers, new SkipSelf(), new Optional()]]\n };\n };\n /**\n * @param {?} iterable\n * @return
{?}\n *^n IterableDiffers.prototype.find = /**\n * @param {?} iterable\n * @return {?}\n *^n
function (iterable) {\n var /** @type {?} */ factory = this.factories.find(function (f) { return f.supports(iterable);
});\n if (factory != null) {\n return factory;\n }\n else {\n throw new Error('"Cannot find a
differ supporting object "' + iterable + '"' of type "' + getTypeNameForDebugging(iterable) + '"');\n }\n };\n
return IterableDiffers;\n})();\n /**\n * @param {?} type\n * @return {?}\n *^nfunction
getTypeNameForDebugging(type) {\n return type['name'] || typeof type;\n}\n\n /**\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n *^n /**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n *^n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n *^n /**\n * A differ that tracks changes made to an object over time.\n *^n *
\\@stable\n * @record\n *^n /**\n * An object describing the changes in the `Map` or `{[k:string]: string}`
since last time\n * `KeyValueDiffer#diff()` was invoked.\n *^n * \\@stable\n * @record\n *^n /**\n * Record
representing the item change information.\n *^n * \\@stable\n * @record\n *^n /**\n * Provides a factory for
{@link KeyValueDiffer}.\n *^n * \\@stable\n * @record\n *^n /**\n * A repository of different Map diffing
strategies used by NgClass, NgStyle, and others.\n * \\@stable\n *^nvar KeyValueDiffers = /** @class */ (function
() {\n function KeyValueDiffers(factories) {\n this.factories = factories;\n }\n /**\n * @template S\n *
@param {?} factories\n * @param {?=} parent\n * @return {?}\n *^n KeyValueDiffers.create = /**\n

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* @template S\n * @param {?} factories\n * @param {?=} parent\n * @return {?}\n */\n function
(factories, parent) {\n if (parent) {\n var /** @type {?} */ copied = parent.factories.slice();\n factories = factories.concat(copied);\n }\n return new KeyValueDiffers(factories);\n };\n /**\n *
Takes an array of {@link KeyValueDifferFactory} and returns a provider used to extend the\n * inherited {@link
KeyValueDiffers} instance with the provided factories and return a new\n * {@link KeyValueDiffers} instance.\n
*\n * The following example shows how to extend an existing list of factories,\n * which will only be applied
to the injector for this component and its children.\n * This step is all that's required to make a new {@link
KeyValueDiffer} available.\n *\n * ### Example\n *\n * ```\n * @Component({\n * viewProviders:
[\n * KeyValueDiffers.extend([new ImmutableMapDiffer()])\n *]\n * })\n * ```\n */\n *
Takes an array of {@link KeyValueDifferFactory} and returns a provider used to extend the\n * inherited
{@link KeyValueDiffers} instance with the provided factories and return a new\n * {@link KeyValueDiffers}
instance.\n *\n * The following example shows how to extend an existing list of factories,\n * which will
only be applied to the injector for this component and its children.\n * This step is all that's required to make a
new {@link KeyValueDiffer} available.\n *\n * ### Example\n *\n * ```\n * @Component({\n * viewProviders: [\n * KeyValueDiffers.extend([new ImmutableMapDiffer()])\n *]\n * })\n * ```\n */\n *
@template S\n * @param {?} factories\n * @return {?}\n */\n function\n KeyValueDiffers.extend = /**\n * Takes
an array of {@link KeyValueDifferFactory} and returns a provider used to extend the\n * inherited {@link
KeyValueDiffers} instance with the provided factories and return a new\n * {@link KeyValueDiffers}
instance.\n *\n * The following example shows how to extend an existing list of factories,\n * which will
only be applied to the injector for this component and its children.\n * This step is all that's required to make a
new {@link KeyValueDiffer} available.\n *\n * ### Example\n *\n * ```\n * @Component({\n * viewProviders: [\n * KeyValueDiffers.extend([new ImmutableMapDiffer()])\n *]\n * })\n * ```\n */\n *
@template S\n * @param {?} factories\n * @return {?}\n */\n function (factories) {\n return {\n
provide: KeyValueDiffers,\n useFactory: function (parent) {\n if (!parent) {\n //
Typically would occur when calling KeyValueDiffers.extend inside of dependencies passed\n // to
bootstrap(), which would override default pipes instead of extending them.\n throw new Error('Cannot
extend KeyValueDiffers without a parent injector');\n }\n return
KeyValueDiffers.create(factories, parent);\n },\n // Dependency technically isn't optional, but we can
provide a better error message this way.\n deps: [[KeyValueDiffers, new SkipSelf(), new Optional()]\n
];\n };\n /**\n * @param {?} kv\n * @return {?}\n */\n function\n KeyValueDiffers.prototype.find = /**\n *
@param {?} kv\n * @return {?}\n */\n function (kv) {\n var /** @type {?} */ factory =
this.factories.find(function (f) { return f.supports(kv); });\n if (factory) {\n return factory;\n }\n
throw new Error("Cannot find a differ supporting object '" + kv + "'");\n };\n return
KeyValueDiffers;\n });\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
*/\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n /**\n * Structural
diffing for `Object`s and `Map`s.\n */\n nvar keyValDiff = [new DefaultKeyValueDifferFactory()];\n /**\n * Structural
diffing for `Iterable` types such as `Array`s.\n */\n nvar iterableDiff = [new DefaultIterableDifferFactory()];\n nvar
defaultIterableDiffers = new IterableDiffers(iterableDiff);\n nvar defaultKeyValueDiffers = new
KeyValueDiffers(keyValDiff);\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by
tsc\n */\n /**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n
*/\n /**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n /**\n * @license\n
* Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license
that can be\n * found in the LICENSE file at https://angular.io/license\n */\n nvar
_CORE_PLATFORM_PROVIDERS = [\n // Set a default platform name for platforms that don't set it
explicitly.\n { provide: PLATFORM_ID, useValue: 'unknown' },\n { provide: PlatformRef, deps: [Injector] },\n
{ provide: TestabilityRegistry, deps: [] },\n { provide: Console, deps: [] }];\n /**\n * This platform has to be

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included in any other platform\n * \n * \\@experimental\n * \nvar platformCore = createPlatformFactory(null, 'core',
_CORE_PLATFORM_PROVIDERS);\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes}
checked by tsc\n * \n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source
code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n
*\n/**\n * Provide this token to set the locale of your application.\n * It is used for i18n extraction, by i18n pipes
(DatePipe, I18nPluralPipe, CurrencyPipe,\n * DecimalPipe and PercentPipe) and by ICU expressions.\n * \n * See
the {\@linkDocs guide/i18n#setting-up-locale i18n guide} for more information.\n * \n * ### Example\n * \n *
``typescript\n * import { LOCALE_ID } from '@angular/core';\n * import { platformBrowserDynamic } from
'\@angular/platform-browser-dynamic';\n * import { AppModule } from './app/app.module';\n * \n *
platformBrowserDynamic().bootstrapModule(AppModule, {\n * providers: [{provide: LOCALE_ID, useValue:
'en-US' }]\n * });\n * ``\n * \n * \\@experimental i18n support is experimental.\n * \nvar LOCALE_ID = new
InjectionToken('LocaleId');\n\n/**\n * Use this token at bootstrap to provide the content of your translation file
(xtb`,\n * `xlf` or `xlf2`) when you want to translate your application in another language.\n * \n * See the
{\@linkDocs guide/i18n#merge i18n guide} for more information.\n * \n * ### Example\n * \n * ``typescript\n *
import { TRANSLATIONS } from '@angular/core';\n * import { platformBrowserDynamic } from
'\@angular/platform-browser-dynamic';\n * import { AppModule } from './app/app.module';\n * \n * // content of
your translation file\n * const translations = '...';\n * \n * platformBrowserDynamic().bootstrapModule(AppModule,
{\n * providers: [{provide: TRANSLATIONS, useValue: translations }]\n * });\n * ``\n * \n * \\@experimental
i18n support is experimental.\n * \nvar TRANSLATIONS = new InjectionToken('Translations');\n\n/**\n * Provide
this token at bootstrap to set the format of your {\@link TRANSLATIONS}: `xtb`,\n * `xlf` or `xlf2`.\n * \n * See
the {\@linkDocs guide/i18n#merge i18n guide} for more information.\n * \n * ### Example\n * \n * ``typescript\n *
import { TRANSLATIONS_FORMAT } from '@angular/core';\n * import { platformBrowserDynamic } from
'\@angular/platform-browser-dynamic';\n * import { AppModule } from './app/app.module';\n * \n *
platformBrowserDynamic().bootstrapModule(AppModule, {\n * providers: [{provide:
TRANSLATIONS_FORMAT, useValue: 'xlf' }]\n * });\n * ``\n * \n * \\@experimental i18n support is
experimental.\n * \nvar TRANSLATIONS_FORMAT = new InjectionToken('TranslationsFormat');\n\n/** @enum
{number} *\nvar MissingTranslationStrategy = {\n Error: 0,\n Warning: 1,\n Ignore:
2,\n};\n\nMissingTranslationStrategy[MissingTranslationStrategy.Error] =
'Error';\n\nMissingTranslationStrategy[MissingTranslationStrategy.Warning] =
'Warning';\n\nMissingTranslationStrategy[MissingTranslationStrategy.Ignore] = 'Ignore';\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * \n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n * \n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n * \n/**\n * @return {?}\n *\nfunction
_iterableDiffersFactory() {\n return defaultIterableDiffers;\n}\n\n/**\n * @return {?}\n *\nfunction
_keyValueDiffersFactory() {\n return defaultKeyValueDiffers;\n}\n\n/**\n * @param {=} locale\n * @return
{?}\n *\nfunction _localeFactory(locale) {\n return locale || 'en-US';\n}\n\n/**\n * This module includes the
providers of \@angular/core that are needed\n * to bootstrap components via `ApplicationRef`.\n * \n *
\\@experimental\n * \nvar ApplicationModule = /** @class */ (function () {\n // Inject ApplicationRef to make it
eager...\n function ApplicationModule(appRef) {\n }\n ApplicationModule.decorators = [\n { type:
NgModule, args: [{\n providers: [\n ApplicationRef,\n ApplicationInitStatus,\n Compiler,\n APP_ID_RANDOM_PROVIDER,\n {\n provide: IterableDiffers, useFactory: _iterableDiffersFactory },\n {\n provide: KeyValueDiffers,
useFactory: _keyValueDiffersFactory },\n {\n provide: LOCALE_ID,\n useFactory: _localeFactory,\n deps: [[new Inject(LOCALE_ID), new Optional(), new
SkipSelf()]]\n },\n],\n }],\n },\n],\n /** @nocollapse */\n ApplicationModule.ctorParameters = function () { return [\n { type: ApplicationRef, },\n]; };
return ApplicationModule;\n }());\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by
tsc\n * \n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of this source code is

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* @param {?} index\n * @return {?}\n *\nfunction asPureExpressionData(view, index) {\n return /** @type {?} */
*/ (view.nodes[index]);\n}\n\n/**\n * Accessor for view.nodes, enforcing that every usage site stays monomorphic.\n * @param {?} view\n * @param {?} index\n * @return {?}\n *\nfunction asQueryList(view, index) {\n return
/** @type {?} */ (view.nodes[index]);\n}\n\n/**\n * @record\n *\nfunction DebugContext = /**
@class */ (function () {\n function DebugContext() {\n }\n return DebugContext;\n})();\n\n/**\n * @record\n *\nfunction\n *\nThis object is used to prevent cycles in the source files and to have a place where\n * debug mode can
hook it. It is lazily filled when `isDevMode` is known.\n *\nfunction Services = {\n setCurrentNode: /** @type {?} */
((undefined)),\n createRootView: /** @type {?} */ ((undefined)),\n createEmbeddedView: /** @type {?} */
((undefined)),\n createComponentView: /** @type {?} */ ((undefined)),\n createNgModuleRef: /** @type {?} */
((undefined)),\n overrideProvider: /** @type {?} */ ((undefined)),\n overrideComponentView: /** @type {?} */
((undefined)),\n clearOverrides: /** @type {?} */ ((undefined)),\n checkAndUpdateView: /** @type {?} */
((undefined)),\n checkNoChangesView: /** @type {?} */ ((undefined)),\n destroyView: /** @type {?} */
((undefined)),\n resolveDep: /** @type {?} */ ((undefined)),\n createDebugContext: /** @type {?} */
((undefined)),\n handleEvent: /** @type {?} */ ((undefined)),\n updateDirectives: /** @type {?} */
((undefined)),\n updateRenderer: /** @type {?} */ ((undefined)),\n dirtyParentQueries: /** @type {?} */
((undefined)),\n};\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
*\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n\n/**\n * @param
{?} context\n * @param {?} oldValue\n * @param {?} currValue\n * @param {?} isFirstCheck\n * @return {?}\n
*\nfunction expressionChangedAfterItHasBeenCheckedError(context, oldValue, currValue, isFirstCheck) {\n var
/** @type {?} */ msg = "ExpressionChangedAfterItHasBeenCheckedError: Expression has changed after it was
checked. Previous value: \" + oldValue + \". Current value: \" + currValue + \".\";\n if (isFirstCheck) {\n
msg +=\n \" It seems like the view has been created after its parent and its children have been dirty checked.\"\n
+\n \" Has it been created in a change detection hook ?\";\n }\n return viewDebugError(msg,
context);\n}\n\n/**\n * @param {?} err\n * @param {?} context\n * @return {?}\n *\nfunction
viewWrappedDebugError(err, context) {\n if (!(err instanceof Error)) {\n // errors that are not Error instances
don't have a stack,\n // so it is ok to wrap them into a new Error object...\n err = new Error(err.toString());\n }\n _addDebugContext(err, context);\n return err;\n}\n\n/**\n * @param {?} msg\n * @param {?} context\n *
@return {?}\n *\nfunction viewDebugError(msg, context) {\n var /** @type {?} */ err = new Error(msg);\n _addDebugContext(err, context);\n return err;\n}\n\n/**\n * @param {?} err\n * @param {?} context\n * @return
{?}\n *\nfunction _addDebugContext(err, context) {\n (** @type {?} */ (err))[ERROR_DEBUG_CONTEXT] =
context;\n (** @type {?} */ (err))[ERROR_LOGGER] = context.logError.bind(context);\n}\n\n/**\n * @param
{?} err\n * @return {?}\n *\nfunction isViewDebugError(err) {\n return !!getDebugContext(err);\n}\n\n/**\n *
@param {?} action\n * @return {?}\n *\nfunction viewDestroyedError(action) {\n return new
Error(\"ViewDestroyedError: Attempt to use a destroyed view: \" + action);\n}\n\n\n/**\n * @fileoverview added by
tsickle\n * @suppress {checkTypes} checked by tsc\n *\n\n/**\n * @license\n * Copyright Google Inc. All Rights
Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the
LICENSE file at https://angular.io/license\n *\nfunction NOOP = function () { };\nfunction _tokenKeyCache = new
Map();\n\n/**\n * @param {?} token\n * @return {?}\n *\nfunction tokenKey(token) {\n var /** @type {?} */ key
= _tokenKeyCache.get(token);\n if (!key) {\n key = stringify(token) + '_' + _tokenKeyCache.size;\n _tokenKeyCache.set(token, key);\n }\n return key;\n}\n\n/**\n * @param {?} view\n * @param {?} nodeId\n *
@param {?} bindingIdx\n * @param {?} value\n * @return {?}\n *\nfunction unwrapValue(view, nodeId,
bindingIdx, value) {\n if (WrappedValue.isWrapped(value)) {\n value = WrappedValue.unwrap(value);\n }\n var /** @type {?} */ globalBindingIdx = view.def.nodes[nodeId].bindingIndex + bindingIdx;\n var /** @type
{?} */ oldValue = WrappedValue.unwrap(view.oldValues[globalBindingIdx]);\n view.oldValues[globalBindingIdx] = new WrappedValue(oldValue);\n}\n return value;\n}\n\nfunction
UNDEFINED_RENDERER_TYPE_ID = '$$undefined';\nfunction EMPTY_RENDERER_TYPE_ID =
'$empty';\n\n/**\n * @param {?} values\n * @return {?}\n *\nfunction createRendererType2(values) {\n return

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{\n id: UNDEFINED_RENDERER_TYPE_ID,\n styles: values.styles,\n encapsulation:
values.encapsulation,\n data: values.data\n };}\n\nvar _renderCompCount = 0;\n/**\n * @param {?} type\n * @return {?}\n */\nfunction resolveRendererType2(type) {\n if (type && type.id ===
UNDEFINED_RENDERER_TYPE_ID) {\n // first time we see this RendererType2. Initialize it...\n var /**
 * @type {?} */ isFilled = ((type.encapsulation != null && type.encapsulation !== ViewEncapsulation.None) ||\n
type.styles.length || Object.keys(type.data).length);\n if (isFilled) {\n type.id = \"c\" +
_renderCompCount++;\n }\n else {\n type.id = EMPTY_RENDERER_TYPE_ID;\n }\n }\n\n if (type && type.id === EMPTY_RENDERER_TYPE_ID) {\n type = null;\n }\n\n return type ||
null;\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @param {?} bindingIdx\n * @param {?} value\n *
 * @return {?}\n */\nfunction checkBinding(view, def, bindingIdx, value) {\n var /** @type {?} */ oldValues =
view.oldValues;\n if ((view.state & 2 /* FirstCheck */) ||\n !looseIdentical(oldValues[def.bindingIndex +
bindingIdx], value)) {\n return true;\n }\n return false;\n}\n\n/**\n * @param {?} view\n * @param {?} def\n *
 * @param {?} bindingIdx\n * @param {?} value\n * @return {?}\n */\nfunction checkAndUpdateBinding(view,
def, bindingIdx, value) {\n if (checkBinding(view, def, bindingIdx, value)) {\n
view.oldValues[def.bindingIndex + bindingIdx] = value;\n return true;\n }\n return false;\n}\n\n/**\n *
 * @param {?} view\n * @param {?} def\n * @param {?} bindingIdx\n * @param {?} value\n * @return {?}\n */\n
function checkBindingNoChanges(view, def, bindingIdx, value) {\n var /** @type {?} */ oldValue =
view.oldValues[def.bindingIndex + bindingIdx];\n if ((view.state & 1 /* BeforeFirstCheck */) ||
!devModeEqual(oldValue, value)) {\n var /** @type {?} */ bindingName =
def.bindings[def.bindingIndex].name;\n throw
expressionChangedAfterItHasBeenCheckedError(Services.createDebugContext(view, def.nodeIndex), bindingName
+ \": \" + oldValue, bindingName + \": \" + value, (view.state & 1 /* BeforeFirstCheck */) !== 0);\n }\n}\n\n/**\n *
 * @param {?} view\n * @return {?}\n */\nfunction markParentViewsForCheck(view) {\n var /** @type {?} */
currView = view;\n while (currView) {\n if (currView.def.flags & 2 /* OnPush */) {\n currView.state
|= 8 /* ChecksEnabled */;\n }\n currView = currView.viewContainerParent || currView.parent;\n
 }\n}\n\n/**\n * @param {?} view\n * @param {?} endView\n * @return {?}\n */\nfunction
markParentViewsForCheckProjectedViews(view, endView) {\n var /** @type {?} */ currView = view;\n while
(currView && currView !== endView) {\n currView.state |= 64 /* CheckProjectedViews */;\n currView =
currView.viewContainerParent || currView.parent;\n }\n}\n\n/**\n * @param {?} view\n * @param {?}
nodeIndex\n * @param {?} eventName\n * @param {?} event\n * @return {?}\n */\nfunction dispatchEvent(view,
nodeIndex, eventName, event) {\n try {\n var /** @type {?} */ nodeDef = view.def.nodes[nodeIndex];\n
var /** @type {?} */ startView = nodeDef.flags & 33554432 /* ComponentView */ ?\n asElementData(view,
nodeIndex).componentView :\n view;\n markParentViewsForCheck(startView);\n return
Services.handleEvent(view, nodeIndex, eventName, event);\n }\n catch (/** @type {?} */ e) {\n //
Attention: Don't rethrow, as it would cancel Observable subscriptions!\n
view.root.errorHandler.handleError(e);\n }\n}\n\n/**\n * @param {?} view\n * @return {?}\n */\nfunction
declaredViewContainer(view) {\n if (view.parent) {\n var /** @type {?} */ parentView = view.parent;\n
return asElementData(parentView, /** @type {?} */ ((view.parentNodeDef)).nodeIndex);\n }\n return
null;\n}\n\n/**\n * for component views, this is the host element.\n * for embedded views, this is the index of the
parent node\n * that contains the view container.\n * @param {?} view\n * @return {?}\n */\nfunction
viewParentEl(view) {\n var /** @type {?} */ parentView = view.parent;\n if (parentView) {\n return /**
 * @type {?} */ ((view.parentNodeDef)).parent;\n }\n else {\n return null;\n }\n}\n\n/**\n *
 * @param {?} view\n * @param {?} def\n * @return {?}\n */\nfunction renderNode(view, def) {\n switch (def.flags &
201347067 /* Types */) {\n case 1 /* TypeElement */:\n return asElementData(view,
def.nodeIndex).renderElement;\n case 2 /* TypeText */:\n return asTextData(view,
def.nodeIndex).renderText;\n }\n}\n\n/**\n * @param {?} target\n * @param {?} name\n * @return {?}\n */\n
function elementEventFullName(target, name) {\n return target ? target + \":\" + name : name;\n}\n\n/**\n *
 * @param {?} view\n * @return {?}\n */\nfunction isComponentView(view) {\n return !!view.parent && !/**

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@type {?} */ ((view.parentNodeDef)).flags & 32768 /* Component */;\n\n\n * @param {?} view\n * @return
{?}\n *\nfunction isEmbeddedView(view) {\n return !!view.parent && !(/** @type {?} */
((view.parentNodeDef)).flags & 32768 /* Component */);\n\n\n * @param {?} queryId\n * @return {?}\n
*\nfunction filterQueryId(queryId) {\n return 1 << (queryId % 32);\n\n\n * @param {?}
matchedQueriesDsl\n * @return {?}\n *\nfunction splitMatchedQueriesDsl(matchedQueriesDsl) {\n var /**
@type {?} */ matchedQueries = {};\n var /** @type {?} */ matchedQueryIds = 0;\n var /** @type {?} */
references = {};\n if (matchedQueriesDsl) {\n matchedQueriesDsl.forEach(function (_a) {\n var
queryId = _a[0], valueType = _a[1];\n if (typeof queryId === 'number') {\n
matchedQueries[queryId] = valueType;\n matchedQueryIds |= filterQueryId(queryId);\n }\n
else {\n references[queryId] = valueType;\n }\n });\n }\n return { matchedQueries:
matchedQueries, references: references, matchedQueryIds: matchedQueryIds };\n\n\n * @param {?} deps\n *
@param {?=} sourceName\n * @return {?}\n *\nfunction splitDepsDsl(deps, sourceName) {\n return
deps.map(function (value) {\n var /** @type {?} */ token;\n var /** @type {?} */ flags;\n if
(Array.isArray(value)) {\n flags = value[0], token = value[1];\n } else {\n flags = 0 /* None
*/;\n token = value;\n }\n if (token && (typeof token === 'function' || typeof token === 'object') &&
sourceName) {\n Object.defineProperty(token, SOURCE, { value: sourceName, configurable: true });\n
}\n return { flags: flags, token: token, tokenKey: tokenKey(token) };\n });\n\n\n * @param {?} view\n *
@param {?} renderHost\n * @param {?} def\n * @return {?}\n *\nfunction getParentRenderElement(view,
renderHost, def) {\n var /** @type {?} */ renderParent = def.renderParent;\n if (renderParent) {\n if
((renderParent.flags & 1 /* TypeElement */) === 0 ||\n (renderParent.flags & 33554432 /* ComponentView
*/) === 0 ||\n (/** @type {?} */ ((renderParent.element)).componentRendererType && /** @type {?} */
(/** @type {?} */ ((renderParent.element)).componentRendererType)).encapsulation ===
ViewEncapsulation.Native)) {\n // only children of non components, or children of components with native
encapsulation should\n // be attached.\n return asElementData(view, /** @type {?} */
((def.renderParent)).nodeIndex).renderElement;\n }\n } else {\n return renderHost;\n }\n}\n\nvar
DEFINITION_CACHE = new WeakMap();\n\n * @template D\n * @param {?} factory\n * @return {?}\n
*\nfunction resolveDefinition(factory) {\n var /** @type {?} */ value = /** @type {?} */
(((DEFINITION_CACHE.get(factory))));\n if (!value) {\n value = factory(function () { return NOOP; });\n
value.factory = factory;\n DEFINITION_CACHE.set(factory, value);\n }\n return value;\n\n\n *
@param {?} view\n * @return {?}\n *\nfunction rootRenderNodes(view) {\n var /** @type {?} */ renderNodes
= [];\n visitRootRenderNodes(view, 0 /* Collect */, undefined, undefined, renderNodes);\n return
renderNodes;\n\n\n * @param {?} view\n * @param {?} action\n * @param {?} parentNode\n * @param {?}
nextSibling\n * @param {?=} target\n * @return {?}\n *\nfunction visitRootRenderNodes(view, action,
parentNode, nextSibling, target) {\n // We need to re-compute the parent node in case the nodes have been moved
around manually\n if (action === 3 /* RemoveChild */) {\n parentNode =
view.renderer.parentNode(renderNode(view, /** @type {?} */ ((view.def.lastRenderRootNode)));\n }\n visitSiblingRenderNodes(view, action, 0, view.def.nodes.length - 1, parentNode, nextSibling, target);\n\n\n *
@param {?} view\n * @param {?} action\n * @param {?} startIndex\n * @param {?} endIndex\n * @param {?}
parentNode\n * @param {?} nextSibling\n * @param {?=} target\n * @return {?}\n *\nfunction
visitSiblingRenderNodes(view, action, startIndex, endIndex, parentNode, nextSibling, target) {\n for (var /**
@type {?} */ i = startIndex; i <= endIndex; i++) {\n var /** @type {?} */ nodeDef = view.def.nodes[i];\n if
(nodeDef.flags & (1 /* TypeElement */ | 2 /* TypeText */ | 8 /* TypeNgContent */)) {\n
visitRenderNode(view, nodeDef, action, parentNode, nextSibling, target);\n }\n // jump to next sibling\n
i += nodeDef.childCount;\n }\n\n\n * @param {?} view\n * @param {?} ngContentIndex\n * @param {?}
action\n * @param {?} parentNode\n * @param {?} nextSibling\n * @param {?=} target\n * @return {?}\n
*\nfunction visitProjectedRenderNodes(view, ngContentIndex, action, parentNode, nextSibling, target) {\n var
/** @type {?} */ compView = view;\n while (compView && !isComponentView(compView)) {\n
compView = compView.parent;\n }\n var /** @type {?} */ hostView = /** @type {?} */

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((compView)).parent;\n var /** @type {?} */ hostElDef = viewParentEl(/** @type {?} */ ((compView)));\n var
/** @type {?} */ startIndex = /** @type {?} */ ((hostElDef)).nodeIndex + 1;\n var /** @type {?} */ endIndex =
/** @type {?} */ ((hostElDef)).nodeIndex + /** @type {?} */ ((hostElDef)).childCount;\n for (var /** @type {?}
*/ i = startIndex; i <= endIndex; i++) {\n var /** @type {?} */ nodeDef = /** @type {?} */
((hostView)).def.nodes[i];\n if (nodeDef.ngContentIndex === ngContentIndex) {\n visitRenderNode(/**
@type {?} */ ((hostView)), nodeDef, action, parentNode, nextSibling, target);\n }\n // jump to next
sibling\n i += nodeDef.childCount;\n }\n if (!/** @type {?} */ ((hostView)).parent) {\n // a root view\n
var /** @type {?} */ projectedNodes = view.root.projectableNodes[ngContentIndex];\n if (projectedNodes)
{\n for (var /** @type {?} */ i = 0; i < projectedNodes.length; i++) {\n
execRenderNodeAction(view, projectedNodes[i], action, parentNode, nextSibling, target);\n }\n }\n
}\n}\n\n/**\n * @param {?} view\n * @param {?} nodeDef\n * @param {?} action\n * @param {?} parentNode\n *
@param {?} nextSibling\n * @param {?=} target\n * @return {?} */\n *^function visitRenderNode(view, nodeDef,
action, parentNode, nextSibling, target) {\n if (nodeDef.flags & 8 /* TypeNgContent */) {\n
visitProjectedRenderNodes(view, /** @type {?} */ ((nodeDef.ngContent)).index, action, parentNode, nextSibling,
target);\n }\n else {\n var /** @type {?} */ rn = renderNode(view, nodeDef);\n if (action === 3 /*
RemoveChild */ && (nodeDef.flags & 33554432 /* ComponentView */) &&\n (nodeDef.bindingFlags & 48
/* CatSyntheticProperty */) {\n // Note: we might need to do both actions.\n if (nodeDef.bindingFlags
& (16 /* SyntheticProperty */) {\n execRenderNodeAction(view, rn, action, parentNode, nextSibling,
target);\n }\n if (nodeDef.bindingFlags & (32 /* SyntheticHostProperty */) {\n var /**
@type {?} */ compView = asElementData(view, nodeDef.nodeIndex).componentView;\n
execRenderNodeAction(compView, rn, action, parentNode, nextSibling, target);\n }\n }\n else {\n
execRenderNodeAction(view, rn, action, parentNode, nextSibling, target);\n }\n if (nodeDef.flags &
16777216 /* EmbeddedViews */) {\n var /** @type {?} */ embeddedViews = /** @type {?} */
((asElementData(view, nodeDef.nodeIndex).viewContainer))._embeddedViews;\n for (var /** @type {?} */
k = 0; k < embeddedViews.length; k++) {\n visitRootRenderNodes(embeddedViews[k], action,
parentNode, nextSibling, target);\n }\n }\n if (nodeDef.flags & 1 /* TypeElement */ && !/** @type
{?} */ ((nodeDef.element)).name) {\n visitSiblingRenderNodes(view, action, nodeDef.nodeIndex + 1,
nodeDef.nodeIndex + nodeDef.childCount, parentNode, nextSibling, target);\n }\n }\n}\n\n/**\n * @param {?}
view\n * @param {?} renderNode\n * @param {?} action\n * @param {?} parentNode\n * @param {?}
nextSibling\n * @param {?=} target\n * @return {?} */\n *^function execRenderNodeAction(view, renderNode,
action, parentNode, nextSibling, target) {\n var /** @type {?} */ renderer = view.renderer;\n switch (action) {\n
case 1 /* AppendChild */:\n renderer.appendChild(parentNode, renderNode);\n break;\n case 2
/* InsertBefore */:\n renderer.insertBefore(parentNode, renderNode, nextSibling);\n break;\n case
3 /* RemoveChild */:\n renderer.removeChild(parentNode, renderNode);\n break;\n case 0 /*
Collect */:\n /** @type {?} */ ((target)).push(renderNode);\n break;\n }\n}\n\nvar NS_PREFIX_RE =
/^:([^\:]+):(.+)\$/;\n\n/**\n * @param {?} name\n * @return {?} */\n *^function splitNamespace(name) {\n if
(name[0] === ':') {\n var /** @type {?} */ match = /** @type {?} */ ((name.match(NS_PREFIX_RE)));\n
return [match[1], match[2]];\n }\n return ['', name];\n}\n\n/**\n * @param {?} bindings\n * @return {?} */\n
*^function calcBindingFlags(bindings) {\n var /** @type {?} */ flags = 0;\n for (var /** @type {?} */ i = 0; i <
bindings.length; i++) {\n flags |= bindings[i].flags;\n }\n return flags;\n}\n\n/**\n * @param {?} valueCount\n
* @param {?} constAndInterp\n * @return {?} */\n *^function interpolate(valueCount, constAndInterp) {\n var /**
@type {?} */ result = '';\n for (var /** @type {?} */ i = 0; i < valueCount * 2; i = i + 2) {\n result = result +
constAndInterp[i] + _toStringWithNull(constAndInterp[i + 1]);\n }\n return result + constAndInterp[valueCount
* 2];\n}\n\n/**\n * @param {?} valueCount\n * @param {?} c0\n * @param {?} a1\n * @param {?} c1\n * @param
{?=} a2\n * @param {?=} c2\n * @param {?=} a3\n * @param {?=} c3\n * @param {?=} a4\n * @param {?=}
c4\n * @param {?=} a5\n * @param {?=} c5\n * @param {?=} a6\n * @param {?=} c6\n * @param {?=} a7\n *
@param {?=} c7\n * @param {?=} a8\n * @param {?=} c8\n * @param {?=} a9\n * @param {?=} c9\n * @return
{?} */\n *^function inlineInterpolate(valueCount, c0, a1, c1, a2, c2, a3, c3, a4, c4, a5, c5, a6, c6, a7, c7, a8, c8, a9,

```





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namespaceAndName_1 = _c[1], suffixOrSecurityContext = _c[2];\n var _d =
splitNamespace(namespaceAndName_1), ns_1 = _d[0], name_1 = _d[1];\n var /** @type {?} */
securityContext = /** @type {?} */ ((undefined));\n var /** @type {?} */ suffix = /** @type {?} */
((undefined));\n switch (bindingFlags & 15 /* Types */) {\n case 4 /* TypeElementStyle */:\n suffix = /** @type {?} */ (suffixOrSecurityContext);\n break;\n case 1 /* TypeElementAttribute */:\n case 8 /* TypeProperty */:\n securityContext = /** @type {?} */ (suffixOrSecurityContext);\n break;\n }\n bindingDefs[i] =\n { flags: bindingFlags, ns: ns_1, name: name_1,
nonMinifiedName: name_1, securityContext: securityContext, suffix: suffix };\n outputs = outputs || [];\n var /** @type {?} */ outputDefs = new Array(outputs.length);\n for (var /** @type {?} */ i = 0; i <
outputs.length; i++) {\n var _e = outputs[i], target = _e[0], eventName = _e[1];\n outputDefs[i] = {\n type: 0 /* ElementOutput */,\n target: /** @type {?} */ (target), eventName: eventName,\n propName:
null\n };\n }\n fixedAttrs = fixedAttrs || [];\n var /** @type {?} */ attrs = /** @type {?} */
(fixedAttrs.map(function (_a) {\n var namespaceAndName = _a[0], value = _a[1];\n var _b =
splitNamespace(namespaceAndName), ns = _b[0], name = _b[1];\n return [ns, name, value];\n }));\n componentRendererType = resolveRendererType2(componentRendererType);\n if (componentView) {\n flags |= 33554432 /* ComponentView */;\n }\n flags |= 1 /* TypeElement */;\n return {\n // will bet set by
the view definition\n nodeId: -1,\n parent: null,\n renderParent: null,\n bindingIndex: -1,\n outputIndex: -1,\n // regular values\n checkIndex: checkIndex,\n flags: flags,\n childFlags: 0,\n directChildFlags: 0,\n childMatchedQueries: 0, matchedQueries: matchedQueries, matchedQueryIds:
matchedQueryIds, references: references, ngContentIndex: ngContentIndex, childCount: childCount,\n bindings: bindingDefs,\n bindingFlags: calcBindingFlags(bindingDefs),\n outputs: outputDefs,\n element: {\n ns: ns,\n name: name,\n attrs: attrs,\n template: null,\n // will bet set
by the view definition\n componentProvider: null,\n componentView: componentView || null,\n componentRendererType: componentRendererType,\n publicProviders: null,\n allProviders: null,\n handleEvent: handleEvent || NOOP,\n },\n provider: null,\n text: null,\n query: null,\n ngContent: null\n };\n var _b;\n}\n\n/** @param {?} view\n * @param {?} renderHost\n * @param {?} def\n * @return {?} */\nfunction createElement(view, renderHost, def) {\n var /** @type {?} */ elDef = /** @type
{?} */ ((def.element));\n var /** @type {?} */ rootSelectorOrNode = view.root.selectorOrNode;\n var /** @type
{?} */ renderer = view.renderer;\n var /** @type {?} */ el;\n if (view.parent || !rootSelectorOrNode) {\n if
(elDef.name) {\n el = renderer.createElement(elDef.name, elDef.ns);\n } else {\n el =
renderer.createComment("");\n }\n var /** @type {?} */ parentEl = getParentRenderElement(view,
renderHost, def);\n if (parentEl) {\n renderer.appendChild(parentEl, el);\n } else {\n el
= renderer.selectRootElement(rootSelectorOrNode);\n }\n if (elDef.attrs) {\n for (var /** @type {?} */ i = 0;
i < elDef.attrs.length; i++) {\n var _a = elDef.attrs[i], ns = _a[0], name_2 = _a[1], value = _a[2];\n renderer.setAttribute(el, name_2, value, ns);\n }\n }\n return el;\n}\n\n/** @param {?} view\n * @param
{?} compView\n * @param {?} def\n * @param {?} el\n * @return {?} */\nfunction
listenToElementOutputs(view, compView, def, el) {\n for (var /** @type {?} */ i = 0; i < def.outputs.length; i++)
{\n var /** @type {?} */ output = def.outputs[i];\n var /** @type {?} */ handleEventClosure =
renderEventHandlerClosure(view, def.nodeIndex, elementEventFullName(output.target, output.eventName));\n var /** @type {?} */ listenTarget = output.target;\n var /** @type {?} */ listenerView = view;\n if
(output.target === 'component') {\n listenTarget = null;\n listenerView = compView;\n }\n var /** @type {?} */ disposable = /** @type {?} */ (listenerView.renderer.listen(listenTarget || el,
output.eventName, handleEventClosure));\n /** @type {?} */\n ((view.disposables))[def.outputIndex + i] =
disposable;\n }\n}\n\n/** @param {?} view\n * @param {?} index\n * @param {?} eventName\n * @return
{?} */\nfunction renderEventHandlerClosure(view, index, eventName) {\n return function (event) {\n return
dispatchEvent(view, index, eventName, event);\n };\n}\n\n/** @param {?} view\n * @param {?} def\n * @param
{?} v0\n * @param {?} v1\n * @param {?} v2\n * @param {?} v3\n * @param {?} v4\n * @param {?} v5\n *
@param {?} v6\n * @param {?} v7\n * @param {?} v8\n * @param {?} v9\n * @return {?} */\nfunction

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checkAndUpdateElementInline(view, def, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9) {\n var /** @type {?} */ bindLen
= def.bindings.length;\n var /** @type {?} */ changed = false;\n if (bindLen > 0 &&
checkAndUpdateElementValue(view, def, 0, v0))\n changed = true;\n if (bindLen > 1 &&
checkAndUpdateElementValue(view, def, 1, v1))\n changed = true;\n if (bindLen > 2 &&
checkAndUpdateElementValue(view, def, 2, v2))\n changed = true;\n if (bindLen > 3 &&
checkAndUpdateElementValue(view, def, 3, v3))\n changed = true;\n if (bindLen > 4 &&
checkAndUpdateElementValue(view, def, 4, v4))\n changed = true;\n if (bindLen > 5 &&
checkAndUpdateElementValue(view, def, 5, v5))\n changed = true;\n if (bindLen > 6 &&
checkAndUpdateElementValue(view, def, 6, v6))\n changed = true;\n if (bindLen > 7 &&
checkAndUpdateElementValue(view, def, 7, v7))\n changed = true;\n if (bindLen > 8 &&
checkAndUpdateElementValue(view, def, 8, v8))\n changed = true;\n if (bindLen > 9 &&
checkAndUpdateElementValue(view, def, 9, v9))\n changed = true;\n return changed;\n}\n\n/**\n * @param
{?} view\n * @param {?} def\n * @param {?} values\n * @return {?}\n */\n\nfunction
checkAndUpdateElementDynamic(view, def, values) {\n var /** @type {?} */ changed = false;\n for (var /**
@type {?} */ i = 0; i < values.length; i++) {\n if (checkAndUpdateElementValue(view, def, i, values[i]))\n
changed = true;\n }\n return changed;\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @param {?}
bindingIdx\n * @param {?} value\n * @return {?}\n */\n\nfunction checkAndUpdateElementValue(view, def,
bindingIdx, value) {\n if (!checkAndUpdateBinding(view, def, bindingIdx, value)) {\n return false;\n }\n
var /** @type {?} */ binding = def.bindings[bindingIdx];\n var /** @type {?} */ elData = asElementData(view,
def.nodeIndex);\n var /** @type {?} */ renderNode$$1 = elData.renderElement;\n var /** @type {?} */ name =
/** @type {?} */ ((binding.name));\n switch (binding.flags & 15 /* Types */) {\n case 1 /*
TypeElementAttribute */:\n setElementAttribute(view, binding, renderNode$$1, binding.ns, name, value);\n
break;\n case 2 /* TypeElementClass */:\n setElementClass(view, renderNode$$1, name, value);\n
break;\n case 4 /* TypeElementStyle */:\n setElementStyle(view, binding, renderNode$$1, name,
value);\n break;\n case 8 /* TypeProperty */:\n var /** @type {?} */ bindView = (def.flags &
33554432 /* ComponentView */ &&\n binding.flags & 32 /* SyntheticHostProperty */) ?\n
elData.componentView : view;\n setElementProperty(bindView, binding, renderNode$$1, name,
value);\n break;\n }\n return true;\n}\n\n/**\n * @param {?} view\n * @param {?} binding\n * @param
{?} renderNode\n * @param {?} ns\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n\nfunction
setElementAttribute(view, binding, renderNode$$1, ns, name, value) {\n var /** @type {?} */ securityContext =
binding.securityContext;\n var /** @type {?} */ renderValue = securityContext ?
view.root.sanitizer.sanitize(securityContext, value) : value;\n renderValue = renderValue != null ?
renderValue.toString() : null;\n var /** @type {?} */ renderer = view.renderer;\n if (value != null) {\n
renderer.setAttribute(renderNode$$1, name, renderValue, ns);\n }\n else {\n
renderer.removeAttribute(renderNode$$1, name, ns);\n }\n}\n\n/**\n * @param {?} view\n * @param {?}
renderNode\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n\nfunction setElementClass(view,
renderNode$$1, name, value) {\n var /** @type {?} */ renderer = view.renderer;\n if (value) {\n
renderer.addClass(renderNode$$1, name);\n }\n else {\n renderer.removeClass(renderNode$$1, name);\n }\n}\n\n/**\n * @param {?} view\n * @param {?} binding\n * @param {?} renderNode\n * @param {?} name\n *
@param {?} value\n * @return {?}\n */\n\nfunction setElementStyle(view, binding, renderNode$$1, name, value) {\n
var /** @type {?} */ renderValue = view.root.sanitizer.sanitize(SecurityContext.STYLE, /** @type {?} */
(value));\n if (renderValue != null) {\n renderValue = renderValue.toString();\n var /** @type {?} */ unit
= binding.suffix;\n if (unit != null) {\n renderValue = renderValue + unit;\n }\n }\n else {\n
renderValue = null;\n }\n var /** @type {?} */ renderer = view.renderer;\n if (renderValue != null) {\n
renderer.setStyle(renderNode$$1, name, renderValue);\n }\n else {\n renderer.removeStyle(renderNode$$1,
name);\n }\n}\n\n/**\n * @param {?} view\n * @param {?} binding\n * @param {?} renderNode\n * @param {?}
name\n * @param {?} value\n * @return {?}\n */\n\nfunction setElementProperty(view, binding, renderNode$$1,
name, value) {\n var /** @type {?} */ securityContext = binding.securityContext;\n var /** @type {?} */

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renderValue = securityContext ? view.root.sanitizer.sanitize(securityContext, value) : value;\n
view.renderer.setProperty(renderNode$$1, name, renderValue);\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n */\n\nvar UNDEFINED_VALUE = new Object();\nvar InjectorRefTokenKey$1 =\ntokenKey(Injector);\nvar NgModuleRefTokenKey = tokenKey(NgModuleRef);\n\n * @param {?} flags\n * @param {?} token\n * @param {?} value\n * @param {?} deps\n * @return {?} \n\nfunction\nmoduleProvideDef(flags, token, value, deps) {\n // Need to resolve forwardRefs as e.g. for `useValue` we\n // lowered the expression and then stopped evaluating it,\n // i.e. also didn't unwrap it.\n value =\n resolveForwardRef(value);\n var /** @type {?} */ depDeps = splitDepsDsl(deps, stringify(token));\n return {\n // will be set by the module definition\n index: -1,\n deps: depDeps, flags: flags, token: token, value:\n value\n };\n}\n\n * @param {?} providers\n * @return {?} \n\nfunction moduleDef(providers) {\n var /**\n * @type {?} */ providersByKey = {};\n for (var /** @type {?} */ i = 0; i < providers.length; i++) {\n var /**\n * @type {?} */ provider = providers[i];\n provider.index = i;\n providersByKey[tokenKey(provider.token)] =\n provider;\n }\n return {\n // Will be filled later...\n factory: null,\n providersByKey:\n providersByKey,\n providers: providers\n };\n}\n\n * @param {?} data\n * @return {?} \n\nfunction\ninitNgModule(data) {\n var /** @type {?} */ def = data._def;\n var /** @type {?} */ providers =\n data._providers = new Array(def.providers.length);\n for (var /** @type {?} */ i = 0; i < def.providers.length; i++)\n {\n var /** @type {?} */ provDef = def.providers[i];\n if (!(provDef.flags & 4096 /* LazyProvider */) {\n providers[i] = _createProviderInstance$1(data, provDef);\n }\n }\n}\n\n * @param {?} data\n * @param {?} depDef\n * @param {?} notFoundValue\n * @return {?} \n\nfunction resolveNgModuleDep(data,\ndepDef, notFoundValue) {\n if (notFoundValue === void 0) { notFoundValue =\n Injector.THROW_IF_NOT_FOUND; }\n if (depDef.flags & 8 /* Value */) {\n return depDef.token;\n }\n if (depDef.flags & 2 /* Optional */) {\n notFoundValue = null;\n }\n if (depDef.flags & 1 /* SkipSelf */) {\n return data._parent.get(depDef.token, notFoundValue);\n }\n var /** @type {?} */ tokenKey$$1 =\n depDef.tokenKey;\n switch (tokenKey$$1) {\n case InjectorRefTokenKey$1:\n case\n NgModuleRefTokenKey:\n return data;\n }\n var /** @type {?} */ providerDef =\n data._def.providersByKey[tokenKey$$1];\n if (providerDef) {\n var /** @type {?} */ providerInstance =\n data._providers[providerDef.index];\n if (providerInstance === undefined) {\n providerInstance =\n data._providers[providerDef.index] =\n _createProviderInstance$1(data, providerDef);\n }\n return providerInstance === UNDEFINED_VALUE ? undefined : providerInstance;\n }\n return\n data._parent.get(depDef.token, notFoundValue);\n}\n\n * @param {?} ngModule\n * @param {?} providerDef\n * @return {?} \n\nfunction _createProviderInstance$1(ngModule, providerDef) {\n var /** @type {?} */\n injectable;\n switch (providerDef.flags & 201347067 /* Types */) {\n case 512 /* TypeClassProvider */:\n injectable = _createClass(ngModule, providerDef.value, providerDef.deps);\n break;\n case 1024 /*\n TypeFactoryProvider */:\n injectable = _callFactory(ngModule, providerDef.value, providerDef.deps);\n break;\n case 2048 /* TypeUseExistingProvider */:\n injectable = resolveNgModuleDep(ngModule,\n providerDef.deps[0]);\n break;\n case 256 /* TypeValueProvider */:\n injectable =\n providerDef.value;\n break;\n }\n return injectable === undefined ? UNDEFINED_VALUE :\n injectable;\n}\n\n * @param {?} ngModule\n * @param {?} ctor\n * @param {?} deps\n * @return {?} \n\nfunction _createClass(ngModule, ctor, deps) {\n var /** @type {?} */ len = deps.length;\n switch (len) {\n case 0:\n return new ctor();\n case 1:\n return new ctor(resolveNgModuleDep(ngModule,\n deps[0]));\n case 2:\n return new ctor(resolveNgModuleDep(ngModule, deps[0]),\n resolveNgModuleDep(ngModule, deps[1]));\n case 3:\n return new\n ctor(resolveNgModuleDep(ngModule, deps[0]), resolveNgModuleDep(ngModule, deps[1]),\n resolveNgModuleDep(ngModule, deps[2]));\n default:\n var /** @type {?} */ depValues = new\n Array(len);\n for (var /** @type {?} */ i = 0; i < len; i++) {\n depValues[i] =\n resolveNgModuleDep(ngModule, deps[i]);\n }\n return new (ctor.bind.apply(ctor, [void

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view;\n}\n/**\n * @param {?} view\n * @return {?}\n *\nfunction detachProjectedView(view) {\n if
(!!(view.state & 16 /* IsProjectedView */)) {\n return;\n }\n var /** @type {?} */ dvcElementData =
declaredViewContainer(view);\n if (dvcElementData) {\n var /** @type {?} */ projectedViews =
dvcElementData.template._projectedViews;\n if (projectedViews) {\n
removeFromArray(projectedViews, projectedViews.indexOf(view));\n Services.dirtyParentQueries(view);\n
 }\n }\n}\n/**\n * @param {?} elementData\n * @param {?} oldViewIndex\n * @param {?} newViewIndex\n *
@return {?}\n *\nfunction moveEmbeddedView(elementData, oldViewIndex, newViewIndex) {\n var /** @type
{?} */ embeddedViews = /** @type {?} */ ((elementData.viewContainer)._embeddedViews;\n var /** @type
{?} */ view = embeddedViews[oldViewIndex];\n removeFromArray(embeddedViews, oldViewIndex);\n if
(newViewIndex == null) {\n newViewIndex = embeddedViews.length;\n }\n addToArray(embeddedViews,
newViewIndex, view);\n // Note: Don't need to change projectedViews as the order in there\n // as always
invalid...\n Services.dirtyParentQueries(view);\n renderDetachView(view);\n var /** @type {?} */ prevView =
newViewIndex > 0 ? embeddedViews[newViewIndex - 1] : null;\n renderAttachEmbeddedView(elementData,
prevView, view);\n return view;\n}\n/**\n * @param {?} elementData\n * @param {?} prevView\n * @param
{?} view\n * @return {?}\n *\nfunction renderAttachEmbeddedView(elementData, prevView, view) {\n var /**
@type {?} */ prevRenderNode = prevView ? renderNode(prevView, /** @type {?} */
((prevView.def.lastRenderRootNode))) :\n elementData.renderElement;\n var /** @type {?} */ parentNode =
view.renderer.parentNode(prevRenderNode);\n var /** @type {?} */ nextSibling =
view.renderer.nextSibling(prevRenderNode);\n // Note: We can't check if `nextSibling` is present, as on
WebWorkers it will always be!\n // However, browsers automatically do `appendChild` when there is no
`nextSibling`.\n visitRootRenderNodes(view, 2 /* InsertBefore */, parentNode, nextSibling, undefined);\n}\n/**\n
* @param {?} view\n * @return {?}\n *\nfunction renderDetachView(view) {\n visitRootRenderNodes(view, 3
/* RemoveChild */, null, null, undefined);\n}\n/**\n * @param {?} arr\n * @param {?} index\n * @param {?}
value\n * @return {?}\n *\nfunction addToArray(arr, index, value) {\n // perf: array.push is faster than
array.splice!\n if (index >= arr.length) {\n arr.push(value);\n }\n else {\n arr.splice(index, 0, value);\n
 }\n}\n/**\n * @param {?} arr\n * @param {?} index\n * @return {?}\n *\nfunction removeFromArray(arr, index)
{\n // perf: array.pop is faster than array.splice!\n if (index >= arr.length - 1) {\n arr.pop();\n }\n else {\n
 arr.splice(index, 1);\n }\n}\n}\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked
by tsc\n *\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\nvar
EMPTY_CONTEXT = new Object();\n/**\n * @param {?} selector\n * @param {?} componentType\n * @param
{?} viewDefFactory\n * @param {?} inputs\n * @param {?} outputs\n * @param {?} ngContentSelectors\n *
@return {?}\n *\nfunction createComponentFactory(selector, componentType, viewDefFactory, inputs, outputs,
ngContentSelectors) {\n return new ComponentFactory_(selector, componentType, viewDefFactory, inputs,
outputs, ngContentSelectors);\n}\n/**\n * @param {?} componentFactory\n * @return {?}\n *\nfunction
getComponentViewDefinitionFactory(componentFactory) {\n return (/** @type {?} */
(componentFactory)).viewDefFactory;\n}\nvar ComponentFactory_ = /** @class */ (function (_super) {\n
__extends(ComponentFactory_, _super);\n function ComponentFactory_(selector, componentType,
viewDefFactory, _inputs, _outputs, ngContentSelectors) {\n var _this =\n // Attention: this ctor is called as
top level function.\n // Putting any logic in here will destroy closure tree shaking!\n _super.call(this) ||
this;\n _this.selector = selector;\n _this.componentType = componentType;\n _this._inputs = _inputs;\n
 _this._outputs = _outputs;\n _this.ngContentSelectors = ngContentSelectors;\n _this.viewDefFactory =
viewDefFactory;\n return _this;\n }\n Object.defineProperty(ComponentFactory_.prototype, "inputs", {\n
get: /**\n * @return {?}\n *\n function () {\n var /** @type {?} */ inputsArr = [];\n
 var /** @type {?} */ inputs = /** @type {?} */ ((this._inputs));\n for (var /** @type {?} */ propName in
inputs) {\n var /** @type {?} */ templateName = inputs[propName];\n inputsArr.push({
propName: propName, templateName: templateName });\n }\n return inputsArr;\n },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(ComponentFactory_.prototype,

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"outputs", {\n get: /**\n * @return {?} \n *\n function () {\n var /** @type {?} */\n outputsArr = [];\n for (var /** @type {?} */ propName in this._outputs) {\n var /** @type {?} */\n templateName = this._outputs[propName];\n outputsArr.push({ propName: propName, templateName:\n templateName });\n }\n return outputsArr;\n },\n enumerable: true,\n configurable: true\n });\n /**\n * Creates a new component.\n *\n * Creates a new component.\n * @param {?} injector\n * @param {?=} projectableNodes\n * @param {?=} rootSelectorOrNode\n * @param {?=} NgModule\n * @return {?} \n *\n ComponentFactory_.prototype.create = /**\n * Creates a new\n component.\n * @param {?} injector\n * @param {?=} projectableNodes\n * @param {?=} rootSelectorOrNode\n * @param {?=} NgModule\n * @return {?} \n *\n function (injector,\n projectableNodes, rootSelectorOrNode, NgModule) {\n if (!NgModule) {\n throw new Error('NgModule\n should be provided');\n }\n var /** @type {?} */ viewDef = resolveDefinition(this.viewDefFactory);\n var /** @type {?} */ componentNodeIndex = /** @type {?} */ ((/** @type {?} */\n ((viewDef.nodes[0].element)).componentProvider)).nodeIndex;\n var /** @type {?} */ view =\n Services.createRootView(injector, projectableNodes || [], rootSelectorOrNode, viewDef, NgModule,\n EMPTY_CONTEXT);\n var /** @type {?} */ component = asProviderData(view,\n componentNodeIndex).instance;\n if (rootSelectorOrNode) {\n view.renderer.setAttribute(asElementData(view, 0).renderElement, 'ng-version', VERSION.full);\n }\n return new ComponentRef_(view, new ViewRef_(view), component);\n }; \n return\n ComponentFactory_;\n (ComponentFactory));\n nvar ComponentRef_ = /** @class */ (function (_super) {\n __extends(ComponentRef_, _super);\n function ComponentRef_(_view, _viewRef, _component) {\n var _this\n = _super.call(this) || this;\n _this._view = _view;\n _this._viewRef = _viewRef;\n _this._component =\n _component;\n _this._elDef = _this._view.def.nodes[0];\n _this.hostView = _viewRef;\n _this.changeDetectorRef = _viewRef;\n _this.instance = _component;\n return _this;\n }\n Object.defineProperty(ComponentRef_.prototype, "location", {\n get: /**\n * @return {?} \n *\n function () {\n return new ElementRef(asElementData(this._view, this._elDef.nodeIndex).renderElement);\n },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(ComponentRef_.prototype,\n "injector", {\n get: /**\n * @return {?} \n *\n function () { return new Injector_(this._view,\n this._elDef); },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(ComponentRef_.prototype, "componentType", {\n get: /**\n * @return {?} \n *\n * \n function () { return /** @type {?} */ (this._component.constructor); },\n enumerable: true,\n configurable: true\n });\n /**\n * @return {?} \n *\n ComponentRef_.prototype.destroy = /**\n * \n * @return {?} \n *\n function () { this._viewRef.destroy(); }; \n /**\n * @param {?} callback\n * @return\n {?} \n *\n ComponentRef_.prototype.onDestroy = /**\n * @param {?} callback\n * @return {?} \n *\n function (callback) { this._viewRef.onDestroy(callback); }; \n return ComponentRef_;\n } (ComponentRef));\n n/**\n * @param {?} view\n * @param {?} elDef\n * @param {?} elData\n * @return {?} \n *\n function\n createViewContainerData(view, elDef, elData) {\n return new ViewContainerRef_(view, elDef, elData);\n }\n nvar\n ViewContainerRef_ = /** @class */ (function () {\n function ViewContainerRef_(_view, _elDef, _data) {\n this._view = _view;\n this._elDef = _elDef;\n this._data = _data;\n /**\n * \n * @internal\n *\n this._embeddedViews = [];\n }\n Object.defineProperty(ViewContainerRef_.prototype, "element", {\n get: /**\n * @return {?} \n *\n function () { return new ElementRef(this._data.renderElement); },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(ViewContainerRef_.prototype,\n "injector", {\n get: /**\n * @return {?} \n *\n function () { return new Injector_(this._view,\n this._elDef); },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(ViewContainerRef_.prototype, "parentInjector", {\n get: /**\n * @return {?} \n *\n * \n function () {\n var /** @type {?} */ view = this._view;\n var /** @type {?} */ elDef =\n this._elDef.parent;\n while (!elDef && view) {\n elDef = viewParentEl(view);\n view =\n /** @type {?} */ ((view.parent));\n }\n return view ? new Injector_(view, elDef) : new\n Injector_(this._view, null);\n },\n enumerable: true,\n configurable: true\n });\n /**\n * @return

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{?}\n *\n ViewContainerRef_.prototype.clear = /**\n * @return {?}\n *\n function () {\n var /**
@type {?} */ len = this._embeddedViews.length;\n for (var /** @type {?} */ i = len - 1; i >= 0; i--) {\n
var /** @type {?} */ view = /** @type {?} */ ((detachEmbeddedView(this._data, i));\n
Services.destroyView(view);\n }\n };\n /**\n * @param {?} index\n * @return {?}\n *\n
ViewContainerRef_.prototype.get = /**\n * @param {?} index\n * @return {?}\n *\n function (index) {\n
var /** @type {?} */ view = this._embeddedViews[index];\n if (view) {\n var /** @type {?} */ ref =
new ViewRef_(view);\n ref.attachToViewContainerRef(this);\n return ref;\n }\n return null;\n
};\n Object.defineProperty(ViewContainerRef_.prototype, "length", {\n get: /**\n * @return {?}\n
*\n function () { return this._embeddedViews.length; },\n enumerable: true,\n configurable: true\n
});\n /**\n * @template C\n * @param {?} templateRef\n * @param {?=} context\n * @param {?=}
index\n * @return {?}\n *\n ViewContainerRef_.prototype.createEmbeddedView = /**\n * @template
C\n * @param {?} templateRef\n * @param {?=} context\n * @param {?=} index\n * @return {?}\n
*\n function (templateRef, context, index) {\n var /** @type {?} */ viewRef =
templateRef.createEmbeddedView(context || /** @type {?} */ ({}));\n this.insert(viewRef, index);\n return
viewRef;\n };\n /**\n * @template C\n * @param {?} componentFactory\n * @param {?=} index\n *
@param {?=} injector\n * @param {?=} projectableNodes\n * @param {?=} ngModuleRef\n * @return
{?}\n *\n ViewContainerRef_.prototype.createComponent = /**\n * @template C\n * @param {?}
componentFactory\n * @param {?=} index\n * @param {?=} injector\n * @param {?=} projectableNodes\n
* @param {?=} ngModuleRef\n * @return {?}\n *\n function (componentFactory, index, injector,
projectableNodes, ngModuleRef) {\n var /** @type {?} */ contextInjector = injector || this.parentInjector;\n
if (!ngModuleRef && !(componentFactory instanceof ComponentFactoryBoundToModule)) {\n
ngModuleRef = contextInjector.get(ngModuleRef);\n }\n var /** @type {?} */ componentRef =
componentFactory.create(contextInjector, projectableNodes, undefined, ngModuleRef);\n
this.insert(componentRef.hostView, index);\n return componentRef;\n };\n /**\n * @param {?}
viewRef\n * @param {?=} index\n * @return {?}\n *\n ViewContainerRef_.prototype.insert = /**\n *
@param {?} viewRef\n * @param {?=} index\n * @return {?}\n *\n function (viewRef, index) {\n if
(viewRef.destroyed) {\n throw new Error('Cannot insert a destroyed View in a ViewContainer!');\n }\n
var /** @type {?} */ viewRef_ = /** @type {?} */ (viewRef);\n var /** @type {?} */ viewData =
viewRef._view;\n attachEmbeddedView(this._view, this._data, index, viewData);\n
viewRef_.attachToViewContainerRef(this);\n return viewRef;\n };\n /**\n * @param {?} viewRef\n
* @param {?} currentIndex\n * @return {?}\n *\n ViewContainerRef_.prototype.move = /**\n * @param
{?} viewRef\n * @param {?} currentIndex\n * @return {?}\n *\n function (viewRef, currentIndex) {\n
if (viewRef.destroyed) {\n throw new Error('Cannot move a destroyed View in a ViewContainer!');\n
}\n var /** @type {?} */ previousIndex = this._embeddedViews.indexOf(viewRef._view);\n
moveEmbeddedView(this._data, previousIndex, currentIndex);\n return viewRef;\n };\n /**\n * @param
{?} viewRef\n * @return {?}\n *\n ViewContainerRef_.prototype.indexOf = /**\n * @param {?}
viewRef\n * @return {?}\n *\n function (viewRef) {\n return this._embeddedViews.indexOf((/** @type
{?} */ (viewRef))._view);\n };\n /**\n * @param {?=} index\n * @return {?}\n *\n
ViewContainerRef_.prototype.remove = /**\n * @param {?=} index\n * @return {?}\n *\n function
(index) {\n var /** @type {?} */ viewData = detachEmbeddedView(this._data, index);\n if (viewData) {\n
Services.destroyView(viewData);\n }\n };\n /**\n * @param {?=} index\n * @return {?}\n *\n
ViewContainerRef_.prototype.detach = /**\n * @param {?=} index\n * @return {?}\n *\n function
(index) {\n var /** @type {?} */ view = detachEmbeddedView(this._data, index);\n return view ? new
ViewRef_(view) : null;\n };\n return ViewContainerRef_;\n };\n /**\n * @param {?} view\n * @return
{?}\n *\n function createChangeDetectorRef(view) {\n return new ViewRef_(view);\n }\n var ViewRef_ = /** @class */
(function () {\n function ViewRef_(view) {\n this._view = view;\n this._viewContainerRef = null;\n
this._appRef = null;\n }\n Object.defineProperty(ViewRef_.prototype, "rootNodes", {\n get: /**\n *
@return {?}\n *\n function () { return rootRenderNodes(this._view); },\n enumerable: true,\n

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configurable: true\n });\n Object.defineProperty(ViewRef_.prototype, \"context\", {\n get: /**\n *\n * @return {?}\n */\n function () { return this._view.context; },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(ViewRef_.prototype, \"destroyed\", {\n get: /**\n *\n * @return {?}\n */\n function () { return (this._view.state & 128 /* Destroyed */) !== 0; },\n enumerable: true,\n configurable: true\n });\n /**\n * @return {?}\n */\n ViewRef_.prototype.markForCheck = /**\n * @return {?}\n */\n function () { markParentViewsForCheck(this._view); }\n /**\n * @return {?}\n */\n ViewRef_.prototype.detach = /**\n * @return {?}\n */\n function () { this._view.state &= ~4 /* Attached */; }\n /**\n * @return {?}\n */\n ViewRef_.prototype.detectChanges = /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ fs = this._view.root.rendererFactory;\n if (fs.begin) {\n fs.begin();\n }\n try {\n Services.checkAndUpdateView(this._view);\n }\n finally {\n if (fs.end) {\n fs.end();\n }\n }\n }\n /**\n * @return {?}\n */\n ViewRef_.prototype.checkNoChanges = /**\n * @return {?}\n */\n function () {\n Services.checkNoChangesView(this._view); }\n /**\n * @return {?}\n */\n ViewRef_.prototype.reattach = /**\n * @return {?}\n */\n function () { this._view.state |= 4 /* Attached */; }\n /**\n * @param {?}\n * @return {?}\n */\n ViewRef_.prototype.onDestroy = /**\n * @param {?} callback\n * @return {?}\n */\n function (callback) {\n if (!this._view.disposables) {\n this._view.disposables = [];\n }\n this._view.disposables.push(/** @type {?} */ (callback)); }\n /**\n * @return {?}\n */\n ViewRef_.prototype.destroy = /**\n * @return {?}\n */\n function () {\n if (this._appRef) {\n this._appRef.detachView(this);\n }\n else if (this._viewContainerRef) {\n this._viewContainerRef.detach(this._viewContainerRef.indexOf(this));\n }\n Services.destroyView(this._view);\n }\n /**\n * @return {?}\n */\n ViewRef_.prototype.detachFromAppRef = /**\n * @return {?}\n */\n function () {\n this._appRef = null;\n renderDetachView(this._view);\n Services.dirtyParentQueries(this._view);\n }\n /**\n * @param {?} appRef\n * @return {?}\n */\n ViewRef_.prototype.attachToAppRef = /**\n * @param {?} appRef\n * @return {?}\n */\n function (appRef) {\n if (this._viewContainerRef) {\n throw new Error(\"This view is already attached to a ViewContainer!\");\n }\n this._appRef = appRef;\n }\n /**\n * @param {?} vcRef\n * @return {?}\n */\n ViewRef_.prototype.attachToViewContainerRef = /**\n * @param {?} vcRef\n * @return {?}\n */\n function (vcRef) {\n if (this._appRef) {\n throw new Error(\"This view is already attached directly to the ApplicationRef!\");\n }\n this._viewContainerRef = vcRef;\n }\n return ViewRef_(this);\n}\n/**\n * @param {?} view\n * @param {?} def\n * @return {?}\n */\nfunction createTemplateData(view, def) {\n return new TemplateRef_(view, def);\n}\nvar TemplateRef_ = /**\n * @class */\n(function (_super) {\n __extends(TemplateRef_, _super);\n function TemplateRef_(_parentView, _def) {\n var _this = _super.call(this) || this;\n _this._parentView = _parentView;\n _this._def = _def;\n return _this;\n }\n /**\n * @param {?} context\n * @return {?}\n */\n TemplateRef_.prototype.createEmbeddedView = /**\n * @param {?} context\n * @return {?}\n */\n function (context) {\n return new ViewRef_(Services.createEmbeddedView(this._parentView, this._def, /**\n * @type {?} */ ((/** @type {?} */ ((this._def.element)).template)), context));\n }\n Object.defineProperty(TemplateRef_.prototype, \"elementRef\", {\n get: /**\n *\n * @return {?}\n */\n function () {\n return new ElementRef(asElementData(this._parentView, this._def.nodeType).renderElement);\n },\n enumerable: true,\n configurable: true\n });\n return TemplateRef_(this);\n}\n/**\n * @param {?} view\n * @param {?} elDef\n * @return {?}\n */\nfunction createInjector(view, elDef) {\n return new Injector_(view, elDef);\n}\nvar Injector_ = /**\n * @class */\n(function () {\n function Injector_(view, elDef) {\n this.view = view;\n this.elDef = elDef;\n }\n /**\n * @param {?} token\n * @param {?=} notFoundValue\n * @return {?}\n */\n Injector_.prototype.get = /**\n * @param {?} token\n * @param {?=} notFoundValue\n * @return {?}\n */\n function (token, notFoundValue) {\n if (notFoundValue === void 0) {\n notFoundValue = Injector.THROW_IF_NOT_FOUND;\n }\n var /** @type {?} */ allowPrivateServices = this.elDef ? (this.elDef.flags & 33554432 /* ComponentView */) !== 0 : false;\n return Services.resolveDep(this.view, this.elDef, allowPrivateServices, { flags: 0 /* None */,\n
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 * @param {?} callback\n * @return {?}\n */\n function (renderElement, name, callback) {\n return
this.delegate.listen(renderElement, name, /** @type {?} */ (callback));\n };\n /**\n * @param {?} target\n * @param {?} name\n * @param {?} callback\n * @return {?}\n */\n RendererAdapter.prototype.listenGlobal = /**\n * @param {?} target\n * @param {?} name\n * @param
{?} callback\n * @return {?}\n */\n function (target, name, callback) {\n return this.delegate.listen(target,
name, /** @type {?} */ (callback));\n };\n /**\n * @param {?} renderElement\n * @param {?}
propertyName\n * @param {?} propertyValue\n * @return {?}\n */\n RendererAdapter.prototype.setElementProperty = /**\n * @param {?} renderElement\n * @param {?}
propertyName\n * @param {?} propertyValue\n * @return {?}\n */\n function (renderElement,
propertyName, propertyValue) {\n this.delegate.setProperty(renderElement, propertyName, propertyValue);\n
 };\n /**\n * @param {?} renderElement\n * @param {?} namespaceAndName\n * @param {?}
attributeValue\n * @return {?}\n */\n RendererAdapter.prototype.setElementAttribute = /**\n * @param
{?} renderElement\n * @param {?} namespaceAndName\n * @param {?} attributeValue\n * @return {?}\n
 */\n function (renderElement, namespaceAndName, attributeValue) {\n var _a =
splitNamespace(namespaceAndName), ns = _a[0], name = _a[1];\n if (attributeValue != null) {\n
this.delegate.setAttribute(renderElement, name, attributeValue, ns);\n }\n else {\n
this.delegate.removeAttribute(renderElement, name, ns);\n }\n };\n /**\n * @param {?} renderElement\n
 * @param {?} propertyName\n * @param {?} propertyValue\n * @return {?}\n */\n RendererAdapter.prototype.setBindingDebugInfo = /**\n * @param {?} renderElement\n * @param {?}
propertyName\n * @param {?} propertyValue\n * @return {?}\n */\n function (renderElement,
propertyName, propertyValue) { };;\n /**\n * @param {?} renderElement\n * @param {?} className\n *
@param {?} isAdd\n * @return {?}\n */\n RendererAdapter.prototype.setElementClass = /**\n * @param
{?} renderElement\n * @param {?} className\n * @param {?} isAdd\n * @return {?}\n */\n function
(renderElement, className, isAdd) {\n if (isAdd) {\n this.delegate.addClass(renderElement,
className);\n }\n else {\n this.delegate.removeClass(renderElement, className);\n }\n
 };\n /**\n * @param {?} renderElement\n * @param {?} styleName\n * @param {?} styleValue\n * @return
{?}\n */\n RendererAdapter.prototype.setElementStyle = /**\n * @param {?} renderElement\n * @param
{?} styleName\n * @param {?} styleValue\n * @return {?}\n */\n function (renderElement, styleName,
styleValue) {\n if (styleValue != null) {\n this.delegate.setStyle(renderElement, styleName,
styleValue);\n }\n else {\n this.delegate.removeStyle(renderElement, styleName);\n }\n
 };\n /**\n * @param {?} renderElement\n * @param {?} methodName\n * @param {?} args\n * @return
{?}\n */\n RendererAdapter.prototype.invokeElementMethod = /**\n * @param {?} renderElement\n *
@param {?} methodName\n * @param {?} args\n * @return {?}\n */\n function (renderElement,
methodName, args) {\n /** @type {?} */ (renderElement)[methodName].apply(renderElement, args);\n };\n
 /**\n * @param {?} renderNode\n * @param {?} text\n * @return {?}\n */\n RendererAdapter.prototype.setText = /**\n * @param {?} renderNode\n * @param {?} text\n * @return
{?}\n */\n function (renderNode$$1, text) {\n this.delegate.setValue(renderNode$$1, text); }\n /**\n *
 * @return {?}\n */\n RendererAdapter.prototype.animate = /**\n * @return {?}\n */\n function () {\n throw
new Error('Renderer.animate is no longer supported!'); }\n return RendererAdapter;\n});\n /**\n * @param {?}
moduleType\n * @param {?} parent\n * @param {?} bootstrapComponents\n * @param {?} def\n * @return {?}\n
 */\n function createNgModuleRef(moduleType, parent, bootstrapComponents, def) {\n return new
NgModuleRef_(moduleType, parent, bootstrapComponents, def);\n }\n var NgModuleRef_ = /** @class */ (function
() {\n function NgModuleRef_(moduleType, parent, bootstrapComponents, def) {\n this._moduleType =
moduleType;\n this._parent = parent;\n this._bootstrapComponents = bootstrapComponents;\n
 this._def = def;\n this._destroyListeners = [];\n this._destroyed = false;\n this.injector = this;\n
 initNgModule(this);\n }\n /**\n * @param {?} token\n * @param {?=} notFoundValue\n * @return
{?}\n */\n NgModuleRef_.prototype.get = /**\n * @param {?} token\n * @param {?=} notFoundValue\n
 * @return {?}\n */\n function (token, notFoundValue) {\n if (notFoundValue === void 0) {\n

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};\n\n/**\n * @param {?} view\n * @param {?} def\n * @return {?}\n *\nfunction createProviderInstance(view,
def) {\n return _createProviderInstance(view, def);\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @return {?}\n *\nfunction createPipeInstance(view, def) {\n // deps are looked up from component.\n var /**
 * @type {?} */ compView = view;\n while (compView.parent && !isComponentView(compView)) {\n
 compView = compView.parent;\n }\n // pipes can see the private services of the component\n var /** @type
 * {?} */ allowPrivateServices = true;\n // pipes are always eager and classes!\n return createClass(/** @type {?}
 * */ ((compView.parent)), /** @type {?} */ ((viewParentEl(compView))), allowPrivateServices, /** @type {?} */
 * ((def.provider)).value, /** @type {?} */ ((def.provider)).deps);\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @return {?}\n *\nfunction createDirectiveInstance(view, def) {\n // components can see other private services,
 other directives can't.\n var /** @type {?} */ allowPrivateServices = (def.flags & 32768 /* Component */) > 0;\n
 // directives are always eager and classes!\n var /** @type {?} */ instance = createClass(view, /** @type {?} */
 * ((def.parent)), allowPrivateServices, /** @type {?} */ ((def.provider)).value, /** @type {?} */
 * ((def.provider)).deps);\n if (def.outputs.length) {\n for (var /** @type {?} */ i = 0; i < def.outputs.length; i++)
 {\n var /** @type {?} */ output = def.outputs[i];\n var /** @type {?} */ subscription = instance[/**
 * @type {?} */ ((output.propName)).subscribe(eventHandlerClosure(view, /** @type {?} */
 * ((def.parent)).nodeIndex, output.eventName)); /** @type {?} */\n ((view.disposables))[def.outputIndex + i]
 = subscription.unsubscribe.bind(subscription);\n }\n }\n return instance;\n}\n\n/**\n * @param {?} view\n *
 * @param {?} index\n * @param {?} eventName\n * @return {?}\n *\nfunction eventHandlerClosure(view, index,
 eventName) {\n return function (event) { return dispatchEvent(view, index, eventName, event); };}\n}\n\n/**\n *
 * @param {?} view\n * @param {?} def\n * @param {?} v0\n * @param {?} v1\n * @param {?} v2\n * @param
 * {?} v3\n * @param {?} v4\n * @param {?} v5\n * @param {?} v6\n * @param {?} v7\n * @param {?} v8\n *
 * @param {?} v9\n * @return {?}\n *\nfunction checkAndUpdateDirectiveInline(view, def, v0, v1, v2, v3, v4, v5,
 v6, v7, v8, v9) {\n var /** @type {?} */ providerData = asProviderData(view, def.nodeIndex);\n var /** @type
 * {?} */ directive = providerData.instance;\n var /** @type {?} */ changed = false;\n var /** @type {?} */
 changes = /** @type {?} */ ((undefined));\n var /** @type {?} */ bindLen = def.bindings.length;\n if (bindLen
 > 0 && checkBinding(view, def, 0, v0)) {\n changed = true;\n changes = updateProp(view, providerData,
 def, 0, v0, changes);\n }\n if (bindLen > 1 && checkBinding(view, def, 1, v1)) {\n changed = true;\n
 changes = updateProp(view, providerData, def, 1, v1, changes);\n }\n if (bindLen > 2 && checkBinding(view,
 def, 2, v2)) {\n changed = true;\n changes = updateProp(view, providerData, def, 2, v2, changes);\n }\n
 if (bindLen > 3 && checkBinding(view, def, 3, v3)) {\n changed = true;\n changes = updateProp(view,
 providerData, def, 3, v3, changes);\n }\n if (bindLen > 4 && checkBinding(view, def, 4, v4)) {\n changed =
 true;\n changes = updateProp(view, providerData, def, 4, v4, changes);\n }\n if (bindLen > 5 &&
 checkBinding(view, def, 5, v5)) {\n changed = true;\n changes = updateProp(view, providerData, def, 5, v5,
 changes);\n }\n if (bindLen > 6 && checkBinding(view, def, 6, v6)) {\n changed = true;\n changes =
 updateProp(view, providerData, def, 6, v6, changes);\n }\n if (bindLen > 7 && checkBinding(view, def, 7, v7))
 {\n changed = true;\n changes = updateProp(view, providerData, def, 7, v7, changes);\n }\n if (bindLen
 > 8 && checkBinding(view, def, 8, v8)) {\n changed = true;\n changes = updateProp(view, providerData,
 def, 8, v8, changes);\n }\n if (bindLen > 9 && checkBinding(view, def, 9, v9)) {\n changed = true;\n
 changes = updateProp(view, providerData, def, 9, v9, changes);\n }\n if (changes) {\n
 directive.ngOnChanges(changes);\n }\n if ((def.flags & 65536 /* OnInit */) &&\n shouldCallLifecycleInitHook(view, 256 /* initState_CallingOnInit */, def.nodeIndex)) {\n
 directive.ngOnInit();\n }\n if (def.flags & 262144 /* DoCheck */) {\n directive.ngDoCheck();\n }\n
 return changed;\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @param {?} values\n * @return {?}\n *\n
function checkAndUpdateDirectiveDynamic(view, def, values) {\n var /** @type {?} */ providerData =
 asProviderData(view, def.nodeIndex);\n var /** @type {?} */ directive = providerData.instance;\n var /**
 * @type {?} */ changed = false;\n var /** @type {?} */ changes = /** @type {?} */ ((undefined));\n for (var /**
 * @type {?} */ i = 0; i < values.length; i++) {\n if (checkBinding(view, def, i, values[i])) {\n changed =
 true;\n changes = updateProp(view, providerData, def, i, values[i], changes);\n }\n }\n if (changes)

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{\n directive.ngOnChanges(changes);\n }\n if ((def.flags & 65536 /* OnInit */) &&\n shouldCallLifecycleInitHook(view, 256 /* InitState_CallingOnInit */, def.nodeIndex)) {\n
directive.ngOnInit();\n }\n if (def.flags & 262144 /* DoCheck */) {\n directive.ngDoCheck();\n }\n
return changed;\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @return {?} */\n */\nfunction
_createProviderInstance(view, def) {\n // private services can see other private services\n var /** @type {?} */
allowPrivateServices = (def.flags & 8192 /* PrivateProvider */) > 0;\n var /** @type {?} */ providerDef =
def.provider;\n switch (def.flags & 201347067 /* Types */) {\n case 512 /* TypeClassProvider */:\n
return createClass(view, /** @type {?} */ ((def.parent)), allowPrivateServices, /** @type {?} */
((providerDef).value, /** @type {?} */ ((providerDef).deps));\n case 1024 /* TypeFactoryProvider */:\n
return callFactory(view, /** @type {?} */ ((def.parent)), allowPrivateServices, /** @type {?} */
((providerDef).value, /** @type {?} */ ((providerDef).deps));\n case 2048 /* TypeUseExistingProvider */:\n
return resolveDep(view, /** @type {?} */ ((def.parent)), allowPrivateServices, /** @type {?} */
((providerDef).deps[0]));\n case 256 /* TypeValueProvider */:\n return /** @type {?} */
((providerDef).value);\n }\n}\n\n/**\n * @param {?} view\n * @param {?} elDef\n * @param {?}
allowPrivateServices\n * @param {?} ctor\n * @param {?} deps\n * @return {?} */\n */\nfunction createClass(view,
elDef, allowPrivateServices, ctor, deps) {\n var /** @type {?} */ len = deps.length;\n switch (len) {\n case
0:\n return new ctor();\n case 1:\n return new ctor(resolveDep(view, elDef, allowPrivateServices,
deps[0]));\n case 2:\n return new ctor(resolveDep(view, elDef, allowPrivateServices, deps[0]),
resolveDep(view, elDef, allowPrivateServices, deps[1]));\n case 3:\n return new ctor(resolveDep(view,
elDef, allowPrivateServices, deps[0]), resolveDep(view, elDef, allowPrivateServices, deps[1]), resolveDep(view,
elDef, allowPrivateServices, deps[2]));\n default:\n var /** @type {?} */ depValues = new Array(len);\n
for (var /** @type {?} */ i = 0; i < len; i++) {\n depValues[i] = resolveDep(view, elDef,
allowPrivateServices, deps[i]);\n }\n return new (ctor.bind.apply(ctor, [void
0].concat(depValues)))(\n)\n}\n\n/**\n * @param {?} view\n * @param {?} elDef\n * @param {?}
allowPrivateServices\n * @param {?} factory\n * @param {?} deps\n * @return {?} */\n */\nfunction
callFactory(view, elDef, allowPrivateServices, factory, deps) {\n var /** @type {?} */ len = deps.length;\n
switch (len) {\n case 0:\n return factory();\n case 1:\n return factory(resolveDep(view, elDef,
allowPrivateServices, deps[0]));\n case 2:\n return factory(resolveDep(view, elDef, allowPrivateServices,
deps[0]), resolveDep(view, elDef, allowPrivateServices, deps[1]));\n case 3:\n return
factory(resolveDep(view, elDef, allowPrivateServices, deps[0]), resolveDep(view, elDef, allowPrivateServices,
deps[1]), resolveDep(view, elDef, allowPrivateServices, deps[2]));\n default:\n var /** @type {?} */
depValues = Array(len);\n for (var /** @type {?} */ i = 0; i < len; i++) {\n depValues[i] =
resolveDep(view, elDef, allowPrivateServices, deps[i]);\n }\n return factory.apply(void 0,
depValues);\n }\n}\n\n// This default value is when checking the hierarchy for a token.\n// It means both:\n// - the
token is not provided by the current injector,\n// - only the element injectors should be checked (ie do not check
module injectors\n//\n// mod1\n// /\n// el1 mod2\n// \\\n// el2\n//\n// When requesting
el2.injector.get(token), we should check in the following order and return the\n// first found value:\n// -
el2.injector.get(token, default)\n// - el1.injector.get(token,
NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR) -> do not check the module\n// -
mod2.injector.get(token, default)\n\nvar NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR = {};\n\n/**\n *
@param {?} view\n * @param {?} elDef\n * @param {?} allowPrivateServices\n * @param {?} depDef\n *
@param {?=} notFoundValue\n * @return {?} */\n */\nfunction resolveDep(view, elDef, allowPrivateServices,
depDef, notFoundValue) {\n if (notFoundValue === void 0) { notFoundValue =
Injector.THROW_IF_NOT_FOUND; }\n if (depDef.flags & 8 /* Value */) {\n return depDef.token;\n }\n
var /** @type {?} */ startView = view;\n if (depDef.flags & 2 /* Optional */) {\n notFoundValue = null;\n
}\n var /** @type {?} */ tokenKey$$1 = depDef.tokenKey;\n if (tokenKey$$1 ===
ChangeDetectorRef.TokenKey) {\n // directives on the same element as a component should be able to control
the change detector\n // of that component as well.\n allowPrivateServices = !(elDef && /** @type {?} */

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((elDef.element)).componentView);\n }\n if (elDef && (depDef.flags & 1 /* SkipSelf */) {\n
allowPrivateServices = false;\n elDef = /** @type {?} */ ((elDef.parent));\n }\n while (view) {\n if
(elDef) {\n switch (tokenKey$$1) {\n case RendererV1TokenKey: {\n var /** @type
{?} */ compView = findCompView(view, elDef, allowPrivateServices);\n return
createRendererV1(compView);\n }\n case Renderer2TokenKey: {\n var /** @type
{?} */ compView = findCompView(view, elDef, allowPrivateServices);\n return compView.renderer;\n
 }\n case ElementRefTokenKey:\n return new ElementRef(asElementData(view,
elDef.nodeType).renderElement);\n case ViewContainerRefTokenKey:\n return
asElementData(view, elDef.nodeType).viewContainer;\n case TemplateRefTokenKey: {\n if
(/** @type {?} */ ((elDef.element)).template) {\n return asElementData(view,
elDef.nodeType).template;\n }\n break;\n }\n case
ChangeDetectorRefTokenKey: {\n var /** @type {?} */ cdView = findCompView(view, elDef,
allowPrivateServices);\n return createChangeDetectorRef(cdView);\n }\n case
InjectorRefTokenKey:\n return createInjector(view, elDef);\n default:\n var /**
@type {?} */ providerDef_1 = /** @type {?} */ (((allowPrivateServices ? /** @type {?} */
((elDef.element)).allProviders : /** @type {?} */ ((elDef.element)).publicProviders)))[tokenKey$$1];\n
if (providerDef_1) {\n var /** @type {?} */ providerData = asProviderData(view,
providerDef_1.nodeType);\n if (!providerData) {\n providerData = { instance:
_createProviderInstance(view, providerDef_1) };;\n view.nodes[providerDef_1.nodeType] = /**
@type {?} */ (providerData);\n }\n return providerData.instance;\n }\n
 }\n }\n allowPrivateServices = isComponentView(view);\n elDef = /** @type {?} */
((viewParentEl(view)));\n view = /** @type {?} */ ((view.parent));\n }\n var /** @type {?} */ value =
startView.root.injector.get(depDef.token, NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR);\n if (value
!== NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR ||\n notFoundValue ===
NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR) {\n // Return the value from the root element
injector when\n // - it provides it\n // (value !==
NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR)\n // - the module injector should not be checked\n
 // (notFoundValue === NOT_FOUND_CHECK_ONLY_ELEMENT_INJECTOR)\n return value;\n }\n
return startView.root.ngModule.injector.get(depDef.token, notFoundValue);\n}\n\n/**\n * @param {?} view\n *
@param {?} elDef\n * @param {?} allowPrivateServices\n * @return {?}\n */\nfunction findCompView(view,
elDef, allowPrivateServices) {\n var /** @type {?} */ compView;\n if (allowPrivateServices) {\n
compView = asElementData(view, elDef.nodeType).componentView;\n }\n else {\n compView = view;\n
 while (compView.parent && !isComponentView(compView)) {\n compView = compView.parent;\n
 }\n }\n return compView;\n}\n\n/**\n * @param {?} view\n * @param {?} providerData\n * @param {?} def\n *
@param {?} bindingIdx\n * @param {?} value\n * @param {?} changes\n * @return {?}\n */\nfunction
updateProp(view, providerData, def, bindingIdx, value, changes) {\n if (def.flags & 32768 /* Component */) {\n
var /** @type {?} */ compView = asElementData(view, /** @type {?} */
((def.parent)).nodeIndex).componentView;\n if (compView.def.flags & 2 /* OnPush */) {\n
compView.state |= 8 /* ChecksEnabled */;\n }\n }\n var /** @type {?} */ binding =
def.bindings[bindingIdx];\n var /** @type {?} */ propName = /** @type {?} */ ((binding.name));\n // Note:
This is still safe with Closure Compiler as\n // the user passed in the property name as an object has to
`providerDef`,\n // so Closure Compiler will have renamed the property correctly already.\n
providerData.instance[propName] = value;\n if (def.flags & 524288 /* OnChanges */) {\n changes = changes
|| {};\n var /** @type {?} */ oldValue = WrappedValue.unwrap(view.oldValues[def.bindingIndex +
bindingIdx]);\n var /** @type {?} */ binding_1 = def.bindings[bindingIdx];\n changes[/** @type {?} */
((binding_1.nonMinifiedName))] =\n new SimpleChange(oldValue, value, (view.state & 2 /* FirstCheck */
!== 0);\n }\n view.oldValues[def.bindingIndex + bindingIdx] = value;\n return changes;\n }\n}\n\n/**
 * @param {?} view\n * @param {?} lifecycles\n * @return {?}\n */\nfunction callLifecycleHooksChildrenFirst(view,

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def, 0, v0))\n changed = true;\n if (bindLen > 1 && checkAndUpdateBinding(view, def, 1, v1))\n changed = true;\n if (bindLen > 2 && checkAndUpdateBinding(view, def, 2, v2))\n changed = true;\n if (bindLen > 3 && checkAndUpdateBinding(view, def, 3, v3))\n changed = true;\n if (bindLen > 4 && checkAndUpdateBinding(view, def, 4, v4))\n changed = true;\n if (bindLen > 5 && checkAndUpdateBinding(view, def, 5, v5))\n changed = true;\n if (bindLen > 6 && checkAndUpdateBinding(view, def, 6, v6))\n changed = true;\n if (bindLen > 7 && checkAndUpdateBinding(view, def, 7, v7))\n changed = true;\n if (bindLen > 8 && checkAndUpdateBinding(view, def, 8, v8))\n changed = true;\n if (bindLen > 9 && checkAndUpdateBinding(view, def, 9, v9))\n changed = true;\n if (changed) {\n var /** @type {?} */ data = asPureExpressionData(view, def.nodeIndex);\n var /** @type {?} */ value = void 0;\n switch (def.flags & 201347067 /* Types */) {\n case 32 /* TypePureArray */:\n value = new Array(bindings.length);\n if (bindLen > 0)\n value[0] = v0;\n if (bindLen > 1)\n value[1] = v1;\n if (bindLen > 2)\n value[2] = v2;\n if (bindLen > 3)\n value[3] = v3;\n if (bindLen > 4)\n value[4] = v4;\n if (bindLen > 5)\n value[5] = v5;\n if (bindLen > 6)\n value[6] = v6;\n if (bindLen > 7)\n value[7] = v7;\n if (bindLen > 8)\n value[8] = v8;\n if (bindLen > 9)\n value[9] = v9;\n break;\n case 64 /* TypePureObject */:\n value = {};\n if (bindLen > 0)\n value[/** @type {?} */ ((bindings[0].name))] = v0;\n if (bindLen > 1)\n value[/** @type {?} */ ((bindings[1].name))] = v1;\n if (bindLen > 2)\n value[/** @type {?} */ ((bindings[2].name))] = v2;\n if (bindLen > 3)\n value[/** @type {?} */ ((bindings[3].name))] = v3;\n if (bindLen > 4)\n value[/** @type {?} */ ((bindings[4].name))] = v4;\n if (bindLen > 5)\n value[/** @type {?} */ ((bindings[5].name))] = v5;\n if (bindLen > 6)\n value[/** @type {?} */ ((bindings[6].name))] = v6;\n if (bindLen > 7)\n value[/** @type {?} */ ((bindings[7].name))] = v7;\n if (bindLen > 8)\n value[/** @type {?} */ ((bindings[8].name))] = v8;\n if (bindLen > 9)\n value[/** @type {?} */ ((bindings[9].name))] = v9;\n break;\n case 128 /* TypePurePipe */:\n var /** @type {?} */ pipe = v0;\n switch (bindLen) {\n case 1:\n value = pipe.transform(v0);\n break;\n case 2:\n value = pipe.transform(v1);\n break;\n case 3:\n value = pipe.transform(v1, v2);\n break;\n case 4:\n value = pipe.transform(v1, v2, v3);\n break;\n case 5:\n value = pipe.transform(v1, v2, v3, v4);\n break;\n case 6:\n value = pipe.transform(v1, v2, v3, v4, v5);\n break;\n case 7:\n value = pipe.transform(v1, v2, v3, v4, v5, v6);\n break;\n case 8:\n value = pipe.transform(v1, v2, v3, v4, v5, v6, v7);\n break;\n case 9:\n value = pipe.transform(v1, v2, v3, v4, v5, v6, v7, v8);\n break;\n case 10:\n value = pipe.transform(v1, v2, v3, v4, v5, v6, v7, v8, v9);\n break;\n }\n break;\n }\n data.value = value;\n }\n return changed;\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @param {?} values\n * @return {boolean}\n */\nfunction checkAndUpdatePureExpressionDynamic(view, def, values) {\n var /** @type {?} */ bindings = def.bindings;\n var /** @type {?} */ changed = false;\n for (var /** @type {?} */ i = 0; i < values.length; i++) {\n // Note: We need to loop over all values, so that\n // the old values are updates as well!\n if (checkAndUpdateBinding(view, def, i, values[i]))\n changed = true;\n }\n if (changed) {\n var /** @type {?} */ data = asPureExpressionData(view, def.nodeIndex);\n var /** @type {?} */ value = void 0;\n switch (def.flags & 201347067 /* Types */) {\n case 32 /* TypePureArray */:\n value = values;\n break;\n case 64 /* TypePureObject */:\n value = {};\n for (var /** @type {?} */ i = 0; i < values.length; i++) {\n value[/** @type {?} */ ((bindings[i].name))] = values[i];\n }\n break;\n case 128 /* TypePurePipe */:\n var /** @type {?} */ pipe = values[0];\n var /** @type {?} */ params = values.slice(1);\n value = pipe.transform.apply(pipe, params);\n break;\n }\n data.value = value;\n }\n return

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changed;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n/**\n *
@license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n/**\n * @param {?}
checkIndex\n * @param {?} ngContentIndex\n * @param {?} staticText\n * @return {?} */\n\nfunction
textDef(checkIndex, ngContentIndex, staticText) {\n var /** @type {?} */ bindings = new Array(staticText.length
- 1);\n for (var /** @type {?} */ i = 1; i < staticText.length; i++) {\n bindings[i - 1] = {\n flags: 8 /*
TypeProperty */,\n name: null,\n ns: null,\n nonMinifiedName: null,\n securityContext:
null,\n suffix: staticText[i],\n };\n }\n return {\n // will bet set by the view definition\n
nodeIndex: -1,\n parent: null,\n renderParent: null,\n bindingIndex: -1,\n outputIndex: -1,\n //
regular values\n checkIndex: checkIndex,\n flags: 2 /* TypeText */,\n childFlags: 0,\n
directChildFlags: 0,\n childMatchedQueries: 0,\n matchedQueries: {},\n matchedQueryIds: 0,\n
references: {}, ngContentIndex: ngContentIndex,\n childCount: 0, bindings: bindings,\n bindingFlags: 8 /*
TypeProperty */,\n outputs: [],\n element: null,\n provider: null,\n text: { prefix: staticText[0] },\n
query: null,\n ngContent: null,\n };\n}\n\n/**\n * @param {?} view\n * @param {?} renderHost\n * @param
{?} def\n * @return {?} */\n\nfunction createText(view, renderHost, def) {\n var /** @type {?} */
renderNode$$1;\n var /** @type {?} */ renderer = view.renderer;\n renderNode$$1 = renderer.createText(/**
@type {?} */ ((def.text)).prefix);\n var /** @type {?} */ parentEl = getParentRenderElement(view, renderHost,
def);\n if (parentEl) {\n renderer.appendChild(parentEl, renderNode$$1);\n }\n return { renderText:
renderNode$$1 };\n}\n\n/**\n * @param {?} view\n * @param {?} def\n * @param {?} v0\n * @param {?} v1\n *
@param {?} v2\n * @param {?} v3\n * @param {?} v4\n * @param {?} v5\n * @param {?} v6\n * @param {?}
v7\n * @param {?} v8\n * @param {?} v9\n * @return {?} */\n\nfunction checkAndUpdateTextInline(view, def,
v0, v1, v2, v3, v4, v5, v6, v7, v8, v9) {\n var /** @type {?} */ changed = false;\n var /** @type {?} */ bindings
= def.bindings;\n var /** @type {?} */ bindLen = bindings.length;\n if (bindLen > 0 &&
checkAndUpdateBinding(view, def, 0, v0))\n changed = true;\n if (bindLen > 1 &&
checkAndUpdateBinding(view, def, 1, v1))\n changed = true;\n if (bindLen > 2 &&
checkAndUpdateBinding(view, def, 2, v2))\n changed = true;\n if (bindLen > 3 &&
checkAndUpdateBinding(view, def, 3, v3))\n changed = true;\n if (bindLen > 4 &&
checkAndUpdateBinding(view, def, 4, v4))\n changed = true;\n if (bindLen > 5 &&
checkAndUpdateBinding(view, def, 5, v5))\n changed = true;\n if (bindLen > 6 &&
checkAndUpdateBinding(view, def, 6, v6))\n changed = true;\n if (bindLen > 7 &&
checkAndUpdateBinding(view, def, 7, v7))\n changed = true;\n if (bindLen > 8 &&
checkAndUpdateBinding(view, def, 8, v8))\n changed = true;\n if (bindLen > 9 &&
checkAndUpdateBinding(view, def, 9, v9))\n changed = true;\n if (changed) {\n var /** @type {?} */
value = /** @type {?} */ ((def.text)).prefix;\n if (bindLen > 0)\n value += _addInterpolationPart(v0,
bindings[0]);\n if (bindLen > 1)\n value += _addInterpolationPart(v1, bindings[1]);\n if (bindLen >
2)\n value += _addInterpolationPart(v2, bindings[2]);\n if (bindLen > 3)\n value +=
_addInterpolationPart(v3, bindings[3]);\n if (bindLen > 4)\n value += _addInterpolationPart(v4,
bindings[4]);\n if (bindLen > 5)\n value += _addInterpolationPart(v5, bindings[5]);\n if (bindLen >
6)\n value += _addInterpolationPart(v6, bindings[6]);\n if (bindLen > 7)\n value +=
_addInterpolationPart(v7, bindings[7]);\n if (bindLen > 8)\n value += _addInterpolationPart(v8,
bindings[8]);\n if (bindLen > 9)\n value += _addInterpolationPart(v9, bindings[9]);\n var /** @type
{?} */ renderNode$$1 = asTextData(view, def.nodeIndex).renderText;\n view.renderer.setValue(renderNode$$1, value);\n }\n return changed;\n}\n\n/**\n * @param {?} view\n *
@param {?} def\n * @param {?} values\n * @return {?} */\n\nfunction checkAndUpdateTextDynamic(view, def,
values) {\n var /** @type {?} */ bindings = def.bindings;\n var /** @type {?} */ changed = false;\n for (var
/** @type {?} */ i = 0; i < values.length; i++) {\n // Note: We need to loop over all values, so that\n // the
old values are updates as well!\n if (checkAndUpdateBinding(view, def, i, values[i])) {\n changed =
true;\n }\n }\n if (changed) {\n var /** @type {?} */ value = ";\n for (var /** @type {?} */ i = 0; i <

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values.length; i++) {\n value = value + _addInterpolationPart(values[i], bindings[i]);\n }\n value =
/** @type {?} */ ((def.text)).prefix + value;\n var /** @type {?} */ renderNode$$1 = asTextData(view,
def.nodeIndex).renderText;\n view.renderer.setValue(renderNode$$1, value);\n }\n return
changed;\n}\n\n/**\n * @param {?} value\n * @param {?} binding\n * @return {?}\n */\nfunction
_addInterpolationPart(value, binding) {\n var /** @type {?} */ valueStr = value != null ? value.toString() : "";\n return valueStr + binding.suffix;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes}
checked by tsc\n */\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source
code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n
*/\n\n/**\n * @param {?} flags\n * @param {?} nodes\n * @param {?=} updateDirectives\n * @param {?=}
updateRenderer\n * @return {?}\n */\nfunction viewDef(flags, nodes, updateDirectives, updateRenderer) {\n //
clone nodes and set auto calculated values\n var /** @type {?} */ viewBindingCount = 0;\n var /** @type {?}
*/ viewDisposableCount = 0;\n var /** @type {?} */ viewNodeFlags = 0;\n var /** @type {?} */
viewRootNodeFlags = 0;\n var /** @type {?} */ viewMatchedQueries = 0;\n var /** @type {?} */ currentParent
= null;\n var /** @type {?} */ currentRenderParent = null;\n var /** @type {?} */
currentElementHasPublicProviders = false;\n var /** @type {?} */ currentElementHasPrivateProviders = false;\n
var /** @type {?} */ lastRenderRootNode = null;\n for (var /** @type {?} */ i = 0; i < nodes.length; i++) {\n
var /** @type {?} */ node = nodes[i];\n node.nodeIndex = i;\n node.parent = currentParent;\n
node.bindingIndex = viewBindingCount;\n node.outputIndex = viewDisposableCount;\n node.renderParent
= currentRenderParent;\n viewNodeFlags |= node.flags;\n viewMatchedQueries |=
node.matchedQueryIds;\n if (node.element) {\n var /** @type {?} */ elDef = node.element;\n
elDef.publicProviders =\n currentParent ? /** @type {?} */ ((currentParent.element)).publicProviders :
Object.create(null);\n elDef.allProviders = elDef.publicProviders;\n // Note: We assume that all
providers of an element are before any child element!\n currentElementHasPublicProviders = false;\n
currentElementHasPrivateProviders = false;\n if (node.element.template) {\n viewMatchedQueries
|= node.element.template.nodeMatchedQueries;\n }\n }\n validateNode(currentParent, node,
nodes.length);\n viewBindingCount += node.bindings.length;\n viewDisposableCount +=
node.outputs.length;\n if (!currentRenderParent && (node.flags & 3 /* CatRenderNode */)) {\n
lastRenderRootNode = node;\n }\n if (node.flags & 20224 /* CatProvider */) {\n if
(!currentElementHasPublicProviders) {\n currentElementHasPublicProviders = true; /** @type {?} */\n
 ((/** @type {?} */ ((currentParent)).element)).publicProviders = Object.create(/** @type {?} */ ((/** @type
{?} */ ((currentParent)).element)).publicProviders); /** @type {?} */\n ((/** @type {?} */
((currentParent)).element)).allProviders = /** @type {?} */ ((/** @type {?} */
((currentParent)).element)).publicProviders;\n }\n var /** @type {?} */ isPrivateService = (node.flags
& 8192 /* PrivateProvider */) !== 0;\n var /** @type {?} */ isComponent = (node.flags & 32768 /*
Component */) !== 0;\n if (!isPrivateService || isComponent) {\n /** @type {?} */ ((/** @type {?}
*/ ((currentParent)).element)).publicProviders)[tokenKey(/** @type {?} */
((node.provider)).token)] = node;\n }\n else {\n if (!currentElementHasPrivateProviders) {\n
currentElementHasPrivateProviders = true; /** @type {?} */\n ((/** @type {?} */
((currentParent)).element)).allProviders = Object.create(/** @type {?} */ ((/** @type {?} */
((currentParent)).element)).publicProviders); /** @type {?} */\n ((/** @type {?} */
((currentParent)).element)).publicProviders)[tokenKey(/** @type {?} */ ((node.provider)).token)] =
node;\n }\n if (isComponent) {\n /** @type {?} */ ((/** @type {?} */
((currentParent)).element)).componentProvider = node;\n }\n }\n if (currentParent) {\n
currentParent.childFlags |= node.flags;\n currentParent.directChildFlags |= node.flags;\n
currentParent.childMatchedQueries |= node.matchedQueryIds;\n if (node.element &&
node.element.template) {\n currentParent.childMatchedQueries |=
node.element.template.nodeMatchedQueries;\n }\n }\n else {\n viewRootNodeFlags |=
node.flags;\n }\n if (node.childCount > 0) {\n currentParent = node;\n if

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(isNgContainer(node)) {\n currentRenderParent = node;\n }\n }\n else {\n // When
the current node has no children, check if it is the last children of its parent.\n // When it is, propagate the
flags up.\n // The loop is required because an element could be the last transitive children of several\n
// elements. We loop to either the root or the highest opened element (= with remaining\n // children)\n
while (currentParent && i === currentParent.nodeIndex + currentParent.childCount) {\n var /** @type
{?} */ newParent = currentParent.parent;\n if (newParent) {\n newParent.childFlags |=
currentParent.childFlags;\n newParent.childMatchedQueries |= currentParent.childMatchedQueries;\n
 }\n currentParent = newParent;\n // We also need to update the render parent & account for
ng-container\n if (currentParent && isNgContainer(currentParent)) {\n currentRenderParent =
currentParent.renderParent;\n }\n else {\n currentRenderParent = currentParent;\n
 }\n }\n }\n }\n }\n }\n var /** @type {?} */ handleEvent = function (view, nodeIndex, eventName,
event) { return ((/** @type {?} */ ((nodes[nodeIndex].element)).handleEvent))(view, eventName, event); };\n
return {\n // Will be filled later...\n factory: null,\n nodeFlags: viewNodeFlags,\n rootNodeFlags:
viewRootNodeFlags,\n nodeMatchedQueries: viewMatchedQueries, flags: flags,\n nodes: nodes,\n
updateDirectives: updateDirectives || NOOP,\n updateRenderer: updateRenderer || NOOP, handleEvent:
handleEvent,\n bindingCount: viewBindingCount,\n outputCount: viewDisposableCount,
lastRenderRootNode: lastRenderRootNode\n };\n}\n\n/**\n * @param {?} node\n * @return {?} */\n\nfunction
isNgContainer(node) {\n return (node.flags & 1 /* TypeElement */) !== 0 && /** @type {?} */
((node.element)).name === null;\n}\n\n/**\n * @param {?} parent\n * @param {?} node\n * @param {?}
nodeCount\n * @return {?} */\n\nfunction validateNode(parent, node, nodeCount) {\n var /** @type {?} */
template = node.element && node.element.template;\n if (template) {\n if (!template.lastRenderRootNode)
{\n throw new Error("\Illegal State: Embedded templates without nodes are not allowed!");\n }\n if
(template.lastRenderRootNode &&\n template.lastRenderRootNode.flags & 16777216 /* EmbeddedViews
*/) {\n throw new Error("\Illegal State: Last root node of a template can't have embedded views, at index \""
+ node.nodeIndex + "\"");\n }\n }\n if (node.flags & 20224 /* CatProvider */) {\n var /** @type {?} */
parentFlags = parent ? parent.flags : 0;\n if ((parentFlags & 1 /* TypeElement */) === 0) {\n throw new
Error("\Illegal State: StaticProvider/Directive nodes need to be children of elements or anchors, at index \""
+ node.nodeIndex + "\"");\n }\n }\n if (node.query) {\n if (node.flags & 67108864 /* TypeContentQuery
/ &&\n (!parent || (parent.flags & 16384 / TypeDirective */) === 0)) {\n throw new Error("\Illegal
State: Content Query nodes need to be children of directives, at index \"" + node.nodeIndex + "\"");\n }\n }
if (node.flags & 134217728 /* TypeViewQuery */ && parent) {\n throw new Error("\Illegal State: View Query
nodes have to be top level nodes, at index \"" + node.nodeIndex + "\"");\n }\n }\n if (node.childCount) {\n
var /** @type {?} */ parentEnd = parent ? parent.nodeIndex + parent.childCount : nodeCount - 1;\n if
(node.nodeIndex <= parentEnd && node.nodeIndex + node.childCount > parentEnd) {\n throw new
Error("\Illegal State: childCount of node leads outside of parent, at index \"" + node.nodeIndex + "\"");\n }
}\n }\n}\n\n/**\n * @param {?} parent\n * @param {?} anchorDef\n * @param {?} viewDef\n * @param {?=} context\n
* @return {?} */\n\nfunction createEmbeddedView(parent, anchorDef$$1, viewDef, context) {\n // embedded
views are seen as siblings to the anchor, so we need\n // to get the parent of the anchor and use it as parentIndex.\n
var /** @type {?} */ view = createView(parent.root, parent.renderer, parent, anchorDef$$1, viewDef);\n initView(view, parent.component, context);\n createViewNodes(view);\n return view;\n}\n\n/**\n * @param {?}
root\n * @param {?} def\n * @param {?=} context\n * @return {?} */\n\nfunction createRootView(root, def,
context) {\n var /** @type {?} */ view = createView(root, root.renderer, null, null, def);\n initView(view,
context, context);\n createViewNodes(view);\n return view;\n}\n\n/**\n * @param {?} parentView\n * @param
{?} nodeDef\n * @param {?} viewDef\n * @param {?} hostElement\n * @return {?} */\n\nfunction
createComponentView(parentView, nodeDef, viewDef, hostElement) {\n var /** @type {?} */ rendererType =
/** @type {?} */ ((nodeDef.element)).componentRendererType;\n var /** @type {?} */ compRenderer;\n if
(!rendererType) {\n compRenderer = parentView.root.renderer;\n }\n else {\n compRenderer =
parentView.root.rendererFactory.createRenderer(hostElement, rendererType);\n }\n return

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createView(parentView.root, compRenderer, parentView, /** @type {?} */
((nodeDef.element)).componentProvider, viewDef);\n\n/**\n * @param {?} root\n * @param {?} renderer\n * @param {?} parent\n * @param {?} parentNodeDef\n * @param {?} def\n * @return {?} */\n *\nfunction
createView(root, renderer, parent, parentNodeDef, def) {\n var /** @type {?} */ nodes = new
Array(def.nodes.length);\n var /** @type {?} */ disposables = def.outputCount ? new Array(def.outputCount) :
null;\n var /** @type {?} */ view = {\n def: def,\n parent: parent,\n viewContainerParent: null,\n parentNodeDef: parentNodeDef,\n context: null,\n component: null, nodes: nodes,\n state: 13 /* CatInit
*/,\n root: root, renderer: renderer,\n oldValues: new Array(def.bindingCount), disposables: disposables,\n initIndex: -1\n };\n return view;\n}\n\n/**\n * @param {?} view\n * @param {?} component\n * @param {?}
context\n * @return {?} */\n *\nfunction initView(view, component, context) {\n view.component = component;\n view.context = context;\n}\n\n/**\n * @param {?} view\n * @return {?} */\n *\nfunction createViewNodes(view) {\n var /** @type {?} */ renderHost;\n if (isComponentView(view)) {\n var /** @type {?} */ hostDef =
view.parentNodeDef;\n renderHost = asElementData(/** @type {?} */ ((view.parent)), /** @type {?} */ ((/**
@type {?} */ ((hostDef)).parent)).nodeIndex).renderElement;\n }\n var /** @type {?} */ def = view.def;\n var
/** @type {?} */ nodes = view.nodes;\n for (var /** @type {?} */ i = 0; i < def.nodes.length; i++) {\n var /**
@type {?} */ nodeDef = def.nodes[i];\n Services.setCurrentNode(view, i);\n var /** @type {?} */
nodeData = void 0;\n switch (nodeDef.flags & 201347067 /* Types */) {\n case 1 /* TypeElement */:\n var /** @type {?} */ el = /** @type {?} */ (createElement(view, renderHost, nodeDef));\n var /**
@type {?} */ componentView = /** @type {?} */ ((undefined));\n if (nodeDef.flags & 33554432 /*
ComponentView */) {\n var /** @type {?} */ compViewDef = resolveDefinition(/** @type {?} */ ((/**
@type {?} */ ((nodeDef.element)).componentView));\n componentView =
Services.createComponentView(view, nodeDef, compViewDef, el);\n }\n listenToElementOutputs(view, componentView, nodeDef, el);\n nodeData = /** @type {?} */ ({\n renderElement: el,\n componentView: componentView,\n viewContainer: null,\n template: /** @type {?} */ ((nodeDef.element)).template ? createTemplateData(view, nodeDef) : undefined\n });\n if (nodeDef.flags & 16777216 /* EmbeddedViews */) {\n nodeData.viewContainer =
createViewContainerData(view, nodeDef, nodeData);\n }\n break;\n case 2 /* TypeText
*/:\n nodeData = /** @type {?} */ (createText(view, renderHost, nodeDef));\n break;\n case 512 /* TypeClassProvider */:\n case 1024 /* TypeFactoryProvider */:\n case 2048 /*
TypeUseExistingProvider */:\n case 256 /* TypeValueProvider */: {\n nodeData = nodes[i];\n if (!nodeData && !(nodeDef.flags & 4096 /* LazyProvider */)) {\n var /** @type {?} */ instance =
createProviderInstance(view, nodeDef);\n nodeData = /** @type {?} */ ({ instance: instance });\n }\n break;\n }\n case 16 /* TypePipe */: {\n var /** @type {?} */ instance =
createPipeInstance(view, nodeDef);\n nodeData = /** @type {?} */ ({ instance: instance });\n break;\n }\n case 16384 /* TypeDirective */: {\n nodeData = nodes[i];\n if
(!nodeData) {\n var /** @type {?} */ instance = createDirectiveInstance(view, nodeDef);\n nodeData = /** @type {?} */ ({ instance: instance });\n }\n if (nodeDef.flags & 32768 /*
Component */) {\n var /** @type {?} */ compView = asElementData(view, /** @type {?} */
((nodeDef.parent)).nodeIndex).componentView;\n initView(compView, nodeData.instance,
nodeData.instance);\n }\n break;\n }\n case 32 /* TypePureArray */:\n case
64 /* TypePureObject */:\n case 128 /* TypePurePipe */:\n nodeData = /** @type {?} */
(createPureExpression(view, nodeDef));\n break;\n case 67108864 /* TypeContentQuery */:\n case
134217728 /* TypeViewQuery */:\n nodeData = /** @type {?} */ (createQuery());\n break;\n case 8 /* TypeNgContent */:\n appendNgContent(view, renderHost, nodeDef);\n // no runtime data needed for NgContent...\n nodeData = undefined;\n break;\n }\n nodes[i] = nodeData;\n }\n // Create the ViewData.nodes of component views after we created everything else,\n // so that e.g. ng-content works\n execComponentViewsAction(view, ViewAction.CreateViewNodes);\n // fill
static content and view queries\n execQueriesAction(view, 67108864 /* TypeContentQuery */ | 134217728 /*

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TypeViewQuery */, 268435456 /* StaticQuery */, 0 /* CheckAndUpdate */);\n\n**\n * @param {?} view\n *
@return {?} */\n *^function checkNoChangesView(view) {\n markProjectedViewsForCheck(view);\n
Services.updateDirectives(view, 1 /* CheckNoChanges */);\n execEmbeddedViewsAction(view,
ViewAction.CheckNoChanges);\n Services.updateRenderer(view, 1 /* CheckNoChanges */);\n
execComponentViewsAction(view, ViewAction.CheckNoChanges);\n // Note: We don't check queries for changes
as we didn't do this in v2.x.\n // TODO(tbosch): investigate if we can enable the check again in v5.x with a nicer
error message.\n view.state &= ~(64 /* CheckProjectedViews */ | 32 /* CheckProjectedView */);\n\n**\n *
@param {?} view\n * @return {?} */\n *^function checkAndUpdateView(view) {\n if (view.state & 1 /*
BeforeFirstCheck */) {\n view.state &= ~1 /* BeforeFirstCheck */;\n view.state |= 2 /* FirstCheck */;\n
 }\n else {\n view.state &= ~2 /* FirstCheck */;\n }\n shiftInitState(view, 0 /* InitState_BeforeInit */, 256
/* InitState_CallingOnInit */);\n markProjectedViewsForCheck(view);\n Services.updateDirectives(view, 0 /*
CheckAndUpdate */);\n execEmbeddedViewsAction(view, ViewAction.CheckAndUpdate);\n
execQueriesAction(view, 67108864 /* TypeContentQuery */, 536870912 /* DynamicQuery */, 0 /*
CheckAndUpdate */);\n var /** @type {?} */ callInit = shiftInitState(view, 256 /* InitState_CallingOnInit */, 512
/* InitState_CallingAfterContentInit */);\n callLifecycleHooksChildrenFirst(view, 2097152 /*
AfterContentChecked */ | (callInit ? 1048576 /* AfterContentInit */ : 0));\n Services.updateRenderer(view, 0 /*
CheckAndUpdate */);\n execComponentViewsAction(view, ViewAction.CheckAndUpdate);\n
execQueriesAction(view, 134217728 /* TypeViewQuery */, 536870912 /* DynamicQuery */, 0 /*
CheckAndUpdate */);\n callInit = shiftInitState(view, 512 /* InitState_CallingAfterContentInit */, 768 /*
InitState_CallingAfterViewInit */);\n callLifecycleHooksChildrenFirst(view, 8388608 /* AfterViewInitChecked */ |
(callInit ? 4194304 /* AfterViewInit */ : 0));\n if (view.def.flags & 2 /* OnPush */) {\n view.state &= ~8 /*
ChecksEnabled */;\n }\n view.state &= ~(64 /* CheckProjectedViews */ | 32 /* CheckProjectedView */);\n
shiftInitState(view, 768 /* InitState_CallingAfterViewInit */, 1024 /* InitState_AfterInit */);\n\n**\n * @param
@param {?} view\n * @param {?} nodeDef\n * @param {?} argStyle\n * @param {?=} v0\n * @param {?=} v1\n *
@param {?=} v2\n * @param {?=} v3\n * @param {?=} v4\n * @param {?=} v5\n * @param {?=} v6\n * @param
{?=} v7\n * @param {?=} v8\n * @param {?=} v9\n * @return {?} */\n *^function checkAndUpdateNode(view,
nodeDef, argStyle, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9) {\n if (argStyle === 0 /* Inline */) {\n return
checkAndUpdateNodeInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9);\n }\n else {\n return
checkAndUpdateNodeDynamic(view, nodeDef, v0);\n }\n\n**\n * @param {?} view\n * @return {?} */\n
*^function markProjectedViewsForCheck(view) {\n var /** @type {?} */ def = view.def;\n if (!(def.nodeFlags
& 4 /* ProjectedTemplate */)) {\n return;\n }\n for (var /** @type {?} */ i = 0; i < def.nodes.length; i++) {\n
 var /** @type {?} */ nodeDef = def.nodes[i];\n if (nodeDef.flags & 4 /* ProjectedTemplate */) {\n
 var /** @type {?} */ projectedViews = asElementData(view, i).template._projectedViews;\n if
(projectedViews) {\n for (var /** @type {?} */ i_1 = 0; i_1 < projectedViews.length; i_1++) {\n
 var /** @type {?} */ projectedView = projectedViews[i_1];\n projectedView.state |= 32 /*
CheckProjectedView */;\n markParentViewsForCheckProjectedViews(projectedView, view);\n
 }\n }\n }\n else if ((nodeDef.childFlags & 4 /* ProjectedTemplate */) === 0) {\n // a parent
with leafs\n // no child is a component,\n // then skip the children\n i += nodeDef.childCount;\n
 }\n }\n\n**\n * @param {?} view\n * @param {?} nodeDef\n * @param {?=} v0\n * @param {?=} v1\n *
@param {?=} v2\n * @param {?=} v3\n * @param {?=} v4\n * @param {?=} v5\n * @param {?=} v6\n * @param
{?=} v7\n * @param {?=} v8\n * @param {?=} v9\n * @return {?} */\n *^function
checkAndUpdateNodeInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9) {\n switch (nodeDef.flags &
201347067 /* Types */) {\n case 1 /* TypeElement */:\n return checkAndUpdateElementInline(view,
nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9);\n case 2 /* TypeText */:\n return
checkAndUpdateTextInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9);\n case 16384 /*
TypeDirective */:\n return checkAndUpdateDirectiveInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8,
v9);\n case 32 /* TypePureArray */:\n case 64 /* TypePureObject */:\n case 128 /* TypePurePipe */:\n
 return checkAndUpdatePureExpressionInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9);\n
 }\n }

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default:\n throw 'unreachable';\n }\n}\n\n**\n * @param {?} view\n * @param {?} nodeDef\n * @param
{?} values\n * @return {?} \n *\nfunction checkAndUpdateNodeDynamic(view, nodeDef, values) {\n switch
(nodeDef.flags & 201347067 /* Types */) {\n case 1 /* TypeElement */:\n return
checkAndUpdateElementDynamic(view, nodeDef, values);\n case 2 /* TypeText */:\n return
checkAndUpdateTextDynamic(view, nodeDef, values);\n case 16384 /* TypeDirective */:\n return
checkAndUpdateDirectiveDynamic(view, nodeDef, values);\n case 32 /* TypePureArray */:\n case 64 /*
TypePureObject */:\n case 128 /* TypePurePipe */:\n return
checkAndUpdatePureExpressionDynamic(view, nodeDef, values);\n default:\n throw 'unreachable';\n
}\n}\n\n**\n * @param {?} view\n * @param {?} nodeDef\n * @param {?} argStyle\n * @param {?=} v0\n *
@param {?=} v1\n * @param {?=} v2\n * @param {?=} v3\n * @param {?=} v4\n * @param {?=} v5\n * @param
{?=} v6\n * @param {?=} v7\n * @param {?=} v8\n * @param {?=} v9\n * @return {?} \n *\nfunction
checkNoChangesNode(view, nodeDef, argStyle, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9) {\n if (argStyle === 0 /*
Inline */) {\n checkNoChangesNodeInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9);\n } \n else
{\n checkNoChangesNodeDynamic(view, nodeDef, v0);\n } \n // Returning false is ok here as we would
have thrown in case of a change.\n return false;\n}\n}\n\n**\n * @param {?} view\n * @param {?} nodeDef\n *
@param {?} v0\n * @param {?} v1\n * @param {?} v2\n * @param {?} v3\n * @param {?} v4\n * @param {?}
v5\n * @param {?} v6\n * @param {?} v7\n * @param {?} v8\n * @param {?} v9\n * @return {?} \n *\nfunction
checkNoChangesNodeInline(view, nodeDef, v0, v1, v2, v3, v4, v5, v6, v7, v8, v9) {\n var /** @type {?} */
bindLen = nodeDef.bindings.length;\n if (bindLen > 0)\n checkBindingNoChanges(view, nodeDef, 0, v0);\n if (bindLen > 1)\n checkBindingNoChanges(view, nodeDef, 1, v1);\n if (bindLen > 2)\n checkBindingNoChanges(view, nodeDef, 2, v2);\n if (bindLen > 3)\n checkBindingNoChanges(view,
nodeDef, 3, v3);\n if (bindLen > 4)\n checkBindingNoChanges(view, nodeDef, 4, v4);\n if (bindLen > 5)\n checkBindingNoChanges(view, nodeDef, 5, v5);\n if (bindLen > 6)\n checkBindingNoChanges(view,
nodeDef, 6, v6);\n if (bindLen > 7)\n checkBindingNoChanges(view, nodeDef, 7, v7);\n if (bindLen > 8)\n checkBindingNoChanges(view, nodeDef, 8, v8);\n if (bindLen > 9)\n checkBindingNoChanges(view,
nodeDef, 9, v9);\n}\n}\n\n**\n * @param {?} view\n * @param {?} nodeDef\n * @param {?} values\n * @return {?} \n
*\nfunction checkNoChangesNodeDynamic(view, nodeDef, values) {\n for (var /** @type {?} */ i = 0; i <
values.length; i++) {\n checkBindingNoChanges(view, nodeDef, i, values[i]);\n } \n}\n}\n\n**\n * Workaround
https://github.com/angular/tsickle/issues/497\n * @suppress {misplacedTypeAnnotation}\n * @param {?} view\n *
@param {?} nodeDef\n * @return {?} \n *\nfunction checkNoChangesQuery(view, nodeDef) {\n var /** @type
{?} */ queryList = asQueryList(view, nodeDef.nodeIndex);\n if (queryList.dirty) {\n throw
expressionChangedAfterItHasBeenCheckedError(Services.createDebugContext(view, nodeDef.nodeIndex), \"Query
\" + (/** @type {?} */ ((nodeDef.query))).id + \" not dirty\", \"Query \" + (/** @type {?} */ ((nodeDef.query))).id +
\" dirty\", (view.state & 1 /* BeforeFirstCheck */) !== 0);\n } \n}\n}\n\n**\n * @param {?} view\n * @return {?} \n
\nfunction destroyView(view) {\n if (view.state & 128 / Destroyed */) {\n return;\n } \n execEmbeddedViewsAction(view, ViewAction.Destroy);\n execComponentViewsAction(view,
ViewAction.Destroy);\n callLifecycleHooksChildrenFirst(view, 131072 /* OnDestroy */);\n if
(view.disposables) {\n for (var /** @type {?} */ i = 0; i < view.disposables.length; i++) {\n
view.disposables[i]();\n } \n } \n detachProjectedView(view);\n if (view.renderer.destroyNode) {\n
destroyViewNodes(view);\n } \n if (isComponentView(view)) {\n view.renderer.destroy();\n } \n view.state |= 128 /* Destroyed */;\n}\n}\n\n**\n * @param {?} view\n * @return {?} \n
*\nfunction destroyViewNodes(view) {\n var /** @type {?} */ len = view.def.nodes.length;\n for (var /** @type {?} */ i =
0; i < len; i++) {\n var /** @type {?} */ def = view.def.nodes[i];\n if (def.flags & 1 /* TypeElement */) {\n
/** @type {?} */ ((view.renderer.destroyNode))(asElementData(view, i).renderElement);\n } \n } \n else if
(def.flags & 2 /* TypeText */) {\n /** @type {?} */ ((view.renderer.destroyNode))(asTextData(view,
i).renderText);\n } \n else if (def.flags & 67108864 /* TypeContentQuery */ || def.flags & 134217728 /*
TypeViewQuery */) {\n asQueryList(view, i).destroy();\n } \n}\n}\n\n** @enum {number} *\nvar
ViewAction = {\n CreateViewNodes: 0,\n CheckNoChanges: 1,\n CheckNoChangesProjectedViews: 2,\n

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CheckAndUpdate: 3,\n CheckAndUpdateProjectedViews: 4,\n Destroy:
5,\n};\nViewAction[ViewAction.CreateViewNodes] =
\"CreateViewNodes\";\nViewAction[ViewAction.CheckNoChanges] =
\"CheckNoChanges\";\nViewAction[ViewAction.CheckNoChangesProjectedViews] =
\"CheckNoChangesProjectedViews\";\nViewAction[ViewAction.CheckAndUpdate] =
\"CheckAndUpdate\";\nViewAction[ViewAction.CheckAndUpdateProjectedViews] =
\"CheckAndUpdateProjectedViews\";\nViewAction[ViewAction.Destroy] = \"Destroy\";\n/**\n * @param {?}
view\n * @param {?} action\n * @return {?}\n */\nfunction execComponentViewsAction(view, action) {\n var
/** @type {?} */ def = view.def;\n if (!(def.nodeFlags & 33554432 /* ComponentView */)) {\n return;\n }\n
for (var /** @type {?} */ i = 0; i < def.nodes.length; i++) {\n var /** @type {?} */ nodeDef = def.nodes[i];\n
if (nodeDef.flags & 33554432 /* ComponentView */) {\n // a leaf\n
callViewAction(asElementData(view, i).componentView, action);\n } else if ((nodeDef.childFlags &
33554432 /* ComponentView */) === 0) {\n // a parent with leaf\n // no child is a component,\n
// then skip the children\n i += nodeDef.childCount;\n } }\n}\n\n/**\n * @param {?} view\n *
@param {?} action\n * @return {?}\n */\nfunction execEmbeddedViewsAction(view, action) {\n var /** @type
{?} */ def = view.def;\n if (!(def.nodeFlags & 16777216 /* EmbeddedViews */)) {\n return;\n }\n for (var
/** @type {?} */ i = 0; i < def.nodes.length; i++) {\n var /** @type {?} */ nodeDef = def.nodes[i];\n if
(nodeDef.flags & 16777216 /* EmbeddedViews */) {\n // a leaf\n var /** @type {?} */
embeddedViews = /** @type {?} */ ((asElementData(view, i).viewContainer))._embeddedViews;\n for (var
/** @type {?} */ k = 0; k < embeddedViews.length; k++) {\n callViewAction(embeddedViews[k],
action);\n }\n } else if ((nodeDef.childFlags & 16777216 /* EmbeddedViews */) === 0) {\n
// a parent with leaf\n // no child is a component,\n // then skip the children\n i +=
nodeDef.childCount;\n } }\n}\n\n/**\n * @param {?} view\n * @param {?} action\n * @return {?}\n */\n
function callViewAction(view, action) {\n var /** @type {?} */ viewState = view.state;\n switch (action) {\n
case ViewAction.CheckNoChanges:\n if ((viewState & 128 /* Destroyed */) === 0) {\n if
((viewState & 12 /* CatDetectChanges */) === 12 /* CatDetectChanges */) {\n
checkNoChangesView(view);\n } else if (viewState & 64 /* CheckProjectedViews */) {\n
execProjectedViewsAction(view, ViewAction.CheckNoChangesProjectedViews);\n }\n } break;\n case
ViewAction.CheckNoChangesProjectedViews:\n if ((viewState & 128 /* Destroyed */)
=== 0) {\n if (viewState & 32 /* CheckProjectedView */) {\n checkNoChangesView(view);\n
}\n else if (viewState & 64 /* CheckProjectedViews */) {\n
execProjectedViewsAction(view, action);\n }\n } break;\n case
ViewAction.CheckAndUpdate:\n if ((viewState & 128 /* Destroyed */) === 0) {\n if ((viewState &
12 /* CatDetectChanges */) === 12 /* CatDetectChanges */) {\n checkAndUpdateView(view);\n
}\n else if (viewState & 64 /* CheckProjectedViews */) {\n execProjectedViewsAction(view,
ViewAction.CheckAndUpdateProjectedViews);\n }\n } break;\n case
ViewAction.CheckAndUpdateProjectedViews:\n if ((viewState & 128 /* Destroyed */) === 0) {\n
if (viewState & 32 /* CheckProjectedView */) {\n checkAndUpdateView(view);\n }\n
else if (viewState & 64 /* CheckProjectedViews */) {\n execProjectedViewsAction(view, action);\n
}\n } break;\n case ViewAction.Destroy:\n // Note: destroyView recurses over all
views,\n // so we don't need to special case projected views here.\n destroyView(view);\n
break;\n case ViewAction.CreateViewNodes:\n createViewNodes(view);\n break;\n }\n}\n\n/**\n *
@param {?} view\n * @param {?} action\n * @return {?}\n */\nfunction execProjectedViewsAction(view,
action) {\n execEmbeddedViewsAction(view, action);\n execComponentViewsAction(view, action);\n}\n\n/**\n *
@param {?} view\n * @param {?} queryFlags\n * @param {?} staticDynamicQueryFlag\n * @param {?}
checkType\n * @return {?}\n */\nfunction execQueriesAction(view, queryFlags, staticDynamicQueryFlag,
checkType) {\n if (!(view.def.nodeFlags & queryFlags) || !(view.def.nodeFlags & staticDynamicQueryFlag)) {\n
return;\n }\n var /** @type {?} */ nodeCount = view.def.nodes.length;\n for (var /** @type {?} */ i = 0; i <

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nodeCount; i++) {\n var /** @type {?} */ nodeDef = view.def.nodes[i];\n if ((nodeDef.flags & queryFlags)\n && (nodeDef.flags & staticDynamicQueryFlag)) {\n Services.setCurrentNode(view, nodeDef.nodeIndex);\n switch (checkType) {\n case 0 /* CheckAndUpdate */:\n checkAndUpdateQuery(view,\n nodeDef);\n break;\n case 1 /* CheckNoChanges */:\n checkNoChangesQuery(view, nodeDef);\n break;\n }\n if (!(nodeDef.childFlags &\n queryFlags) || !(nodeDef.childFlags & staticDynamicQueryFlag)) {\n // no child has a matching query\n // then skip the children\n i += nodeDef.childCount;\n }\n }\n}\n\n/**\n * @fileoverview added by\n * tsickle\n * @suppress {checkTypes} checked by tsc\n * \n * @license\n * Copyright Google Inc. All Rights\n * Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\n * LICENSE file at https://angular.io/license\n * \n * @return {?} */\n\nfunction\ninitServicesIfNeeded() {\n if (initialized) {\n return;\n }\n initialized = true;\n var /** @type {?} */\n services = isDevMode() ? createDebugServices() : createProdServices();\n Services.setCurrentNode =\n services.setCurrentNode;\n Services.createRootView = services.createRootView;\n Services.createEmbeddedView = services.createEmbeddedView;\n Services.createComponentView =\n services.createComponentView;\n Services.createNgModuleRef = services.createNgModuleRef;\n Services.overrideProvider = services.overrideProvider;\n Services.overrideComponentView =\n services.overrideComponentView;\n Services.clearOverrides = services.clearOverrides;\n Services.checkAndUpdateView = services.checkAndUpdateView;\n Services.checkNoChangesView =\n services.checkNoChangesView;\n Services.destroyView = services.destroyView;\n Services.resolveDep =\n resolveDep;\n Services.createDebugContext = services.createDebugContext;\n Services.handleEvent =\n services.handleEvent;\n Services.updateDirectives = services.updateDirectives;\n Services.updateRenderer =\n services.updateRenderer;\n Services.dirtyParentQueries = dirtyParentQueries;\n}\n\n/**\n * @return {?} */\n\nfunction createProdServices() {\n return {\n setCurrentNode: function () {},\n createRootView:\n createProdRootView,\n createEmbeddedView: createEmbeddedView,\n createComponentView:\n createComponentView,\n createNgModuleRef: createNgModuleRef,\n overrideProvider: NOOP,\n overrideComponentView: NOOP,\n clearOverrides: NOOP,\n checkAndUpdateView:\n checkAndUpdateView,\n checkNoChangesView: checkNoChangesView,\n destroyView: destroyView,\n createDebugContext: function (view, nodeIndex) {\n return new DebugContext_(view, nodeIndex);\n },\n handleEvent: function (view, nodeIndex, eventName, event) {\n return view.def.handleEvent(view,\n nodeIndex, eventName, event);\n },\n updateDirectives: function (view, checkType) {\n return\n view.def.updateDirectives(checkType === 0 /* CheckAndUpdate */ ?\n prodCheckAndUpdateNode : \n prodCheckNoChangesNode, view);\n },\n updateRenderer: function (view, checkType) {\n return\n view.def.updateRenderer(checkType === 0 /* CheckAndUpdate */ ?\n prodCheckAndUpdateNode : \n prodCheckNoChangesNode, view);\n }\n };\n}\n\n/**\n * @return {?} */\n\nfunction createDebugServices()\n{\n return {\n setCurrentNode: debugSetCurrentNode,\n createRootView: debugCreateRootView,\n createEmbeddedView: debugCreateEmbeddedView,\n createComponentView: debugCreateComponentView,\n createNgModuleRef: debugCreateNgModuleRef,\n overrideProvider: debugOverrideProvider,\n overrideComponentView: debugOverrideComponentView,\n clearOverrides: debugClearOverrides,\n checkAndUpdateView: debugCheckAndUpdateView,\n checkNoChangesView:\n debugCheckNoChangesView,\n destroyView: debugDestroyView,\n createDebugContext: function (view,\n nodeIndex) {\n return new DebugContext_(view, nodeIndex);\n },\n handleEvent: debugHandleEvent,\n updateDirectives: debugUpdateDirectives,\n updateRenderer: debugUpdateRenderer,\n };\n}\n\n/**\n * @param {?} elInjector\n * @param {?} projectableNodes\n * @param {?} rootSelectorOrNode\n * @param {?} def\n * @param {?} ngModule\n * @param {=} context\n * @return {?} */\n\nfunction\ncreateProdRootView(elInjector, projectableNodes, rootSelectorOrNode, def,\nngModule, context) {\n var /**\n * @type {?} */\n rendererFactory = ngModule.injector.get(RendererFactory2);\n return\n createRootView(createRootData(elInjector, ngModule, rendererFactory,\n projectableNodes, rootSelectorOrNode),\n def, context);\n}\n\n/**\n * @param {?} elInjector\n * @param {?} projectableNodes\n * @param {?}

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rootSelectorOrNode\n * @param {?} def\n * @param {?} ngModule\n * @param {?=} context\n * @return {?}\n
*\nfunction debugCreateRootView(eInjector, projectableNodes, rootSelectorOrNode, def, ngModule, context) {\n
var /** @type {?} */ rendererFactory = ngModule.injector.get(RendererFactory2);\n var /** @type {?} */ root =
createRootData(eInjector, ngModule, new DebugRendererFactory2(rendererFactory), projectableNodes,
rootSelectorOrNode);\n var /** @type {?} */ defWithOverride = applyProviderOverridesToView(def);\n return
callWithDebugContext(DebugAction.create, createRootView, null, [root, defWithOverride, context]);\n}\n/**\n *
@param {?} eInjector\n * @param {?} ngModule\n * @param {?} rendererFactory\n * @param {?}
projectableNodes\n * @param {?} rootSelectorOrNode\n * @return {?}\n *\nfunction createRootData(eInjector,
ngModule, rendererFactory, projectableNodes, rootSelectorOrNode) {\n var /** @type {?} */ sanitizer =
ngModule.injector.get(Sanitizer);\n var /** @type {?} */ errorHandler = ngModule.injector.get(ErrorHandler);\n
var /** @type {?} */ renderer = rendererFactory.createRenderer(null, null);\n return {\n ngModule:
ngModule,\n injector: eInjector, projectableNodes: projectableNodes,\n selectorOrNode:
rootSelectorOrNode, sanitizer: sanitizer, rendererFactory: rendererFactory, renderer: renderer, errorHandler:
errorHandler\n };\n}\n/**\n * @param {?} parentView\n * @param {?} anchorDef\n * @param {?} viewDef\n *
@param {?=} context\n * @return {?}\n *\nfunction debugCreateEmbeddedView(parentView, anchorDef,
viewDef$$1, context) {\n var /** @type {?} */ defWithOverride =
applyProviderOverridesToView(viewDef$$1);\n return callWithDebugContext(DebugAction.create,
createEmbeddedView, null, [parentView, anchorDef, defWithOverride, context]);\n}\n/**\n * @param {?}
parentView\n * @param {?} nodeDef\n * @param {?} viewDef\n * @param {?} hostElement\n * @return {?}\n
*\nfunction debugCreateComponentView(parentView, nodeDef, viewDef$$1, hostElement) {\n var /** @type
{?} */ overrideComponentView = viewDefOverrides.get(/** @type {?} */ ((/** @type {?} */ ((/** @type {?} */
((nodeDef.element)).componentProvider)).provider)).token);\n if (overrideComponentView) {\n viewDef$$1
= overrideComponentView;\n } else {\n viewDef$$1 = applyProviderOverridesToView(viewDef$$1);\n
}\n return callWithDebugContext(DebugAction.create, createComponentView, null, [parentView, nodeDef,
viewDef$$1, hostElement]);\n}\n/**\n * @param {?} moduleType\n * @param {?} parentInjector\n * @param {?}
bootstrapComponents\n * @param {?} def\n * @return {?}\n *\nfunction debugCreateNgModuleRef(moduleType,
parentInjector, bootstrapComponents, def) {\n var /** @type {?} */ defWithOverride =
applyProviderOverridesToNgModule(def);\n return createNgModuleRef(moduleType, parentInjector,
bootstrapComponents, defWithOverride);\n}\nvar providerOverrides = new Map();\nvar viewDefOverrides = new
Map();\n/**\n * @param {?} override\n * @return {?}\n *\nfunction debugOverrideProvider(override) {\n
providerOverrides.set(override.token, override);\n}\n/**\n * @param {?} comp\n * @param {?} compFactory\n *
@return {?}\n *\nfunction debugOverrideComponentView(comp, compFactory) {\n var /** @type {?} */
hostViewDef = resolveDefinition(getComponentViewDefinitionFactory(compFactory));\n var /** @type {?} */
compViewDef = resolveDefinition(/** @type {?} */ ((/** @type {?} */
((hostViewDef.nodes[0].element)).componentView));\n viewDefOverrides.set(comp, compViewDef);\n}\n/**\n
* @return {?}\n *\nfunction debugClearOverrides() {\n providerOverrides.clear();\n
viewDefOverrides.clear();\n}\n/**\n * @param {?} def\n * @return {?}\n *\nfunction
applyProviderOverridesToView(def) {\n if (providerOverrides.size === 0) {\n return def;\n }\n var /**
@type {?} */ elementIndicesWithOverwrittenProviders = findElementIndicesWithOverwrittenProviders(def);\n if
(elementIndicesWithOverwrittenProviders.length === 0) {\n return def;\n }\n // clone the whole view
definition,\n // as it maintains references between the nodes that are hard to update.\n def = /** @type {?} */
((def.factory))(function () { return NOOP; });\n for (var /** @type {?} */ i = 0; i <
elementIndicesWithOverwrittenProviders.length; i++) {\n applyProviderOverridesToElement(def,
elementIndicesWithOverwrittenProviders[i]);\n }\n return def;\n /**\n * @param {?} def\n * @return
{?}\n *\nfunction findElementIndicesWithOverwrittenProviders(def) {\n var /** @type {?} */
elIndicesWithOverwrittenProviders = [];\n var /** @type {?} */ lastElementDef = null;\n for (var /**
@type {?} */ i = 0; i < def.nodes.length; i++) {\n var /** @type {?} */ nodeDef = def.nodes[i];\n if
(nodeDef.flags & 1 /* TypeElement */) {\n lastElementDef = nodeDef;\n }\n if

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{?} view\n * @return {?}\n *\nfunction debugDestroyView(view) {\n return
callWithDebugContext(DebugAction.destroy, destroyView, null, [view]);\n}\n/** @enum {number} */\nvar
DebugAction = {\n create: 0,\n detectChanges: 1,\n checkNoChanges: 2,\n destroy: 3,\n handleEvent:
4,\n};\nDebugAction[DebugAction.create] = "create";\nDebugAction[DebugAction.detectChanges] =
"detectChanges";\nDebugAction[DebugAction.checkNoChanges] =
"checkNoChanges";\nDebugAction[DebugAction.destroy] =
"destroy";\nDebugAction[DebugAction.handleEvent] = "handleEvent";\nvar _currentAction;\nvar
_currentView;\nvar _currentNodeIndex;\n/**\n * @param {?} view\n * @param {?} nodeIndex\n * @return {?}\n
*\nfunction debugSetCurrentNode(view, nodeIndex) {\n _currentView = view;\n _currentNodeIndex =
nodeIndex;\n}\n/**\n * @param {?} view\n * @param {?} nodeIndex\n * @param {?} eventName\n * @param {?}
event\n * @return {?}\n *\nfunction debugHandleEvent(view, nodeIndex, eventName, event) {\n
debugSetCurrentNode(view, nodeIndex);\n return callWithDebugContext(DebugAction.handleEvent,
view.def.handleEvent, null, [view, nodeIndex, eventName, event]);\n}\n/**\n * @param {?} view\n * @param {?}
checkType\n * @return {?}\n *\nfunction debugUpdateDirectives(view, checkType) {\n if (view.state & 128 /*
Destroyed */) {\n throw viewDestroyedError(DebugAction[_currentAction]);\n }\n debugSetCurrentNode(view, nextDirectiveWithBinding(view, 0));\n return
view.def.updateDirectives(debugCheckDirectivesFn, view);\n /**\n * @param {?} view\n * @param {?}
nodeIndex\n * @param {?} argStyle\n * @param {...?} values\n * @return {?}\n *\nfunction
debugCheckDirectivesFn(view, nodeIndex, argStyle) {\n var values = [];\n for (var _i = 3; _i <
arguments.length; _i++) {\n values[_i - 3] = arguments[_i];\n }\n var /** @type {?} */ nodeDef =
view.def.nodes[nodeIndex];\n if (checkType === 0 /* CheckAndUpdate */) {\n debugCheckAndUpdateNode(view, nodeDef, argStyle, values);\n } else {\n debugCheckNoChangesNode(view, nodeDef, argStyle, values);\n } if (nodeDef.flags & 16384 /*
TypeDirective */) {\n debugSetCurrentNode(view, nextDirectiveWithBinding(view, nodeIndex));\n }
return (nodeDef.flags & 224 /* CatPureExpression */) ?\n asPureExpressionData(view,
nodeDef.nodeIndex).value :\n undefined;\n }\n}\n/**\n * @param {?} view\n * @param {?} checkType\n
* @return {?}\n *\nfunction debugUpdateRenderer(view, checkType) {\n if (view.state & 128 /* Destroyed */)
{\n throw viewDestroyedError(DebugAction[_currentAction]);\n }\n debugSetCurrentNode(view,
nextRenderNodeWithBinding(view, 0));\n return view.def.updateRenderer(debugCheckRenderNodeFn, view);\n
/**\n * @param {?} view\n * @param {?} nodeIndex\n * @param {?} argStyle\n * @param {...?}
values\n * @return {?}\n *\nfunction debugCheckRenderNodeFn(view, nodeIndex, argStyle) {\n var
values = [];\n for (var _i = 3; _i < arguments.length; _i++) {\n values[_i - 3] = arguments[_i];\n }\n var /** @type {?} */ nodeDef = view.def.nodes[nodeIndex];\n if (checkType === 0 /* CheckAndUpdate */)
{\n debugCheckAndUpdateNode(view, nodeDef, argStyle, values);\n } else {\n debugCheckNoChangesNode(view, nodeDef, argStyle, values);\n } if (nodeDef.flags & 3 /*
CatRenderNode */) {\n debugSetCurrentNode(view, nextRenderNodeWithBinding(view, nodeIndex));\n }
return (nodeDef.flags & 224 /* CatPureExpression */) ?\n asPureExpressionData(view,
nodeDef.nodeIndex).value :\n undefined;\n }\n}\n/**\n * @param {?} view\n * @param {?} nodeDef\n *
@param {?} argStyle\n * @param {?} givenValues\n * @return {?}\n *\nfunction
debugCheckAndUpdateNode(view, nodeDef, argStyle, givenValues) {\n var /** @type {?} */ changed = (/**
@type {?} */ (checkAndUpdateNode)).apply(void 0, [view, nodeDef, argStyle].concat(givenValues));\n if
(changed) {\n var /** @type {?} */ values = argStyle === 1 /* Dynamic */ ? givenValues[0] : givenValues;\n if (nodeDef.flags & 16384 /* TypeDirective */) {\n var /** @type {?} */ bindingValues = {};\n for
(var /** @type {?} */ i = 0; i < nodeDef.bindings.length; i++) {\n var /** @type {?} */ binding =
nodeDef.bindings[i];\n var /** @type {?} */ value = values[i];\n if (binding.flags & 8 /*
TypeProperty */) {\n bindingValues[normalizeDebugBindingName(/** @type {?} */
((binding.nonMinifiedName)))] =\n normalizeDebugBindingValue(value);\n }\n }\n var /** @type {?} */ elDef = /** @type {?} */ ((nodeDef.parent));\n var /** @type {?} */ el =

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return tokens;\n },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(DebugContext_.prototype, \"references\", {\n get: /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ references = {};\n if (this.elDef) {\n collectReferences(this.elView, this.elDef, references);\n for (var /** @type {?} */ i = this.elDef.nodeIndex + 1; i <= this.elDef.nodeIndex + this.elDef.childCount; i++) {\n var /** @type {?} */ childDef = this.elView.def.nodes[i];\n if (childDef.flags & 20224 /* CatProvider */) {\n collectReferences(this.elView, childDef, references);\n }\n i += childDef.childCount;\n }\n }\n return references;\n },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(DebugContext_.prototype, \"componentRenderElement\", {\n get: /**\n * @return {?}\n */\n function () {\n var /** @type {?} */ elData = findHostElement(this.elOrCompView);\n return elData ? elData.renderElement : undefined;\n },\n enumerable: true,\n configurable: true\n });\n Object.defineProperty(DebugContext_.prototype, \"renderNode\", {\n get: /**\n * @return {?}\n */\n function () {\n return this.nodeDef.flags & 2 /* TypeText */ ? renderNode(this.view, this.nodeDef):\n renderNode(this.elView, this.elDef);\n },\n enumerable: true,\n configurable: true\n });\n /**\n * @param {?} console\n * @param {...?} values\n * @return {?}\n */\n DebugContext_.prototype.logError = /**\n * @param {?} console\n * @param {...?} values\n * @return {?}\n */\n function (console) {\n var values = [];\n for (var _i = 1; _i < arguments.length; _i++) {\n values[_i - 1] = arguments[_i];\n }\n var /** @type {?} */ logViewDef;\n var /** @type {?} */ logNodeIndex;\n if (this.nodeDef.flags & 2 /* TypeText */) {\n logViewDef = this.view.def;\n logNodeIndex = this.nodeDef.nodeIndex;\n } else {\n logViewDef = this.elView.def;\n logNodeIndex = this.elDef.nodeIndex;\n }\n // Note: we only generate a log function for text and element nodes\n // to make the generated code as small as possible.\n var /** @type {?} */ renderNodeIndex = getRenderNodeIndex(logViewDef, logNodeIndex);\n var /** @type {?} */ currRenderNodeIndex = -1;\n var /** @type {?} */ nodeLogger = function () {\n currRenderNodeIndex++;\n if (currRenderNodeIndex === renderNodeIndex) {\n return (_a = console.error).bind.apply(_a, [console].concat(values));\n } else {\n return NOOP;\n }\n }; var _a;\n /** @type {?} */\n ((logViewDef.factory))(nodeLogger);\n if (currRenderNodeIndex < renderNodeIndex) {\n console.error('Illegal state: the ViewDefinitionFactory did not call the logger!');\n }\n console.error.apply(console, values);\n };\n return DebugContext_;\n})(\n /**\n * @param {?} viewDef\n * @param {?} nodeIndex\n * @return {?}\n */\n function getRenderNodeIndex(viewDef, nodeIndex) {\n var /** @type {?} */ renderNodeIndex = -1;\n for (var /** @type {?} */ i = 0; i <= nodeIndex; i++) {\n var /** @type {?} */ nodeDef = viewDef.nodes[i];\n if (nodeDef.flags & 3 /* CatRenderNode */) {\n renderNodeIndex++;\n }\n }\n return renderNodeIndex;\n },\n /**\n * @param {?} view\n * @return {?}\n */\n function findHostElement(view) {\n while (view && !isComponentView(view)) {\n view = /** @type {?} */ ((view.parent));\n }\n if (view.parent) {\n return asElementData(view.parent, /** @type {?} */ ((viewParentEl(view))).nodeIndex);\n }\n return null;\n },\n /**\n * @param {?} view\n * @param {?} nodeDef\n * @param {?} references\n * @return {?}\n */\n function collectReferences(view, nodeDef, references) {\n for (var /** @type {?} */ refName in nodeDef.references) {\n references[refName] = getQueryValue(view, nodeDef, nodeDef.references[refName]);\n }\n },\n /**\n * @param {?} action\n * @param {?} fn\n * @param {?} self\n * @param {?} args\n * @return {?}\n */\n function callWithDebugContext(action, fn, self, args) {\n var /** @type {?} */ oldAction = _currentAction;\n var /** @type {?} */ oldView = _currentView;\n var /** @type {?} */ oldNodeIndex = _currentNodeIndex;\n try {\n _currentAction = action;\n var /** @type {?} */ result = fn.apply(self, args);\n _currentView = oldView;\n _currentNodeIndex = oldNodeIndex;\n } catch (** @type {?} */ e) {\n if (isViewDebugError(e) || !_currentView) {\n throw e;\n }\n throw viewWrappedDebugError(e, /** @type {?} */ ((getCurrentDebugContext())));\n }\n },\n /**\n * @return {?}\n */\n function getCurrentDebugContext() {\n return _currentView ? new DebugContext(_currentView, _currentNodeIndex) : null;\n }\n nvar DebugRendererFactory2 = /** @class */ (function () {\n function DebugRendererFactory2(delegate)

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{\n this.delegate = delegate;\n }\n /**\n * @param {?} element\n * @param {?} renderData\n * @return {?}\n */\n DebugRendererFactory2.prototype.createRenderer = /**\n * @param {?} element\n * @param {?} renderData\n * @return {?}\n */\n function (element, renderData) {\n return new\n DebugRenderer2(this.delegate.createRenderer(element, renderData));\n };\n /**\n * @return {?}\n */\n DebugRendererFactory2.prototype.begin = /**\n * @return {?}\n */\n function () {\n if\n (this.delegate.begin) {\n this.delegate.begin();\n }\n };\n /**\n * @return {?}\n */\n DebugRendererFactory2.prototype.end = /**\n * @return {?}\n */\n function () {\n if (this.delegate.end)\n {\n this.delegate.end();\n }\n };\n /**\n * @return {?}\n */\n DebugRendererFactory2.prototype.whenRenderingDone = /**\n * @return {?}\n */\n function () {\n if\n (this.delegate.whenRenderingDone) {\n return this.delegate.whenRenderingDone();\n }\n return\n Promise.resolve(null);\n };\n return DebugRendererFactory2;\n})();\nvar DebugRenderer2 = /** @class */\n(function () {\n function DebugRenderer2(delegate) {\n this.delegate = delegate;\n this.data =\n this.delegate.data;\n }\n /**\n * @param {?} node\n * @return {?}\n */\n DebugRenderer2.prototype.destroyNode = /**\n * @param {?} node\n * @return {?}\n */\n function\n (node) {\n removeDebugNodeFromIndex(/** @type {?} */ ((getDebugNode(node))));\n if\n (this.delegate.destroyNode) {\n this.delegate.destroyNode(node);\n }\n };\n /**\n * @return {?}\n */\n DebugRenderer2.prototype.destroy = /**\n * @return {?}\n */\n function () {\n this.delegate.destroy();\n };\n /**\n * @param {?} name\n * @param {?=} namespace\n * @return {?}\n */\n DebugRenderer2.prototype.createElement = /**\n * @param {?} name\n * @param {?=} namespace\n * @return {?}\n */\n function (name, namespace) {\n var /** @type {?} */ el =\n this.delegate.createElement(name, namespace);\n var /** @type {?} */ debugCtx =\n getCurrentDebugContext();\n if (debugCtx) {\n var /** @type {?} */ debugEl = new DebugElement(el,\n null, debugCtx);\n debugEl.name = name;\n indexDebugNode(debugEl);\n }\n return el;\n };\n /**\n * @param {?} value\n * @return {?}\n */\n DebugRenderer2.prototype.createComment =\n /**\n * @param {?} value\n * @return {?}\n */\n function (value) {\n var /** @type {?} */ comment\n = this.delegate.createComment(value);\n var /** @type {?} */ debugCtx = getCurrentDebugContext();\n if\n (debugCtx) {\n indexDebugNode(new DebugNode(comment, null, debugCtx));\n }\n return\n comment;\n };\n /**\n * @param {?} value\n * @return {?}\n */\n DebugRenderer2.prototype.createText = /**\n * @param {?} value\n * @return {?}\n */\n function (value)\n {\n var /** @type {?} */ text = this.delegate.createText(value);\n var /** @type {?} */ debugCtx =\n getCurrentDebugContext();\n if (debugCtx) {\n indexDebugNode(new DebugNode(text, null,\n debugCtx));\n }\n return text;\n };\n /**\n * @param {?} parent\n * @param {?} newChild\n * @return {?}\n */\n DebugRenderer2.prototype.appendChild = /**\n * @param {?} parent\n * @param {?} newChild\n * @return {?}\n */\n function (parent, newChild) {\n var /** @type {?} */ debugEl =\n getDebugNode(parent);\n var /** @type {?} */ debugChildEl = getDebugNode(newChild);\n if (debugEl\n && debugChildEl && debugEl instanceof DebugElement) {\n debugEl.addChild(debugChildEl);\n }\n this.delegate.appendChild(parent, newChild);\n };\n /**\n * @param {?} parent\n * @param {?} newChild\n * @param {?} refChild\n * @return {?}\n */\n DebugRenderer2.prototype.insertBefore =\n /**\n * @param {?} parent\n * @param {?} newChild\n * @param {?} refChild\n * @return {?}\n */\n function (parent, newChild, refChild) {\n var /** @type {?} */ debugEl = getDebugNode(parent);\n var\n /** @type {?} */ debugChildEl = getDebugNode(newChild);\n var /** @type {?} */ debugRefEl = /** @type\n {?} */ ((getDebugNode(refChild)));\n if (debugEl && debugChildEl && debugEl instanceof DebugElement)\n {\n debugEl.insertBefore(debugRefEl, debugChildEl);\n }\n this.delegate.insertBefore(parent,\n newChild, refChild);\n };\n /**\n * @param {?} parent\n * @param {?} oldChild\n * @return {?}\n */\n DebugRenderer2.prototype.removeChild = /**\n * @param {?} parent\n * @param {?} oldChild\n * @return {?}\n */\n function (parent, oldChild) {\n var /** @type {?} */ debugEl =\n getDebugNode(parent);\n var /** @type {?} */ debugChildEl = getDebugNode(oldChild);\n if (debugEl\n && debugChildEl && debugEl instanceof DebugElement) {\n debugEl.removeChild(debugChildEl);\n }\n }\n}());

```

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}\n this.delegate.removeChild(parent, oldChild);\n };\n /**\n * @param {?} selectorOrNode\n * @return {?}\n */\n DebugRenderer2.prototype.selectRootElement = /**\n * @param {?} selectorOrNode\n * @return {?}\n */\n function (selectorOrNode) {\n var /** @type {?} */ el =\n this.delegate.selectRootElement(selectorOrNode);\n var /** @type {?} */ debugCtx =\n getCurrentDebugContext();\n if (debugCtx) {\n indexDebugNode(new DebugElement(el, null,\n debugCtx));\n }\n return el;\n };\n /**\n * @param {?} el\n * @param {?} name\n * @param {?} value\n * @param {?=} namespace\n * @return {?}\n */\n DebugRenderer2.prototype.setAttribute =\n /**\n * @param {?} el\n * @param {?} name\n * @param {?} value\n * @param {?=} namespace\n * @return {?}\n */\n function (el, name, value, namespace) {\n var /** @type {?} */ debugEl =\n getDebugNode(el);\n if (debugEl && debugEl instanceof DebugElement) {\n var /** @type {?} */\n fullName = namespace ? namespace + ':' + name : name;\n debugEl.attributes[fullName] = value;\n }\n this.delegate.setAttribute(el, name, value, namespace);\n };\n /**\n * @param {?} el\n * @param {?} name\n * @param {?=} namespace\n * @return {?}\n */\n DebugRenderer2.prototype.removeAttribute =\n /**\n * @param {?} el\n * @param {?} name\n * @param {?=} namespace\n * @return {?}\n */\n function (el, name, namespace) {\n var /** @type {?} */ debugEl = getDebugNode(el);\n if (debugEl &&\n debugEl instanceof DebugElement) {\n var /** @type {?} */ fullName = namespace ? namespace + ':' +\n name : name;\n debugEl.attributes[fullName] = null;\n }\n this.delegate.removeAttribute(el, name,\n namespace);\n };\n /**\n * @param {?} el\n * @param {?} name\n * @return {?}\n */\n DebugRenderer2.prototype.addClass = /**\n * @param {?} el\n * @param {?} name\n * @return {?}\n */\n function (el, name) {\n var /** @type {?} */ debugEl = getDebugNode(el);\n if (debugEl &&\n debugEl instanceof DebugElement) {\n debugEl.classes[name] = true;\n }\n this.delegate.addClass(el, name);\n };\n /**\n * @param {?} el\n * @param {?} name\n * @return {?}\n */\n DebugRenderer2.prototype.removeClass = /**\n * @param {?} el\n * @param {?} name\n * @return {?}\n */\n function (el, name) {\n var /** @type {?} */ debugEl = getDebugNode(el);\n if\n (debugEl && debugEl instanceof DebugElement) {\n debugEl.classes[name] = false;\n }\n this.delegate.removeClass(el, name);\n };\n /**\n * @param {?} el\n * @param {?} style\n * @param {?} value\n * @param {?} flags\n * @return {?}\n */\n DebugRenderer2.prototype.setStyle = /**\n * @param {?} el\n * @param {?} style\n * @param {?} value\n * @param {?} flags\n * @return {?}\n */\n function (el, style, value, flags) {\n var /** @type {?} */ debugEl = getDebugNode(el);\n if (debugEl\n && debugEl instanceof DebugElement) {\n debugEl.styles[style] = value;\n }\n this.delegate.setStyle(el, style, value, flags);\n };\n /**\n * @param {?} el\n * @param {?} style\n * @param {?} flags\n * @return {?}\n */\n DebugRenderer2.prototype.removeStyle = /**\n * @param {?} el\n * @param {?} style\n * @param {?} flags\n * @return {?}\n */\n function (el, style, flags) {\n var /** @type {?} */ debugEl = getDebugNode(el);\n if (debugEl && debugEl instanceof DebugElement) {\n debugEl.styles[style] = null;\n }\n this.delegate.removeStyle(el, style, flags);\n };\n /**\n * @param {?} el\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n DebugRenderer2.prototype.setProperty = /**\n * @param {?} el\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n function (el, name, value) {\n var /** @type {?} */ debugEl =\n getDebugNode(el);\n if (debugEl && debugEl instanceof DebugElement) {\n debugEl.properties[name]\n = value;\n }\n this.delegate.setProperty(el, name, value);\n };\n /**\n * @param {?} target\n * @param {?} eventName\n * @param {?} callback\n * @return {?}\n */\n DebugRenderer2.prototype.listen = /**\n * @param {?} target\n * @param {?} eventName\n * @param {?} callback\n * @return {?}\n */\n function (target, eventName, callback) {\n if (typeof target !== 'string')\n {\n var /** @type {?} */ debugEl = getDebugNode(target);\n if (debugEl) {\n debugEl.listeners.push(new EventListener(eventName, callback));\n }\n }\n return\n this.delegate.listen(target, eventName, callback);\n };\n /**\n * @param {?} node\n * @return {?}\n */\n DebugRenderer2.prototype.parentNode = /**\n * @param {?} node\n * @return {?}\n */\n function\n (node) {\n return this.delegate.parentNode(node);\n };\n /**\n * @param {?} node\n * @return {?}\n */

```

```

DebugRenderer2.prototype.nextSibling = /**\n * @param {?} node\n * @return {?}\n */\n function (node)
{ return this.delegate.nextSibling(node); };
\n /**\n * @param {?} node\n * @param {?} value\n * @return
{?}\n */\n DebugRenderer2.prototype.setValue = /**\n * @param {?} node\n * @param {?} value\n *
@return {?}\n */\n function (node, value) { return this.delegate.setValue(node, value); };
\n return
DebugRenderer2;\n})();
\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
*\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */
\n/**\n * @param
{?} override\n * @return {?}\n */\n function overrideProvider(override) {\n initServicesIfNeeded();\n return
Services.overrideProvider(override);\n}\n\n/**\n * @param {?} comp\n * @param {?} componentFactory\n *
@return {?}\n */\n function overrideComponentView(comp, componentFactory) {\n initServicesIfNeeded();\n
return Services.overrideComponentView(comp, componentFactory);\n}\n\n/**\n * @return {?}\n */\n function
clearOverrides() {\n initServicesIfNeeded();\n return Services.clearOverrides();\n}\n\n/**\n * @param {?}
ngModuleType\n * @param {?} bootstrapComponents\n * @param {?} defFactory\n * @return {?}\n */\n function
createNgModuleFactory(ngModuleType, bootstrapComponents, defFactory) {\n return new
NgModuleFactory_(ngModuleType, bootstrapComponents, defFactory);\n}\n\nvar NgModuleFactory_ = /** @class
*/ (function (_super) {\n __extends(NgModuleFactory_, _super);\n function NgModuleFactory_(moduleType,
_bootstrapComponents, _ngModuleDefFactory) {\n var _this = \n // Attention: this ctor is called as top
level function.\n // Putting any logic in here will destroy closure tree shaking!\n _super.call(this) || this;\n
_this.moduleType = moduleType;\n _this._bootstrapComponents = _bootstrapComponents;\n
_this._ngModuleDefFactory = _ngModuleDefFactory;\n return _this;\n }\n /**\n * @param {?}
parentInjector\n * @return {?}\n */\n NgModuleFactory_.prototype.create = /**\n * @param {?}
parentInjector\n * @return {?}\n */\n function (parentInjector) {\n initServicesIfNeeded();\n var /**
@type {?} */ def = resolveDefinition(this._ngModuleDefFactory);\n return
Services.createNgModuleRef(this.moduleType, parentInjector || Injector.NULL, this._bootstrapComponents, def);\n
 };\n return NgModuleFactory_;\n})(NgModuleFactory_);\n\n/**\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n */
\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n */
\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */
\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n
*/
\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */
\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license
that can be\n * found in the LICENSE file at https://angular.io/license\n */
\n/**\n * The functions in this file verify that
the assumptions we are making\n * about state in an instruction are correct before implementing any logic.\n * They
are meant only to be called in dev mode as sanity checks.\n */
\n/**\n * Stringifies values such that strings are wrapped in
explicit quotation marks and\n * other types are stringified normally. Used in error messages (e.g. assertThrow)\n *
to make it clear that certain values are of the string type when comparing.\n * e.g. `expected \"3\" to be 3` is
easier to understand than `expected 3 to be 3`.\n */
\n/**\n * @param {?} value The value to be stringified\n * @return {?}
The stringified value\n */\n function stringifyValueForError(value) {\n return typeof value === 'string' ? "\"" +
value + "\"" : " " + value;\n}\n\n/**\n * @param {?} actual\n * @param {?} name\n * @return {?}\n */\n function
assertEqual(actual, expected, name, serializer)\n * @return {?}\n */\n function assertEquals(actual, expected, name, serializer) {\n (actual !== expected) &&
assertThrow(actual, expected, name, '==', serializer);\n}\n\n/**\n * @template T\n * @param {?} actual\n * @param
{?} expected\n * @param {?} name\n * @return {?}\n */\n function assertLessThan(actual, expected, name) {\n
(actual < expected) && assertThrow(actual, expected, name, '>');\n}\n\n/**\n * @template T\n * @param {?} actual\n
* @param {?} name\n * @return {?}\n */\n function assertNotNull(actual, name) {\n assertNotEqual(actual, null,
name);\n}\n\n/**\n * @template T\n * @param {?} actual\n * @param {?} expected\n * @param {?} name\n *
@return {?}\n */\n function assertNotEqual(actual, expected, name) {\n (actual === expected) &&

```

```

assertThrow(actual, expected, name, '!');\n\n/**\n * Throws an error with a message constructed from the
arguments.\n * @template T\n * @param {?} actual The actual value (e.g. 3)\n * @param {?} expected The
expected value (e.g. 5)\n * @param {?} name The name of the value being checked (e.g. attrs.length)\n * @param
{?} operator The comparison operator (e.g. <, >, ==)\n * @param {?=} serializer Function that maps a value to its
display value\n * @return {?}\n */\nfunction assertThrow(actual, expected, name, operator, serializer) {\n if
(serializer === void 0) { serializer = stringifyValueForError; }\n throw new Error("ASSERT: expected '" + name
+ "' + operator + "' + serializer(expected) + "' but was '" + serializer(actual) + "'");\n}\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * Copyright
Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be
found in the LICENSE file at https://angular.io/license\n */\n\nif (typeof ngDevMode == 'undefined') {\n if (typeof
window != 'undefined')\n (** @type {?} */ (window)).ngDevMode = true;\n if (typeof self != 'undefined')\n (** @type {?} */ (self)).ngDevMode = true;\n if (typeof global != 'undefined')\n (** @type {?} */
(global)).ngDevMode = true;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked
by tsc\n */\n\n/**\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is
governed by an MIT-style license that can be found in the LICENSE file at https://angular.io/license\n */\n\n/**\n *
@param {?} node\n * @param {?} type\n * @return {?}\n */\nfunction assertNodeType(node, type) {\n assertNotEqual(node, null, 'node');\n assertEquals(node.flags & 3 /* TYPE_MASK */, type, 'Node.type',
typeSerializer);\n}\n\n/**\n * @param {?} node\n * @param {...?} types\n * @return {?}\n */\nfunction
assertNodeType(node, type, ...types) {\n if (type == 1 /* Projection */) return 'Projection';\n if (type == 0 /* Container */) return 'Container';\n if (type == 2 /* View */) return 'View';\n if (type == 3 /* Element */) return 'Element';\n return '???' + type + '??';\n}\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n/**\n * Copyright
Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be
found in the LICENSE file at https://angular.io/license\n */\n\n/**\n * Finds the closest DOM node above a given
container in the hierarchy.\n * This is necessary to add or remove elements from the DOM when a view is
added or removed from the container. e.g. parent.removeChild(...)\n * @param {?} containerNode The container
node whose parent must be found\n * @return {?} Closest DOM node above the container\n */\nfunction
findNativeParent(containerNode) {\n var /** @type {?} */ container = containerNode;\n while (container) {\n
 ngDevMode && assertNodeType(container, 0 /* Container */);\n var /** @type {?} */ renderParent =
container.data.renderParent;\n if (renderParent != null) {\n return renderParent.native;\n }\n var
/** @type {?} */ viewOrElement = /** @type {?} */ ((container.parent));\n ngDevMode &&
assertNotNull(viewOrElement, 'container.parent');\n if ((viewOrElement.flags & 3 /* TYPE_MASK */) == 3
/* Element */) {\n // we are an LElement, which means we are past the last LContainer.\n // This
means than we have not been projected so just ignore.\n return null;\n }\n ngDevMode &&
assertNodeType(viewOrElement, 2 /* View */);\n container = /** @type {?} */ (viewOrElement).parent;\n
}\n return null;\n}\n\n/**\n * Finds the DOM element before which a certain view should be inserting its\n * child
elements.\n * If the view has a next (e.g. for loop), elements should be inserted before\n * the next view's first
child element. Otherwise, the container's comment\n * anchor is the marker.\n * @param {?} index The index of
the view to check\n * @param {?} state ContainerState of the parent container\n * @param {?} native Comment
anchor for container\n * @return {?} The DOM element for which the view should insert elements\n */\nfunction
findBeforeNode(index, state, native) {\n var /** @type {?} */ views = state.views;\n // Find the node to insert in
front of\n return index + 1 < views.length ?\n /** @type {?} */ (views[index + 1].child).native :\n native;\n}\n\n/**\n * @param {?} container\n * @param {?} rootNode\n * @param {?} insertMode\n * @param
{?=} beforeNode\n * @return {?}\n */\nfunction addRemoveViewFromContainer(container, rootNode, insertMode,
beforeNode) {\n ngDevMode && assertNodeType(container, 0 /* Container */);\n ngDevMode &&
assertNodeType(rootNode, 2 /* View */);\n var /** @type {?} */ parent = findNativeParent(container);\n var /**
@type {?} */ node = rootNode.child;\n if (parent) {\n while (node) {\n var /** @type {?} */ type =
node.flags & 3;\n var /** @type {?} */ nextNode = null;\n var /** @type {?} */ renderer =

```



```

// Notify query that view has been inserted\n container.query && container.query.insertView(container, newView,
index);\n return newView;\n}\n\n/**\n * Removes a view from a container.\n *\n * This method splices the view
from the container's array of active views. It also\n * removes the view's elements from the DOM and conducts
cleanup (e.g. removing\n * listeners, calling onDestroy).\n *\n * @param {?} container The container from which
to remove a view\n *\n * @param {?} removeIndex The index of the view to remove\n *\n * @return {?} The removed
view\n */\nfunction removeView(container, removeIndex) {\n var /** @type {?} */ views =
container.data.views;\n var /** @type {?} */ viewNode = views[removeIndex];\n if (removeIndex > 0) {\n
setViewNext(views[removeIndex - 1], viewNode.next);\n }\n views.splice(removeIndex, 1);\n destroyViewTree(viewNode.data);\n addRemoveViewFromContainer(container, viewNode, false);\n // Notify
query that view has been removed\n container.query && container.query.removeView(container, viewNode,
removeIndex);\n return viewNode;\n}\n\n/**\n * Sets a next on the view node, so views in for loops can easily jump
from\n * one view to the next to add/remove elements. Also adds the ViewState (view.data)\n * to the view tree for
easy traversal when cleaning up the view.\n *\n * @param {?} view The view to set up\n *\n * @param {?} next The
view's new next\n *\n * @return {?} */\nfunction setViewNext(view, next) {\n view.next = next;\n view.data.next
= next ? next.data : null;\n}\n\n/**\n * Determines which ViewOrContainerState to jump to when traversing back up
the\n * tree in destroyViewTree.\n *\n * Normally, the view's parent ViewState should be checked, but in the case
of\n * embedded views, the container (which is the view node's parent, but not the\n * ViewState's parent) needs to
be checked for a possible next property.\n *\n * @param {?} state The ViewOrContainerState for which we need a
parent state\n *\n * @param {?} rootView The rootView, so we don't propagate too far up the view tree\n *\n * @return {?}
The correct parent ViewOrContainerState\n */\nfunction getParentState(state, rootView) {\n var /** @type {?} */
node;\n if ((node = /** @type {?} */ (((/** @type {?} */ (state))))).node) &&\n (node.flags & 3 /*
TYPE_MASK */) === 2 /* View */) {\n // if it's an embedded view, the state needs to go up to the container, in
case the\n // container has a next\n return /** @type {?} */ (((node.parent)).data);\n }\n else {\n //
otherwise, use parent view for containers or component views\n return state.parent === rootView ? null :
state.parent;\n }\n}\n\n/**\n * Removes all listeners and call all onDestroy in a given view.\n *\n * @param {?}
viewState The ViewState of the view to clean up\n *\n * @return {?} */\nfunction cleanUpView(viewState) {\n if
(!viewState.cleanup)\n return;\n var /** @type {?} */ cleanup = /** @type {?} */ ((viewState.cleanup));\n for
(var /** @type {?} */ i = 0; i < cleanup.length - 1; i += 2) {\n if (typeof cleanup[i] === 'string') {\n
/** @type {?} */ ((cleanup)[i + 1]).removeEventListener(cleanup[i], cleanup[i + 2], cleanup[i + 3]);\n i +=
2;\n }\n else {\n cleanup[i].call(cleanup[i + 1]);\n }\n}\n viewState.cleanup = null;\n}\n\n/**\n * Appends the provided child element to the provided parent, if appropriate.\n *\n * If the parent is a view, the
element will be appended as part of viewEnd(), so\n * the element should not be appended now. Similarly, if the
child is a content child\n * of a parent component, the child will be appended to the right position later by\n * the
content projection system. Otherwise, append normally.\n *\n * @param {?} parent The parent to which to append
the child\n *\n * @param {?} child The child that should be appended\n *\n * @param {?} currentView The current view's
ViewState\n *\n * @return {?} Whether or not the child was appended\n */\nfunction appendChild(parent, child,
currentView) {\n // Only add native child element to parent element if the parent element is regular Element.\n //
If parent is:\n // - Regular element => add child\n // - Component host element =>\n // - Current View, and
parent view same => content => don't add -> parent component will\n // re-project if needed.\n // - Current
View, and parent view different => view => add Child\n // - View element => View's get added separately.\n if
(child !== null && (parent.flags & 3 /* TYPE_MASK */) === 3 /* Element */ &&\n (parent.view !==\n currentView /* Crossing View Boundaries, it is Component, but add Element of View *\n // parent.data ===
null /* Regular Element. */) {\n // We only add element if not in View or not projected.\n var /** @type
{?} */ renderer = currentView.renderer;\n /** @type {?} */ (renderer).listen ? /** @type {?} */ (((/** @type
{?} */ (renderer)).appendChild)(/** @type {?} */ (((parent.native))), child) : /** @type {?} */
((parent.native)).appendChild(child);\n return true;\n }\n return false;\n}\n\n/**\n * Inserts the provided node
before the correct element in the DOM, if appropriate.\n *\n * If the parent is a view, the element will be inserted as
part of viewEnd(), so\n * the element should not be inserted now. Similarly, if the child is a content child\n * of a

```



The token associated with the error

```

 * @return {?} The error that was created
 */
function createInjectionError(text, token) {
 return new Error("ElementInjector: " + text + " [" + stringify$1(token) +
 "]);
}

```

Makes a directive public to the DI system by adding it to an injector's bloom filter.

```

 *
 * @param {?} di The node injector in which a directive will be added
 * @param {?} def The definition of the directive to be made public
 * @return {?}
 */
function makeDirectivePublic(injector, def) {
 // Searches for an instance of the given directive type up
 // the injector tree and returns that instance if found. Specifically, it gets the bloom filter bit associated with
 // the directive (see bloomHashBit), checks that bit against the bloom filter structure to identify an injector that
 // might have the directive (see bloomFindPossibleInjector), then searches the directives on that injector for a
 // match. If not found, it will propagate up to the next parent injector until the token is found or the top is
 // reached.
 * @template T
 * @param {?} di Node injector where the search should start
 * @param {?} token The directive type to search for
 * @param {?=} flags Injection flags (e.g. CheckParent)
 * @return {?} The instance found
 */
function bloomFilterContains(injector, type) {
 // Given a directive type, this function returns the bit in an injector's bloom filter that should be used to
 // determine whether or not the directive is present. When the directive was added to the bloom filter, it was
 // given a unique ID that can be retrieved on the class. Since there are only BLOOM_SIZE slots per bloom filter,
 // the directive's ID must be modulo-ed by BLOOM_SIZE to get the correct bloom bit (directives share slots after
 // BLOOM_SIZE is reached).
 * @param {?} type The directive type
 * @return {?} The bloom bit to check for the directive
 */
function bloomHashBit(type) {
 var id = /** @type {?} */ id = /** @type {?} */ (type)[NG_ELEMENT_ID];
 return typeof id === 'number' ? id % BLOOM_SIZE : null;
}

Finds the closest injector that might have a certain directive. Each directive corresponds to a bit in an injector's bloom filter. Given the bloom bit to check and a starting injector, this function traverses up injectors until it finds an injector that contains a 1 for that bit in its bloom filter. A 1 indicates that the injector may have that directive. It only may have the directive because directives begin to share bloom filter bits after the BLOOM_SIZE is reached, and it could correspond to a different directive sharing the bit.
Note: We can skip checking further injectors up the tree if an injector's cbf structure has a 0 for that bloom bit. Since cbf contains the merged value of all the parent injectors, a 0 in the bloom bit indicates that the parents definitely do not contain the directive and do not need to be checked.
 * @param {?} startInjector
 * @param {?} bloomBit The bit to check in each injector's bloom filter
 * @return {?} An injector that might have the directive
 */
function bloomFindPossibleInjector(startInjector, bloomBit) {
 // Create a mask that targets the specific bit associated with the directive we're looking for. JS bit operations are 32 bits, so this will be a number between 2^0 and 2^31, corresponding to bit positions 0 - 31 in a 32 bit integer.
 var mask = 1 << bloomBit;
 // Traverse up the injector tree until we find a potential match or until we know there isn't a match.
 var injector = startInjector;
 while (injector) {
 // Our bloom filter size is 128 bits, which is four 32-bit bloom filter buckets:
 // bf0 = [0 - 31], bf1 = [32 - 63], bf2 = [64 - 95], bf3 = [96 - 127]
 // Get the bloom filter value from the appropriate bucket based on the directive's bloomBit.
 var value = bloomBit < 64 ? (bloomBit < 32 ? injector.bf0 : injector.bf1) : (bloomBit < 96 ? injector.bf2 : injector.bf3);
 // If the bloom filter value has the bit corresponding to the directive's bloomBit flipped on, this injector is a potential match.
 if ((value & mask) === mask) {
 return injector;
 }
 // If the current injector does not have the directive, check the bloom filters for the ancestor injectors (cbf0 - cbf3). These filters capture all ancestor injectors.
 value = bloomBit < 64 ? (bloomBit < 32 ? injector.cbf0 : injector.cbf1) : (bloomBit < 96 ? injector.cbf2 : injector.cbf3);
 // If the ancestor bloom filter value has the bit corresponding to the directive, traverse up to find the specific injector. If the ancestor bloom filter does not have the bit, we can abort.
 injector = (value & mask) ? injector.parent : null;
 }
 return null;
}

```

Creates an ElementRef for a given node injector and stores it on the injector. Or, if the ElementRef already exists, retrieves the existing ElementRef.

```

 *
 * @param {?} di The node injector where we should store a created ElementRef
 * @return {?} The ElementRef instance to use
 */
function createInjectorElementRef(injector) {
 // Creates a TemplateRef and stores it on the injector. Or, if the TemplateRef already exists, retrieves the existing TemplateRef.
 * @template T
 * @param {?} di The node injector where we should store a created TemplateRef
 * @return {?} The TemplateRef instance to use
 */
function createInjectorTemplateRef(injector) {
 // Creates a ViewContainerRef

```



and stores it on the injector. Or, if the ViewContainerRef already exists, retrieves the existing ViewContainerRef.

```

@fileoverview added by tsickle
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A predicate which determines if a given element/directive should be included in the query
@record
@nvar QueryList_ = /** @class */ (function ()
{
 function QueryList_() {
 this.dirty = false;
 /** @internal */
 this._valuesTree = null;
 /** @internal */
 this._values = null;
 }
 Object.defineProperty(QueryList_.prototype, 'length', {
 get: /** @return {?} */
 function () {
 ngDevMode && assertNotNull(this._values, 'refreshed');
 return /** @type {?} */ ((this._values)).length;
 },
 enumerable: true,
 configurable: true
 });
 Object.defineProperty(QueryList_.prototype, 'first', {
 get: /** @return {?} */
 function () {
 ngDevMode && assertNotNull(this._values, 'refreshed');
 var /** @type {?} */ values = /** @type {?} */ ((this._values));
 return values.length ? values[0] : null;
 },
 enumerable: true,
 configurable: true
 });
 Object.defineProperty(QueryList_.prototype, 'last', {
 get: /** @return {?} */
 function () {
 ngDevMode && assertNotNull(this._values, 'refreshed');
 var /** @type {?} */ values = /** @type {?} */ ((this._values));
 return values.length ? values[values.length - 1] : null;
 },
 enumerable: true,
 configurable: true
 });
 /** @internal */
 QueryList_.prototype._refresh = /** @return {?} */
 function () {
 // TODO(misko): needs more logic to flatten tree.
 if (this._values === null)
 this._values = this._valuesTree;
 return true;
 };
 /** @template U */
 QueryList_.prototype.map = /** @template U */
 function (fn) {
 throw new Error('Method not implemented.');
```

```

DashCase: 2,\n};\nRendererStyleFlags3[RendererStyleFlags3.Important] =
\'Important\';\nRendererStyleFlags3[RendererStyleFlags3.DashCase] = \'DashCase\';\n/**\n * Object Oriented
style of API needed to create elements and text nodes.\n *\n * This is the native browser API style, e.g. operations
are methods on individual objects\n * like HTMLElement. With this style, no additional code is needed as a
facade\n * (reducing payload size).\n *\n * @record\n */\n *\n * Procedural style of API needed to create
elements and text nodes.\n *\n * In non-native browser environments (e.g. platforms such as web-workers), this is
the\n * facade that enables element manipulation. This also facilitates backwards compatibility\n * with
Renderer2.\n *\n * @record\n */\n *\n * @record\n */\n\nvar domRendererFactory3 = {\n createRenderer: function
(hostElement, rendererType) { return document; }\n};\n/**\n * Subset of API needed for appending elements and
text nodes.\n *\n * @record\n */\n *\n * Subset of API needed for writing attributes, properties, and setting up\n *
listeners on Element.\n *\n * @record\n */\n *\n * @record\n */\n *\n * @record\n */\n *\n * @record\n
*/\n *\n * @record\n */\n *\n * @fileoverview added by tsickle\n *\n * @suppress {checkTypes} checked by
ts\n */\n *\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n *\n * Directive (D) sets a property on all component instances using this constant as a key and the\n * component's host
node (LElement) as the value. This is used in methods like detectChanges to\n * facilitate jumping from an instance
to the host node.\n *\n\nvar NG_HOST_SYMBOL = \'__ngHostLNode__\';\n/**\n * This property gets set before
entering a template.\n *\n * This renderer can be one of two varieties of Renderer3:\n *\n * -
ObjectedOrientedRenderer3\n *\n * This is the native browser API style, e.g. operations are methods on individual
objects\n * like HTMLElement. With this style, no additional code is needed as a facade (reducing payload\n *
size).\n *\n * - ProceduralRenderer3\n *\n * In non-native browser environments (e.g. platforms such as web-
workers), this is the facade\n * that enables element manipulation. This also facilitates backwards compatibility
with\n * Renderer2.\n */\n\nvar renderer;\nvar rendererFactory;\n/**\n * Used to set the parent property when nodes
are created.\n *\n\nvar previousOrParentNode;\n/**\n * If `isParent` is:\n * - `true`: then `previousOrParentNode`
points to a parent node.\n * - `false`: then `previousOrParentNode` points to previous node (sibling).\n */\n\nvar
isParent;\n/**\n * The current template's static data (shared between all templates of a\n * given type).\n *\n * Each
node's static data is stored at the same index that it's stored\n * in the data array. Any nodes that do not have static
data store a null\n * value to avoid a sparse array.\n *\n\nvar ngStaticData;\n/**\n * State of the current view being
processed.\n *\n\nvar currentView;\n// The initialization has to be after the `let`, otherwise `createViewState` can't see
`let`.\n\ncurrentView = createViewState(/** @type {?} */ ((null)), /** @type {?} */ ((null)), []);\n\nvar
currentQuery;\n/**\n * This property gets set before entering a template.\n *\n\nvar creationMode;\n/**\n * An array
of nodes (text, element, container, etc), their bindings, and\n * any local variables that need to be stored between
invocations.\n *\n\nvar data;\n/**\n * Points to the next binding index to read or write to.\n *\n\nvar
bindingIndex;\n/**\n * When a view is destroyed, listeners need to be released\n * and onDestroy callbacks need to
be called. This cleanup array\n * stores both listener data (in chunks of 4) and onDestroy data\n * (in chunks of 2),
as they'll be processed at the same time.\n *\n * If it's a listener being stored:\n * 1st index is: event name to
remove\n * 2nd index is: native element\n * 3rd index is: listener function\n * 4th index is: useCapture boolean\n
*\n * If it's an onDestroy function:\n * 1st index is: onDestroy function\n * 2nd index is: context for function\n
*\n\nvar cleanup;\n/**\n * Index in the data array at which view hooks begin to be stored.\n *\n\nvar
viewHookStartIndex;\n/**\n * Swap the current state with a new state.\n *\n * For performance reasons we store the
state in the top level of the module.\n * This way we minimize the number of properties to read. Whenever a new
view\n * is entered we have to store the state for later, and when the view is\n * exited the state has to be
restored\n *\n * @param {?} newViewState New state to become active\n * @param {?} host Element to which the View is a
child of\n * @return {?} the previous state;\n */\n\nfunction enterView(newViewState, host) {\n var /** @type {?}
*/\n oldViewState = currentView;\n data = newViewState.data;\n bindingIndex =
newViewState.bindingStartIndex || 0;\n ngStaticData = newViewState.ngStaticData;\n creationMode =
newViewState.creationMode;\n viewHookStartIndex = newViewState.viewHookStartIndex;\n cleanup =
newViewState.cleanup;\n renderer = newViewState.renderer;\n if (host != null) {\n previousOrParentNode

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= host;\n isParent = true;\n }\n currentView = new ViewState;\n return /** @type {?} */
((oldViewState));\n}\n\n/**\n * Used in lieu of enterView to make it clear when we are exiting a child view. This
makes\n * the direction of traversal (up or down the view tree) a bit clearer.\n * @param {?} new ViewState\n *
@return {?} */\n * \nfunction leaveView(new ViewState) {\n executeViewHooks();\n enterView(new ViewState,
null);\n}\n\n/**\n * @param {?} viewId\n * @param {?} renderer\n * @param {?} ngStaticData\n * @return {?} */\n * \nfunction createState(viewId, renderer, ngStaticData) {\n var /** @type {?} */ newView = {\n parent:
currentView,\n id: viewId,\n // -1 for component views\n node: /** @type {?} */ ((null)),\n // until
we initialize it in createNode.\n data: [],\n ngStaticData: ngStaticData,\n cleanup: null,\n renderer:
renderer,\n child: null,\n tail: null,\n next: null,\n bindingStartIndex: null,\n creationMode:
true,\n viewHookStartIndex: null\n };\n return newView;\n}\n\n/**\n * @param {?} index\n * @param {?}
type\n * @param {?} native\n * @param {=?} state\n * @return {?} */\n * \nfunction createLNode(index, type,
native, state) {\n var /** @type {?} */ parent = isParent ? previousOrParentNode : \n previousOrParentNode
&& /** @type {?} */ (previousOrParentNode.parent);\n var /** @type {?} */ query = (isParent ? currentQuery :
previousOrParentNode && previousOrParentNode.query) || \n parent && parent.query &&
parent.query.child();\n var /** @type {?} */ isState = state != null;\n var /** @type {?} */ node = {\n flags:
type,\n native: /** @type {?} */ (native),\n view: currentView,\n parent: /** @type {?} */ (parent),\n
 child: null,\n next: null,\n nodeInjector: parent ? parent.nodeInjector : null,\n data: isState ? /** @type
{?} */ (state) : null,\n query: query,\n staticData: null\n };\n if ((type & 2 /* ViewOrElement */) === 2
/* ViewOrElement */ && isState) {\n // Bit of a hack to bust through the readonly because there is a circular
dep between\n // ViewState and LNode.\n ngDevMode && assertEquals((/** @type {?} */ (state)).node,
null, 'viewState.node');\n (/** @type {?} */ ((state)).node = node);\n }\n if (index != null) {\n // We are
Element or Container\n ngDevMode && assertEquals(data.length, index, 'data.length not in sequence');\n data[index] = node;\n // Every node adds a value to the static data array to avoid a sparse array\n if (index
>= ngStaticData.length) {\n ngStaticData[index] = null;\n }\n else {\n node.staticData = /**
@type {?} */ (ngStaticData[index]);\n }\n // Now link ourselves into the tree.\n if (isParent) {\n
currentQuery = null;\n if (previousOrParentNode.view === currentView || \n
(previousOrParentNode.flags & 3 /* TYPE_MASK */) === 2 /* View */) {\n // We are in the same view,
which means we are adding content node to the parent View.\n ngDevMode &&
assertEquals(previousOrParentNode.child, null, 'previousNode.child');\n previousOrParentNode.child =
node;\n }\n else {\n // We are adding component view, so we don't link parent node child to
this node.\n }\n }\n else if (previousOrParentNode) {\n ngDevMode &&
assertEquals(previousOrParentNode.next, null, 'previousNode.next');\n previousOrParentNode.next = node;\n
 }\n }\n previousOrParentNode = node;\n isParent = true;\n return node;\n}\n\n/**\n * Resets the application
state.\n * @return {?} */\n * \nfunction resetApplicationState() {\n isParent = false;\n previousOrParentNode = /**
@type {?} */ ((null));\n}\n\n/**\n * \n * @template T\n * @param {?} hostNode\n * @param {?} template Template
function with the instructions.\n * @param {?} context to pass into the template.\n * @param {?}
providedRendererFactory\n * @param {?} host Existing node to render into.\n * @return {?} */\n * \n\n *
@template T\n * @param {?} node\n * @param {?} viewState\n * @param {?} componentOrContext\n * @param
{=?} template\n * @return {?} */\n * \nfunction renderComponentOrTemplate(node, viewState, componentOrContext,
template) {\n var /** @type {?} */ oldView = enterView(viewState, node);\n try {\n if
(rendererFactory.begin) {\n rendererFactory.begin();\n }\n if (template) {\n ngStaticData =
template.ngStaticData || (template.ngStaticData = /** @type {?} */ ());\n template(/** @type {?} */
((componentOrContext)), creationMode);\n }\n else {\n // Element was stored at 0 and directive was
stored at 1 in renderComponent\n // so to refresh the component, r() needs to be called with (1, 0)\n
(/** @type {?} */ (componentOrContext.constructor)).ngComponentDef.r(1, 0);\n }\n }\n finally {\n if
(rendererFactory.end) {\n rendererFactory.end();\n }\n viewState.creationMode = false;\n
leaveView(oldView);\n }\n}\n\n/**\n * \n * @return {?} */\n * \n\n * Makes a directive public to the DI system by
adding it to an injector's bloom filter.\n * \n * @param {?} def The definition of the directive to be made public\n *

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@param {?} flags\n * @param {?} data\n * @param {?=} isInputData\n * @return {?} \n *\nfunction
generatePropertyAliases(flags, data, isInputData) {\n if (isInputData === void 0) { isInputData = false; }\n var
/** @type {?} */ start = flags >> 12;\n var /** @type {?} */ size = (flags & 4092 /* SIZE_MASK */) >> 2;\n
for (var /** @type {?} */ i = start, /** @type {?} */ ii = start + size; i < ii; i++) {\n var /** @type {?} */
directiveDef = /** @type {?} */ (((ngStaticData)[i]));\n var /** @type {?} */ propertyAliasMap = isInputData ?
directiveDef.inputs : directiveDef.outputs;\n for (var /** @type {?} */ publicName in propertyAliasMap) {\n
 if (propertyAliasMap.hasOwnProperty(publicName)) {\n var /** @type {?} */ internalName =
propertyAliasMap[publicName];\n var /** @type {?} */ staticDirData = isInputData ? (data.inputs ||
(data.inputs = {})) :\n (data.outputs || (data.outputs = {}));\n var /** @type {?} */ hasProperty
= staticDirData.hasOwnProperty(publicName);\n hasProperty ? staticDirData[publicName].push(i,
internalName) :\n (staticDirData[publicName] = [i, internalName]);\n }\n }\n }\n return
data;\n}\n\n/**\n * Add or remove a class in a classList.\n * \n * This instruction is meant to handle the
[class.foo]="exp" case\n * \n * @template T\n * @param {?} index The index of the element to update in the data
array\n * @param {?} className Name of class to toggle. Because it is going to DOM, this is not subject to\n *
renaming as part of minification.\n * @param {?} value A value indicating if a given class should be added or
removed.\n * @return {?} \n *\n\n/**\n * Update a given style on an Element.\n * \n * @template T\n * @param {?}
index Index of the element to change in the data array\n * @param {?} styleName Name of property. Because it is
going to DOM this is not subject to\n * renaming as part of minification.\n * @param {?} value New value to
write (null to remove).\n * @param {?=} suffix Suffix to add to style's value (optional).\n * @return {?} \n *\n
function elementStyle(index, styleName, value, suffix) {\n if (value !== NO_CHANGE) {\n var /**
@type {?} */ IElement = /** @type {?} */ (data[index]);\n if (value === null) {\n (** @type {?} */
(renderer)).removeStyle ?\n (** @type {?} */ (renderer))\n .removeStyle(IElement.native,
styleName, RendererStyleFlags3.DashCase) :\n IElement.native.style.removeProperty(styleName);\n }\n
else {\n (** @type {?} */ (renderer)).setStyle ?\n (** @type {?} */ (renderer))\n .setStyle(IElement.native, styleName, suffix ? stringify$1(value) + suffix : stringify$1(value),
RendererStyleFlags3.DashCase) :\n IElement.native.style.setProperty(styleName, suffix ?
stringify$1(value) + suffix : stringify$1(value));\n }\n }\n}\n\n/**\n * Create static text node\n * \n * @param
{=} index Index of the node in the data array.\n * @param {?=} value Value to write. This value will be
stringified.\n * \n * If value is not provided then the actual creation of the text node is delayed.\n * @return {?} \n *\n
function text(index, value) {\n ngDevMode && assertEquals(currentView.bindingStartIndex, null,
'bindingStartIndex');\n var /** @type {?} */ textNode = value != null ?\n (** @type {?} */
(renderer)).createText ?\n (** @type {?} */ (renderer)).createText(stringify$1(value)) : /** @type {?} */
((/** @type {?} */ (renderer)).createTextNode)(stringify$1(value)));\n null;\n var /** @type {?} */ node =
createLNode(index, 3 /* Element */, textNode);\n // Text nodes are self closing.\n isParent = false;\n
appendChild(** @type {?} */ ((node.parent)), textNode, currentView);\n}\n\n/**\n * Create text node with binding\n
* Bindings should be handled externally with the proper bind(1-8) method\n * \n * @template T\n * @param {?}
index Index of the node in the data array.\n * @param {?} value Stringified value to write.\n * @return {?} \n *\n
function textBinding(index, value) {\n // TODO(misko): I don't think index < nodes.length check is needed
here.\n var /** @type {?} */ existingNode = index < data.length && /** @type {?} */ (data[index]);\n if
(existingNode && existingNode.native) {\n // If DOM node exists and value changed, update textContent\n
value !== NO_CHANGE &&\n (** @type {?} */ (renderer)).setValue ?\n (** @type {?} */
(renderer)).setValue(existingNode.native, stringify$1(value)) :\n existingNode.native.textContent =
stringify$1(value);\n }\n else if (existingNode) {\n // Node was created but DOM node creation was
delayed. Create and append now.\n existingNode.native =\n (** @type {?} */ (renderer)).createText ?\n
(** @type {?} */ (renderer)).createText(stringify$1(value)) : /** @type {?} */ ((/** @type {?} */
(renderer)).createTextNode)(stringify$1(value));\n insertChild(existingNode, currentView);\n }\n else {\n
text(index, value);\n }\n}\n\n/**\n * @template T\n * @param {?} index\n * @param {?=} directive\n * @param
{?=} directiveDef\n * @param {?=} localName\n * @return {?} \n *\nfunction directive(index, directive,

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directiveDef, localName) {\n var /** @type {?} */ instance;\n if (directive == null) {\n // return existing\n ngDevMode && assertDataInRange(index);\n instance = data[index];\n }\n else {\n ngDevMode && assertEqual(currentView.bindingStartIndex, null, 'bindingStartIndex');\n ngDevMode && assertPreviousIsParent();\n var /** @type {?} */ flags = /** @type {?} */ ((previousOrParentNode)).flags;\n var /** @type {?} */ size = flags & 4092;\n if (size === 0) {\n flags =\n (index << 12 /*\n INDX_SHIFT */) | 4 /* SIZE_SKIP */ | flags & 3 /* TYPE_MASK */;\n }\n else {\n flags += 4 /*\n SIZE_SKIP */;\n }\n /** @type {?} */ ^\n ((previousOrParentNode)).flags = flags;\n ngDevMode && assertDataInRange(index - 1);\n Object.defineProperty(directive, NG_HOST_SYMBOL, { enumerable: false, value: previousOrParentNode });\n data[index] = instance = directive;\n if (index >= ngStaticData.length) {\n ngStaticData[index] = /** @type {?} */ ((directiveDef));\n if (localName) {\n ngDevMode && assertNotNull(previousOrParentNode.staticData, 'previousOrParentNode.staticData');\n var /** @type {?} */ nodeStaticData = /** @type {?} */ ((/** @type {?} */ ((previousOrParentNode)).staticData));\n (nodeStaticData.localNames || (nodeStaticData.localNames = [])).push(localName, index);\n }\n var /** @type {?} */ diPublic_1 = /** @type {?} */ ((directiveDef)).diPublic;\n if (diPublic_1) {\n diPublic_1/** @type {?} */ /* ((directiveDef));\n }\n var /** @type {?} */ staticData = /** @type {?} */ ((previousOrParentNode.staticData));\n if (staticData && staticData.attrs) {\n setInputsFromAttrs(instance, /** @type {?} */ ((directiveDef)).inputs, staticData);\n }\n }\n return instance;\n }\n /**\n * Sets initial input properties on directive instances from attribute data\n * @param T\n * @param {?} instance Instance of the directive on which to set the initial inputs\n * @param {?} inputs The list of inputs from the directive def\n * @param {?} staticData The static data for this node\n * @return {?} ^\n */\n function setInputsFromAttrs(instance, inputs, staticData) {\n var /** @type {?} */ directiveIndex = ((previousOrParentNode.flags & 4092 /* SIZE_MASK */) >> 2 /* SIZE_SHIFT */) - 1;\n var /** @type {?} */ initialInputData = /** @type {?} */ (staticData.initialInputs);\n if (initialInputData === undefined || directiveIndex >= initialInputData.length) {\n initialInputData = generateInitialInputs(directiveIndex, inputs, staticData);\n }\n var /** @type {?} */ initialInputs = initialInputData[directiveIndex];\n if (initialInputs) {\n for (var /** @type {?} */ i = 0; i < initialInputs.length; i += 2) {\n /** @type {?} */ (instance)[initialInputs[i]] = initialInputs[i | 1];\n }\n }\n }\n /**\n * Generates initialInputData for a node and stores it in the template's static storage\n * so subsequent template invocations don't have to recalculate it.\n * initialInputData is an array containing values that need to be set as input properties\n * for directives on this node, but only once on creation. We need this array to support\n * the case where you set an @@Input property of a directive using attribute-like syntax.\n * e.g. if you have a `name` @@Input, you can set it once like this:\n * <my-component name="Bess"></my-component>\n * @param {?} directiveIndex Index to store the initial input data\n * @param {?} inputs The list of inputs from the directive def\n * @param {?} staticData The static data on this node\n * @return {?} ^\n */\n function generateInitialInputs(directiveIndex, inputs, staticData) {\n var /** @type {?} */ initialInputData = staticData.initialInputs || (staticData.initialInputs = []);\n initialInputData[directiveIndex] = null;\n var /** @type {?} */ attrs = /** @type {?} */ ((staticData.attrs));\n for (var /** @type {?} */ i = 0; i < attrs.length; i += 2) {\n var /** @type {?} */ attrName = attrs[i];\n var /** @type {?} */ minifiedInputName = inputs[attrName];\n if (minifiedInputName !== undefined) {\n var /** @type {?} */ inputsToStore = initialInputData[directiveIndex] || (initialInputData[directiveIndex] = []);\n inputsToStore.push(minifiedInputName, attrs[i | 1]);\n }\n }\n return initialInputData;\n }\n /**\n * @param {?} lifecycle\n * @param {?}=? self\n * @param {?}=? method\n * @return {?} ^\n */\n function IterateOverViewHookFunctions() {\n if (viewHookStartIndex == null)\n return;\n // Instead of using splice to remove init hooks after their first run (expensive), we\n // shift over the AFTER_CHECKED hooks as we call them and truncate once at the end.\n var /** @type {?} */ checkIndex = /** @type {?} */ (viewHookStartIndex);\n var /** @type {?} */ writeIndex = checkIndex;\n while (checkIndex < data.length) {\n // Call lifecycle hook with its context\n data[checkIndex + 1].call(data[checkIndex + 2]);\n if (data[checkIndex] === 16 /* AFTER_VIEW_CHECKED */) {\n //

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We know if the writeIndex falls behind that there is an init that needs to // be overwritten. if
(writeIndex < checkIndex) {\n data[writeIndex] = data[checkIndex];\n data[writeIndex + 1] =
data[checkIndex + 1];\n data[writeIndex + 2] = data[checkIndex + 2];\n }\n writeIndex +=
3;\n }\n checkIndex += 3;\n }\n // Truncate once at the writeIndex\n data.length =
writeIndex;\n }\n /**\n * Creates an LContainer.\n * Only `LView`s can go into `LContainer`.\n * @param
{?} index The index of the container in the data array\n * @param {?=} template Optional inline template\n *
@param {?=} tagName The name of the container element, if applicable\n * @param {?=} attrs The attrs attached
to the container, if applicable\n * @param {?=} localName\n * @return {?}\n */\n function containerStart(index,
template, tagName, attrs, localName) {\n ngDevMode && assertEquals(currentView.bindingStartIndex, null,
'bindingStartIndex');\n // If the direct parent of the container is a view, its views (including its comment)\n // will
need to be added through insertView() when its parent view is being inserted.\n // For now, it is marked
`"headless"` so we know to append its views later.\n var /** @type {?} */ comment =
renderer.createComment(ngDevMode ? 'container' : '');\n var /** @type {?} */ renderParent = null;\n var /**
@type {?} */ currentParent = isParent ? previousOrParentNode : /** @type {?} */
((previousOrParentNode.parent));\n ngDevMode && assertNotEqual(currentParent, null, 'currentParent');\n if
(appendChild(currentParent, comment, currentView)) {\n // we are adding to an Element which is either:\n
// - Not a component (will not be re-projected, just added)\n // - View of the Component\n renderParent =
/** @type {?} */ (currentParent);\n }\n var /** @type {?} */ node = createLNode(index, 0 /* Container */,\n
comment, /** @type {?} */ ({\n views: [],\n nextIndex: 0, renderParent: renderParent,\n template:
template == null ? null : template,\n next: null,\n parent: currentView\n }));\n if (node.staticData ==
null) {\n node.staticData = ngStaticData[index] =\n createNodeStatic(tagName || null, attrs || null, [],
localName || null);\n }\n // Containers are added to the current view tree instead of their embedded views\n //
because views can be removed and re-inserted.\n addToViewTree(node.data);\n }\n /**\n * @return {?}\n */\n function containerEnd() {\n if (isParent) {\n isParent = false;\n }\n else {\n ngDevMode &&
assertHasParent();\n previousOrParentNode = /** @type {?} */ ((previousOrParentNode.parent));\n }\n ngDevMode &&
assertNodeType(previousOrParentNode, 0 /* Container */);\n var /** @type {?} */ query =
previousOrParentNode.query;\n query && query.addNode(previousOrParentNode);\n }\n /**\n * Sets a container
up to receive views.\n * @param {?} index The index of the container in the data array\n * @return {?}\n */\n function containerRefreshStart(index) {\n ngDevMode && assertDataInRange(index);\n previousOrParentNode = /** @type {?} */ (data[index]);\n ngDevMode &&
assertNodeType(previousOrParentNode, 0 /* Container */);\n isParent = true;\n (/** @type {?} */
(previousOrParentNode)).data.nextIndex = 0;\n }\n /**\n * Marks the end of the LContainer.\n * Marking the end
of ViewContainer is the time when to child Views get inserted or removed.\n * @return {?}\n */\n function
containerRefreshEnd() {\n if (isParent) {\n isParent = false;\n }\n else {\n ngDevMode &&
assertNodeType(previousOrParentNode, 2 /* View */);\n ngDevMode && assertHasParent();\n previousOrParentNode = /** @type {?} */ ((previousOrParentNode.parent));\n }\n ngDevMode &&
assertNodeType(previousOrParentNode, 0 /* Container */);\n var /** @type {?} */ container = /** @type {?} */
(previousOrParentNode);\n ngDevMode && assertNodeType(container, 0 /* Container */);\n var /** @type {?} */
nextIndex = container.data.nextIndex;\n while (nextIndex < container.data.views.length) {\n // remove extra
view.\n removeView(container, nextIndex);\n }\n }\n /**\n * Creates an LView.\n * @param {?}
viewBlockId The ID of this view\n * @return {?} Whether or not this view is in creation mode\n */\n function
viewStart(viewBlockId) {\n var /** @type {?} */ container = /** @type {?} */ ((isParent ? previousOrParentNode
: /** @type {?} */ ((previousOrParentNode.parent)));\n ngDevMode && assertNodeType(container, 0 /*
Container */);\n var /** @type {?} */ containerState = container.data;\n var /** @type {?} */ views =
containerState.views;\n var /** @type {?} */ existingView = !creationMode && containerState.nextIndex <
views.length && views[containerState.nextIndex];\n var /** @type {?} */ viewUpdateMode = existingView &&
viewBlockId === (/** @type {?} */ (existingView)).data.id;\n if (viewUpdateMode) {\n previousOrParentNode = views[containerState.nextIndex++];\n ngDevMode &&

```



```

assertNodeType(previousOrParentNode, 2 /* View */);\n isParent = true;\n enterView((/** @type {?} */
(existingView)).data, /** @type {?} */ (previousOrParentNode));\n }\n else {\n // When we create a new
View, we always reset the state of the instructions.\n var /** @type {?} */ newViewState =
createViewState(viewBlockId, renderer, initViewStaticData(viewBlockId, container));\n
enterView(newViewState, createLNode(null, 2 /* View */, null, newViewState));\n
containerState.nextIndex++;\n }\n return !viewUpdateMode;\n}\n\n/**\n * Initialize the static data for the active
view.\n * Each embedded view needs to set the global ngStaticData variable to the static data for\n * that view.
Otherwise, the view's static data for a particular node would overwrite\n * the staticdata for a node in the view above
it with the same index (since it's in the\n * same template).\n * \n * @param {?} viewIndex The index of the view's
static data in containerStatic\n * @param {?} parent The parent container in which to look for the view's static
data\n * @return {?} NgStaticData\n */\nfunction initViewStaticData(viewIndex, parent) {\n ngDevMode &&
assertNodeType(parent, 0 /* Container */);\n var /** @type {?} */ containerStatic = (/** @type {?} */
(((parent)).staticData)).containerStatic;\n if (viewIndex >= containerStatic.length || containerStatic[viewIndex] ==
null) {\n containerStatic[viewIndex] = [];\n }\n return containerStatic[viewIndex];\n}\n\n/**\n * Marks the
end of the LView.\n * @return {?} \n */\nfunction viewEnd() {\n isParent = false;\n var /** @type {?} */
viewNode = previousOrParentNode = /** @type {?} */ (currentView.node);\n var /** @type {?} */ container =
/** @type {?} */ (previousOrParentNode.parent);\n ngDevMode && assertNodeType(viewNode, 2 /* View */);\n
ngDevMode && assertNodeType(container, 0 /* Container */);\n var /** @type {?} */ containerState =
container.data;\n var /** @type {?} */ previousView = containerState.nextIndex <= containerState.views.length ?
/** @type {?} */ (containerState.views[containerState.nextIndex - 1]) :
null;\n var /** @type {?} */
viewIdChanged = previousView == null ? true : previousView.data.id !== viewNode.data.id;\n if
(viewIdChanged) {\n insertView(container, viewNode, containerState.nextIndex - 1);\n
currentView.creationMode = false;\n }\n leaveView(/** @type {?} */ ((/** @type {?} */
((currentView)).parent)));\n ngDevMode && assertEqual(isParent, false, 'isParent');\n ngDevMode &&
assertNodeType(previousOrParentNode, 2 /* View */);\n}\n\n/**\n * Refreshes the component view.\n * In other
words, enters the component's view and processes it to update bindings, queries, etc.\n * \n * @param
directiveIndex\n * @param elementIndex\n * @param template\n */\nvar componentRefresh = function
(directiveIndex, elementIndex, template) {\n ngDevMode && assertDataInRange(elementIndex);\n var /**
@type {?} */ element = /** @type {?} */ (((data))[elementIndex]);\n ngDevMode && assertNodeType(element, 3
/* Element */);\n ngDevMode && assertNotEqual(element.data, null, 'isComponent');\n ngDevMode &&
assertDataInRange(directiveIndex);\n var /** @type {?} */ hostView = /** @type {?} */ ((element.data));\n
ngDevMode && assertNotEqual(hostView, null, 'hostView');\n var /** @type {?} */ directive =
data[directiveIndex];\n var /** @type {?} */ oldView = enterView(hostView, element);\n try {\n
template(directive, creationMode);\n }\n finally {\n hostView.creationMode = false;\n
leaveView(oldView);\n }\n}\n\n/**\n * Instruction to distribute projectable nodes among <ng-content> occurrences
in a given template.\n * It takes all the selectors from the entire component's template and decides where\n * each
projected node belongs (it re-distributes nodes among \"buckets\" where each \"bucket\" is\n * backed by a
selector).\n * \n * @param {?=} selectors\n * @return {?} \n */\n\n/**\n * Inserts previously re-distributed projected
nodes. This instruction must be preceded by a call\n * to the projectionDef instruction.\n * \n * @param {?}
nodeIndex\n * @param {?} localIndex - index under which distribution of projected nodes was memorized\n *
@param {?=} selectorIndex - 0 means <ng-content> without any selector\n * @return {?} \n */\n\n/**\n * Adds a
ViewState or a ContainerState to the end of the current view tree.\n * This structure will be used to traverse
through nested views to remove listeners\n * and call onDestroy callbacks.\n * \n * @template T\n * @param {?}
state The ViewState or ContainerState to add to the view tree\n * @return {?} The state passed in\n */\nfunction
addToViewTree(state) {\n currentView.tail ? (currentView.tail.next = state) : (currentView.child = state);\n
currentView.tail = state;\n return state;\n}\n\n/**\n * A special value which designates that a value has not
changed.\n * \n * @var NO_CHANGE = /** @type {?} */ ({});\n\n/**\n * Create interpolation bindings with variable
number of arguments.\n * If any of the arguments change, then the interpolation is concatenated\n * and causes

```

```

an update.\n *n * @param {?} values an array of values to diff.\n * @return {?} \n *\n\n/**\n * Create a single
value binding without interpolation.\n *n * @template T\n * @param {?} value Value to diff.\n * @return {?} \n
*\n\nfunction bind(value) {\n var /** @type {?} */ different;\n if (different = creationMode) {\n if (typeof
currentView.bindingStartIndex !== 'number') {\n bindingIndex = currentView.bindingStartIndex =
data.length;\n }\n data[bindingIndex++] = value;\n } else {\n if (different = value !==
NO_CHANGE && isDifferent(data[bindingIndex], value)) {\n data[bindingIndex] = value;\n }\n
bindingIndex++;\n }\n return different ? value : NO_CHANGE;\n}\n\n/**\n * Create an interpolation bindings
with 1 arguments.\n *n * @param {?} prefix static value used for concatenation only.\n * @param {?} value value
checked for change.\n * @param {?} suffix static value used for concatenation only.\n * @return {?} \n *\n\nfunction
bind1(prefix, value, suffix) {\n return bind(value) === NO_CHANGE ? NO_CHANGE : prefix +
stringify$1(value) + suffix;\n}\n\n/**\n * Create an interpolation bindings with 2 arguments.\n *n * @param {?}
prefix\n * @param {?} v0 value checked for change\n * @param {?} i0\n * @param {?} v1 value checked for
change\n * @param {?} suffix\n * @return {?} \n *\n\n/**\n * Create an interpolation bindings with 3 arguments.\n
*n * @param {?} prefix\n * @param {?} v0\n * @param {?} i0\n * @param {?} v1\n * @param {?} i1\n *
@param {?} v2\n * @param {?} suffix\n * @return {?} \n *\n\n/**\n * Create an interpolation binding with 4
arguments.\n *n * @param {?} prefix\n * @param {?} v0\n * @param {?} i0\n * @param {?} v1\n * @param {?}
i1\n * @param {?} v2\n * @param {?} i2\n * @param {?} v3\n * @param {?} suffix\n * @return {?} \n *\n\n/**\n
* Create an interpolation binding with 5 arguments.\n *n * @param {?} prefix\n * @param {?} v0\n * @param {?}
i0\n * @param {?} v1\n * @param {?} i1\n * @param {?} v2\n * @param {?} i2\n * @param {?} v3\n * @param
{?} i3\n * @param {?} v4\n * @param {?} suffix\n * @return {?} \n *\n\n/**\n * Create an interpolation binding
with 6 arguments.\n *n * @param {?} prefix\n * @param {?} v0\n * @param {?} i0\n * @param {?} v1\n *
@param {?} i1\n * @param {?} v2\n * @param {?} i2\n * @param {?} v3\n * @param {?} i3\n * @param {?}
v4\n * @param {?} i4\n * @param {?} v5\n * @param {?} suffix\n * @return {?} \n *\n\n/**\n * Create an
interpolation binding with 7 arguments.\n *n * @param {?} prefix\n * @param {?} v0\n * @param {?} i0\n *
@param {?} v1\n * @param {?} i1\n * @param {?} v2\n * @param {?} i2\n * @param {?} v3\n * @param {?}
i3\n * @param {?} v4\n * @param {?} i4\n * @param {?} v5\n * @param {?} i5\n * @param {?} v6\n * @param
{?} suffix\n * @return {?} \n *\n\n/**\n * Create an interpolation binding with 8 arguments.\n *n * @param {?}
prefix\n * @param {?} v0\n * @param {?} i0\n * @param {?} v1\n * @param {?} i1\n * @param {?} v2\n *
@param {?} i2\n * @param {?} v3\n * @param {?} i3\n * @param {?} v4\n * @param {?} i4\n * @param {?}
v5\n * @param {?} i5\n * @param {?} v6\n * @param {?} i6\n * @param {?} v7\n * @param {?} suffix\n *
@return {?} \n *\n\n/**\n * @template T\n * @param {?} index\n * @param {?} = value\n * @return {?} \n
*\n\n/**\n * @template T\n * @param {?} predicate\n * @param {?} = descend\n * @param {?} = read\n * @return
{?} \n *\n\n/**\n * @return {?} \n *\n\nfunction assertPreviousIsParent() {\n assertEquals(isParent, true,
'isParent');\n}\n\n/**\n * @return {?} \n *\n\nfunction assertHasParent() {\n
assertNotEqual(previousOrParentNode.parent, null, 'isParent');\n}\n\n/**\n * @param {?} index\n * @param {?} =
arr\n * @return {?} \n *\n\nfunction assertDataInRange(index, arr) {\n if (arr == null)\n arr = data;\n assertLessThan(arr ? arr.length : 0, index, 'data.length');\n}\n\n\n/**\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n *\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
*\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n *\n\n/**\n * Options that control how the component should be bootstrapped.\n *
@record\n *\n\n/**\n * Bootstraps a component, then creates and returns a `ComponentRef` for that component.\n
*\n * @template T\n * @param {?} componentType Component to bootstrap\n * @param {?} opts\n * @return
{?} \n *\n\n\n// TODO: A hack to not pull in the NullInjector from @angular/core.\n\n/**\n * Bootstraps a
Component into an existing host element and returns an instance\n * of the component.\n *n * @template T\n *
@param {?} componentType Component to bootstrap\n * @param {?} = opts\n * @return {?} \n *\n\nfunction
renderComponent(componentType, opts) {\n if (opts === void 0) { opts = {}; }\n var /** @type {?} */
rendererFactory = opts.rendererFactory || domRendererFactory3;\n var /** @type {?} */ componentDef =
componentType.ngComponentDef;\n var /** @type {?} */ component;\n var /** @type {?} */ hostNode =

```

```

locateHostElement(rendererFactory, opts.host || componentDef.tag);\n var /** @type {?} */ oldView =
enterView(createViewState(-1, rendererFactory.createRenderer(hostNode, componentDef.rendererType), []), /**
@type {?} */ ((null)));\n try {\n // Create element node at index 0 in data array\n hostElement(hostNode,
componentDef);\n // Create directive instance with n() and store at index 1 in data array (el is 0)\n
component = directive(1, componentDef.n(), componentDef);\n }\n finally {\n leaveView(oldView);\n }\n
opts.features && opts.features.forEach(function (feature) { return feature(component, componentDef); });\n
detectChanges(component);\n return component;\n}\n\n/**\n * @template T\n * @param {?} component\n *
@return {?} */\n * ^\nfunction detectChanges(component) {\n ngDevMode && assertNotNull(component,
'component');\n var /** @type {?} */ hostNode = /** @type {?} */ ((/** @type {?} */
(component))[NG_HOST_SYMBOL]);\n if (ngDevMode && !hostNode) {\n createError('Not a directive
instance', component);\n }\n ngDevMode && assertNotNull(hostNode.data, 'hostNode.data');\n
renderComponentOrTemplate(hostNode, hostNode.view, component);\n isDirty = false;\n}\n\nvar isDirty =
false;\n\n/**\n * @template T\n * @param {?} component\n * @param {?=} scheduler\n * @return {?} */\n * ^\n\n/**\n *
@template T\n * @param {?} component\n * @return {?} */\n * ^\n\n/**\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n * ^\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
*\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n * ^\n\n/**\n * Create a component definition object.\n * ^\n * # Example\n * ^\n * class
MyDirective {\n * // Generated by Angular Template Compiler\n * // [Symbol] syntax will not be supported by
TypeScript until v2.7\n * static [COMPONENT_DEF_SYMBOL] = defineComponent({\n * ... \n * });\n * }\n
*\n * ^\n * @template T\n * @param {?} componentDefinition\n * @return {?} */\n * ^\nfunction
defineComponent(componentDefinition) {\n var /** @type {?} */ def = /** @type {?} */ ({\n type:
componentDefinition.type,\n diPublic: null,\n n: componentDefinition.factory,\n tag: (** @type {?} */
(componentDefinition)).tag // (** @type {?} */ ((null)),\n template: (** @type {?} */
(componentDefinition)).template // (** @type {?} */ ((null)),\n r: componentDefinition.refresh ||\n
function (d, e) { componentRefresh(d, e, componentDefinition.template); },\n h:
componentDefinition.hostBindings || noop$1,\n inputs: invertObject(componentDefinition.inputs),\n
outputs: invertObject(componentDefinition.outputs),\n methods: invertObject(componentDefinition.methods),\n
rendererType: resolveRendererType2(componentDefinition.rendererType) || null,\n });\n var /** @type {?}
*/ feature = componentDefinition.features;\n feature && feature.forEach(function (fn) { return fn(def); });\n
return def;\n}\n\n/**\n * @template T\n * @param {?} definition\n * @return {?} */\n * ^\n\n/**\n * @template T\n *
@param {?} definition\n * @return {?} */\n * ^\n\nvar EMPTY$1 = {};\n\n/**\n * @return {?} */\n * ^\nfunction noop$1()
{\n}\n\n/**\n * Swaps the keys and values of an object.\n * @param {?} obj\n * @return {?} */\n * ^\nfunction
invertObject(obj) {\n if (obj == null)\n return EMPTY$1;\n var /** @type {?} */ newObj = {};\n for (var
/** @type {?} */ minifiedKey in obj) {\n newObj[obj[minifiedKey]] = minifiedKey;\n }\n return
newObj;\n}\n\n/**\n * Create a directive definition object.\n * ^\n * # Example\n * ^\n * class MyDirective {\n * //
Generated by Angular Template Compiler\n * // [Symbol] syntax will not be supported by TypeScript until v2.7\n
* static [DIRECTIVE_DEF_SYMBOL] = defineDirective({\n * ... \n * });\n * }\n * ^\n * ^\n * ^\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * ^\n\n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n * ^\n * Use of this source code is governed by an MIT-style license that can be\n
* found in the LICENSE file at https://angular.io/license\n * ^\n\n/**\n * @fileoverview added by tsickle\n *
@suppress {checkTypes} checked by tsc\n * ^\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n
*\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n * ^\n\n// clang-format on\n\n/**\n * @fileoverview added by tsickle\n * @suppress
{checkTypes} checked by tsc\n * ^\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * ^\n *
Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n * ^\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by
tsc\n * ^\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * ^\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *

```



`[\@myAnimationTrigger]="myStatusExp">...</div>`

**## Disable Animations**

A special animation control binding called `[\@.disabled]` can be placed on an element which will then disable animations for any inner animation triggers situated within the element as well as any animations on the element itself.

When true, the `[\@.disabled]` binding will prevent all animations from rendering. The example below shows how to use this feature:

```

<div [\@.disabled]="isDisabled">
 <div [\@childAnimation]="exp"></div>
</div>

```

The `[\@childAnimation]` trigger will not animate because `[\@.disabled]` prevents it from happening (when true). Note that `[\@.disabled]` will only disable all animations (this means any animations running on the same element will also be disabled).

**Disabling Animations Application-wide**

When an area of the template is set to have animations disabled, **all** inner components will also have their animations disabled as well. This means that all animations for an angular application can be disabled by placing a host binding set on `[\@.disabled]` on the topmost Angular component.

```

import {Component, HostBinding} from '@angular/core';
@Component({
 selector: 'app-component',
 templateUrl: 'app.component.html'
})
class AppComponent {
 [\@HostBinding('[\@.disabled]')]
 public animationsDisabled = true;
}

```

**What about animations that us `query()` and `animateChild()`?**

Despite inner animations being disabled, a parent animation can `{[\@link query query]}` for inner elements located in disabled areas of the template and still animate them as it sees fit. This is also the case for when a sub animation is queried by a parent and then later animated using `{[\@link animateChild animateChild]}`.

**Experimental Animation support is experimental.**

**@param {?} name @param {?} definitions @return {?}**

```

function trigger$(name, definitions) {
 return {
 type: 7 /* Trigger */,
 name: name,
 definitions: definitions,
 options: {}
 };
}

```

**animate** is an animation-specific function that is designed to be used inside of Angular's animation DSL language. If this information is new, please navigate to the [Component#animations component animations metadata page](#) to gain a better understanding of how animations in Angular are used.

**animate** specifies an animation step that will apply the provided `styles` data for a given amount of time based on the provided `timing` expression value. Calls to `animate` are expected to be used within `{[\@link sequence an animation sequence]}`, `{[\@link group group]}`, or `{[\@link transition transition]}`.

**Usage**

The `animate` function accepts two input parameters: `timing` and `styles`:

- `timing` is a string based value that can be a combination of a duration with optional delay and easing values. The format for the expression breaks down to `duration delay easing` (therefore a value such as `1s 100ms ease-out` will be parse itself into `duration=1000, delay=100, easing=ease-out`). If a numeric value is provided then that will be used as the `duration` value in millisecond form.
- `styles` is the style input data which can either be a call to `{[\@link style style]}` or `{[\@link keyframes keyframes]}`. If left empty then the styles from the destination state will be collected and used (this is useful when describing an animation step that will complete an animation by `{[\@link transition#the-final-animate-call animating to the final state]}`).

**typescript** // various functions for specifying timing data

```

animate(500, style(...))
animate("1s", style(...))
animate("100ms 0.5s", style(...))
animate("5s ease", style(...))
animate("5s 10ms cubic-bezier(.17,.67,.88,.1)", style(...))

```

either `style()` or `keyframes()` can be used

```

animate(500, style({ background: "red" }))
animate(500, keyframes([
 style({ background: "blue" }),
 style({ background: "red" })
]))

```

**example**

```

core/animation/ts/dsl/animation_example.ts
region='Component'
[\@experimental Animation support is experimental]
@param {?} timings
@param {=} styles
@return {?}
function animate$(timings, styles) {
 if (styles === void 0) {
 styles = null;
 }
 return {
 type: 4 /* Animate */,
 styles: styles,
 timings: timings
 };
}

```

**group** is an animation-specific function that is designed to be used inside of Angular's animation DSL language. If this information is new, please navigate to the [Component#animations component animations metadata page](#) to gain a better understanding of how animations in Angular are used.

**group** specifies a list of animation steps that are all run in parallel. Grouped animations are useful when a series of styles must be animated/closed off at different starting/ending times.

The `group` function can either be

used within a `{@link sequence}` or a `{@link transition}` and it will only continue to the next instruction once all of the inner animation steps have completed.

**Usage**

The `steps` data that is passed into the `group` animation function can either consist of `{@link style}` or `{@link animate}` function calls. Each call to `style()` or `animate()` within a group will be executed instantly (use `{@link keyframes}` or a `{@link animate#usage}` with a delay value) to offset styles to be applied at a later time).

```

typescript
group([
 animate("1s", { background: "black" })
 animate("2s", { color: "white" })
])

```

**Example** `core/animation/ts/dsl/animation_example.ts` `region='Component'`

**Experimental** Animation support is experimental.

**@param** `{?}` `steps`

**@param** `{?}` `options`

**@return** `{?}`

```

function group$1(steps, options) {
 if (options === void 0) {
 options = null;
 }
 return { type: 3 /* Group */, steps: steps, options: options };
}

```

`sequence` is an animation-specific function that is designed to be used inside of Angular's animation DSL language. If this information is new, please navigate to the `Component#animations` component animations metadata page to gain a better understanding of how animations in Angular are used.

`sequence` Specifies a list of animation steps that are run one by one. (`sequence` is used by default when an array is passed as animation data into `{@link transition}`.)

The `sequence` function can either be used within a `{@link group}` or a `{@link transition}` and it will only continue to the next instruction once each of the inner animation steps have completed.

To perform animation styling in parallel with other animation steps then have a look at the `{@link group}` animation function.

**Usage**

The `steps` data that is passed into the `sequence` animation function can either consist of `{@link style}` or `{@link animate}` function calls. A call to `style()` will apply the provided styling data immediately while a call to `animate()` will apply its styling data over a given time depending on its timing data.

```

typescript
sequence([
 style({ opacity: 0 })
 animate("1s", { opacity: 1 })
])

```

**Example** `core/animation/ts/dsl/animation_example.ts` `region='Component'`

**Experimental** Animation support is experimental.

**@param** `{?}` `steps`

**@param** `{?}` `options`

**@return** `{?}`

```

function sequence$1(steps, options) {
 if (options === void 0) {
 options = null;
 }
 return { type: 2 /* Sequence */, steps: steps, options: options };
}

```

`style` is an animation-specific function that is designed to be used inside of Angular's animation DSL language. If this information is new, please navigate to the `Component#animations` component animations metadata page to gain a better understanding of how animations in Angular are used.

`style` declares a key/value object containing CSS properties/styles that can then be used for `{@link state}` animation states, within an `{@link sequence}` animation sequence, or as styling data for both `{@link animate}` and `{@link keyframes}`.

**Usage**

`style` takes in a key/value string map as data and expects one or more CSS property/value pairs to be defined.

```

typescript
// string values are used for css properties
style({ background: "red", color: "blue" })
// numerical (pixel) values are also supported
style({ width: 100, height: 0 })

```

**Auto-styles (using `*`)**

When an asterisk (`*`) character is used as a value then it will be detected from the element being animated and applied as animation data when the animation starts.

This feature proves useful for a state depending on layout and/or environment factors; in such cases the styles are calculated just before the animation starts.

```

typescript
// the steps below will animate from 0 to the // actual height of the element
style({ height: 0 })
animate("1s", style({ height: "*" }))

```

**Example** `core/animation/ts/dsl/animation_example.ts` `region='Component'`

**Experimental** Animation support is experimental.

**@param** `{?}` `tokens`

**@return** `{?}`

```

function style$1(tokens) {
 return { type: 6 /* Style */, styles: tokens, offset: null };
}

```

`state` is an animation-specific function that is designed to be used inside of Angular's animation DSL language. If this information is new, please navigate to the `Component#animations` component animations metadata page to gain a better understanding of how animations in Angular are used.

`state` declares an animation state within the given trigger. When a state is active within a component then its associated styles will persist on the element that the trigger is attached to (even when the animation ends).

To animate between states, have a look at the `{@link transition}` DSL function. To register states to an animation trigger please have a look at the `{@link trigger}`







```

*function transition$(stateChangeExpr, steps, options) {
 if (options === void 0) { options = null; }
 return {
 type: 1 /* Transition */,
 expr: stateChangeExpr,
 animation: steps,
 options: options
 };
}

```

`animation` is an animation-specific function that is designed to be used inside of Angular's animation DSL language. `var myAnimation = animation(...)` is designed to produce a reusable animation that can be later invoked in another animation or sequence. Reusable animations are designed to make use of animation parameters and the produced animation can be used via the `useAnimation` method.

```

var fadeAnimation = animation([
 style({ opacity: '0' }),
 animate('{{ time }}', style({ opacity: '1' })),
 { params: { time: '1000ms', start: 0, end: 1 }}
]);

```

If parameters are attached to an animation then they act as **default parameter values**. When an animation is invoked via `useAnimation` then parameter values are allowed to be passed in directly. If any of the passed in parameter values are missing then the default values will be used.

```

useAnimation(fadeAnimation, {
 params: {
 time: '2s',
 start: 1,
 end: 0
 }
})

```

If one or more parameter values are missing before animated then an error will be thrown.

**@experimental Animation support is experimental.**

```

@param {?} steps
@param {?=} options
@return {?}

```

`animateChild` is an animation-specific function that is designed to be used inside of Angular's animation DSL language. It works by allowing a queried element to execute its own animation within the animation sequence. Each time an animation is triggered in angular, the parent animation will always get priority and any child animations will be blocked. In order for a child animation to run, the parent animation must query each of the elements containing child animations and then allow the animations to run using `animateChild`.

The example HTML code below shows both parent and child elements that have animation triggers that will execute at the same time.

```

<!-- parent-child.component.html -->
<button (click)="exp = ! exp">Toggle</button>
<div [!@parentAnimation]="exp">
 <header>Hello</header>
 <div [!@childAnimation]="exp">
 one
 </div>
 <div [!@childAnimation]="exp">
 two
 </div>
 <div [!@childAnimation]="exp">
 three
 </div>
</div>

```

Now when the `exp` value changes to true, only the `parentAnimation` animation will animate because it has priority. However, using `query` and `animateChild` each of the inner animations can also fire:

```

ts
// parent-child.component.ts
import { trigger, transition, animate, style, query, animateChild } from '@angular/animations';
@Component({
 selector: 'parent-child-component',
 animations: [
 trigger('parentAnimation', [
 transition('false => true', [
 query('header', [
 style({ opacity: 0 }),
 animate(500, style({ opacity: 1 })),
]),
 query('@childAnimation', [
 animateChild(),
]),
 trigger('childAnimation', [
 transition('false => true', [
 style({ opacity: 0 }),
 animate(500, style({ opacity: 1 })),
]),
]),
]),
],
),
 class: ParentChildCmp {
 exp: boolean = false;
 }
})

```

In the animation code above, when the `parentAnimation` transition kicks off it first queries to find the header element and fades it in. It then finds each of the sub elements that contain the `@childAnimation` trigger and then allows for their animations to fire.

This example can be further extended by using stagger:

```

ts
query('@childAnimation',
stagger(100, [
 animateChild()
]))

```

Now each of the sub animations start off with respect to the `100ms` staggering step.

**## The first frame of child animations**

When sub animations are executed using `animateChild` the animation engine will always apply the first frame of every sub animation immediately at the start of the animation sequence. This way the parent animation does not need to set any initial styling data on the sub elements before the sub animations kick off.

In the example above the first frame of the `childAnimation`'s `false => true` transition consists of a style of `opacity: 0`. This is applied immediately when the `parentAnimation` animation transition sequence starts. Only then when the `@childAnimation` is queried and called with `animateChild` will it then animate to its destination of `opacity: 1`.

Note that this feature designed to be used alongside `@link query query()` and it will only work with animations that are assigned using the Angular animation DSL (this means that CSS keyframes and transitions are not handled by this API).

```

@param {?=} options
@return {?}

```

`useAnimation` is an animation-specific function that is designed to be used inside of Angular's animation DSL language. It is used to kick off a reusable animation that is created using `@link animation`









```

map.set(Identifiers.SecurityContext, SecurityContext);\n map.set(Identifiers.LOCALE_ID, LOCALE_ID);\n
map.set(Identifiers.TRANSLATIONS_FORMAT, TRANSLATIONS_FORMAT);\n
map.set(Identifiers.inlineInterpolate, inlineInterpolate);\n map.set(Identifiers.interpolate, interpolate);\n
map.set(Identifiers.EMPTY_ARRAY, EMPTY_ARRAY);\n map.set(Identifiers.EMPTY_MAP,
EMPTY_MAP);\n map.set(Identifiers.Renderer, Renderer);\n map.set(Identifiers.viewDef, vid);\n
map.set(Identifiers.elementDef, eld);\n map.set(Identifiers.anchorDef, and);\n map.set(Identifiers.textDef, ted);\n
map.set(Identifiers.directiveDef, did);\n map.set(Identifiers.providerDef, prd);\n map.set(Identifiers.queryDef,
qud);\n map.set(Identifiers.pureArrayDef, pad);\n map.set(Identifiers.pureObjectDef, pod);\n
map.set(Identifiers.purePipeDef, ppd);\n map.set(Identifiers.pipeDef, pid);\n map.set(Identifiers.nodeValue,
nov);\n map.set(Identifiers.ngContentDef, ncd);\n map.set(Identifiers.unwrapValue, unv);\n
map.set(Identifiers.createRendererType2, crt);\n map.set(Identifiers.createComponentFactory, ccf);\n return
map;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n *
@license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-
style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\nvar
ERROR_COLLECTOR_TOKEN = new InjectionToken('ErrorCollector');\n\n * A default provider for {@link
PACKAGE_ROOT_URL} that maps to '\/.\n\n */\n\nvar DEFAULT_PACKAGE_URL_PROVIDER = {\n provide:
PACKAGE_ROOT_URL,\n useValue: '\/\n};\n\nvar _NO_RESOURCE_LOADER = {\n get: /**\n * @param
{?} url\n * @return {?}\n */\n function (url) {\n throw new Error(`No ResourceLoader implementation
has been provided. Can't read the url \\\`" + url + \\\`"");\n }\n};\n\nvar baseHtmlParser = new
InjectionToken('HtmlParser');\n\nvar CompilerImpl = /** @class */ (function () {\n function CompilerImpl(injector,
_metadataResolver, templateParser, styleCompiler, viewCompiler, ngModuleCompiler, summaryResolver,
compileReflector, compilerConfig, console) {\n this._metadataResolver = _metadataResolver;\n
this._delegate = new JitCompiler(_metadataResolver, templateParser, styleCompiler, viewCompiler,
ngModuleCompiler, summaryResolver, compileReflector, compilerConfig, console,\n
this.getExtraNgModuleProviders.bind(this));\n this.injector = injector;\n }\n /**\n * @return {?}\n */\n
CompilerImpl.prototype.getExtraNgModuleProviders = /**\n * @return {?}\n */\n function () {\n
return [this._metadataResolver.getProviderMetadata(new ProviderMeta(Compiler, { useValue: this }));\n];\n
};\n\n /**\n * @template T\n * @param {?} moduleType\n * @return {?}\n */\n
CompilerImpl.prototype.compileModuleSync = /**\n * @template T\n * @param {?} moduleType\n *
@return {?}\n */\n function (moduleType) {\n return /** @type {?} */\n
(this._delegate.compileModuleSync(moduleType));\n };;\n\n /**\n * @template T\n * @param {?}
moduleType\n * @return {?}\n */\n CompilerImpl.prototype.compileModuleAsync = /**\n * @template
T\n * @param {?} moduleType\n * @return {?}\n */\n function (moduleType) {\n return /** @type
{?} */\n (this._delegate.compileModuleAsync(moduleType));\n };;\n\n /**\n * @template T\n * @param {?}
moduleType\n * @return {?}\n */\n CompilerImpl.prototype.compileModuleAndAllComponentsSync =
/**\n * @template T\n * @param {?} moduleType\n * @return {?}\n */\n function (moduleType) {\n
var /** @type {?} */ result = this._delegate.compileModuleAndAllComponentsSync(moduleType);\n return
{\n ngModuleFactory: /** @type {?} */ (result.ngModuleFactory),\n componentFactories: /** @type
{?} */ (result.componentFactories),\n };;\n };;\n\n /**\n * @template T\n * @param {?} moduleType\n
* @return {?}\n */\n CompilerImpl.prototype.compileModuleAndAllComponentsAsync = /**\n * @template
T\n * @param {?} moduleType\n * @return {?}\n */\n function (moduleType) {\n return
this._delegate.compileModuleAndAllComponentsAsync(moduleType)\n .then(function (result) {\n
return ({\n ngModuleFactory: /** @type {?} */ (result.ngModuleFactory),\n componentFactories:
/** @type {?} */ (result.componentFactories),\n });;\n });;\n };;\n\n /**\n * @param {?} summaries\n
* @return {?}\n */\n CompilerImpl.prototype.loadAotSummaries = /**\n * @param {?} summaries\n *
@return {?}\n */\n function (summaries) {\n this._delegate.loadAotSummaries(summaries); }\n\n /**\n
* @param {?} ref\n * @return {?}\n */\n CompilerImpl.prototype.hasAotSummary = /**\n * @param {?}
ref\n * @return {?}\n */\n function (ref) {\n return this._delegate.hasAotSummary(ref); }\n\n /**\n
*

```

```

@template T\n * @param {?} component\n * @return {?}\n */\n
CompilerImpl.prototype.getComponentFactory = /**\n * @template T\n * @param {?} component\n * @return {?}\n */\n function (component) {\n return /** @type {?} */\n (this._delegate.getComponentFactory(component));\n };\n /**\n * @return {?}\n */\n
CompilerImpl.prototype.clearCache = /**\n * @return {?}\n */\n function () { this._delegate.clearCache();\n };\n /**\n * @param {?} type\n * @return {?}\n */\n CompilerImpl.prototype.clearCacheFor = /**\n * @param {?} type\n * @return {?}\n */\n function (type) { this._delegate.clearCacheFor(type); }\n return\n CompilerImpl;\n})();\n/**\n * A set of providers that provide `JitCompiler` and its dependencies to use for\n * template compilation.\n */\n nvar COMPILER_PROVIDERS = /** @type {?} */ ([\n { provide: CompileReflector,\n useValue: new JitReflector() },\n { provide: ResourceLoader, useValue: _NO_RESOURCE_LOADER },\n { provide: JitSummaryResolver, deps: [] },\n { provide: SummaryResolver, useExisting: JitSummaryResolver },\n { provide: Console, deps: [] },\n { provide: Lexer, deps: [] },\n { provide: Parser, deps: [Lexer] },\n {\n provide: baseHtmlParser,\n useClass: HtmlParser,\n deps: [],\n },\n {\n provide: I18NHtmlParser,\n useFactory: function (parser, translations, format, config, console) {\n translations = translations || "";\n var /** @type {?} */ missingTranslation = translations ? /** @type {?} */ ((config.missingTranslation)) :\n MissingTranslationStrategy.Ignore;\n return new I18NHtmlParser(parser, translations, format,\n missingTranslation, console);\n },\n deps: [\n baseHtmlParser,\n [new Optional(), new\n Inject(TRANSLATIONS)],\n [new Optional(), new Inject(TRANSLATIONS_FORMAT)],\n [CompilerConfig],\n [Console],\n]\n },\n {\n provide: HtmlParser,\n useExisting:\n I18NHtmlParser,\n },\n {\n provide: TemplateParser, deps: [CompilerConfig, CompileReflector,\n Parser, ElementSchemaRegistry,\n I18NHtmlParser, Console]\n },\n { provide: DirectiveNormalizer,\n deps: [ResourceLoader, UrlResolver, HtmlParser, CompilerConfig] },\n { provide: CompileMetadataResolver,\n deps: [CompilerConfig, HtmlParser, NgModuleResolver,\n DirectiveResolver, PipeResolver,\n SummaryResolver,\n ElementSchemaRegistry,\n DirectiveNormalizer, Console,\n [Optional,\n StaticSymbolCache],\n CompileReflector,\n [Optional, ERROR_COLLECTOR_TOKEN]] },\n { provide:\n DEFAULT_PACKAGE_URL_PROVIDER,\n { provide: StyleCompiler, deps: [UrlResolver] },\n { provide:\n ViewCompiler, deps: [CompileReflector] },\n { provide: NgModuleCompiler, deps: [CompileReflector] },\n { provide: CompilerConfig, useValue: new CompilerConfig() },\n { provide: Compiler, useClass: CompilerImpl,\n deps: [Injector, CompileMetadataResolver,\n TemplateParser, StyleCompiler,\n ViewCompiler,\n NgModuleCompiler,\n SummaryResolver, CompileReflector, CompilerConfig,\n Console] },\n { provide: DomElementSchemaRegistry, deps: [] },\n { provide: ElementSchemaRegistry, useExisting:\n DomElementSchemaRegistry },\n { provide: UrlResolver, deps: [PACKAGE_ROOT_URL] },\n { provide:\n DirectiveResolver, deps: [CompileReflector] },\n { provide: PipeResolver, deps: [CompileReflector] },\n { provide: NgModuleResolver, deps: [CompileReflector] },\n]);\n /**\n * @experimental\n */\n nvar\n JitCompilerFactory = /** @class */ (function () {\n /* @internal */\n function\n JitCompilerFactory(defaultOptions) {\n var /** @type {?} */ compilerOptions = {\n useJit: true,\n defaultEncapsulation: ViewEncapsulation.Emulated,\n missingTranslation:\n MissingTranslationStrategy.Warning,\n enableLegacyTemplate: false,\n };\n this._defaultOptions =\n [compilerOptions].concat(defaultOptions);\n };\n /**\n * @param {?=} options\n * @return {?}\n */\n JitCompilerFactory.prototype.createCompiler = /**\n * @param {?=} options\n * @return {?}\n */\n function (options) {\n if (options === void 0) { options = []; }\n var /** @type {?} */ opts =\n _mergeOptions(this._defaultOptions.concat(options));\n var /** @type {?} */ injector = Injector.create([\n COMPILER_PROVIDERS, {\n provide: CompilerConfig,\n useFactory: function () {\n return new CompilerConfig({\n // let explicit values from the compiler options overwrite options\n // from the app providers\n useJit: opts.useJit,\n jitDevMode:\n isDevMode(),\n // let explicit values from the compiler options overwrite options\n // from the app providers\n defaultEncapsulation: opts.defaultEncapsulation,\n missingTranslation: opts.missingTranslation,\n enableLegacyTemplate:\n

```

```

opts.enableLegacyTemplate,\n preserveWhitespaces: opts.preserveWhitespaces,\n },\n deps: []\n },\n /** @type {?} */ ((opts.providers))\n]);\n return\n injector.get(Compiler);\n });\n return JitCompilerFactory;\n})();\n\n/**\n * @param {?} optionsArr\n * @return\n * {?}\n */\nfunction _mergeOptions(optionsArr) {\n return {\n useJit: _lastDefined(optionsArr.map(function\n (options) { return options.useJit; })),\n defaultEncapsulation: _lastDefined(optionsArr.map(function (options) {\n return options.defaultEncapsulation; })),\n providers: _mergeArrays(optionsArr.map(function (options) { return\n ((options.providers)); })),\n missingTranslation: _lastDefined(optionsArr.map(function (options) { return\n options.missingTranslation; })),\n enableLegacyTemplate: _lastDefined(optionsArr.map(function (options) {\n return options.enableLegacyTemplate; })),\n preserveWhitespaces: _lastDefined(optionsArr.map(function\n (options) { return options.preserveWhitespaces; })),\n };\n}\n\n/**\n * @template T\n * @param {?} args\n * @return {?}\n */\nfunction _lastDefined(args) {\n for (var /** @type {?} */ i = args.length - 1; i >= 0; i--) {\n if (args[i] !== undefined) {\n return args[i];\n }\n }\n return undefined;\n}\n\n/**\n * @param {?}\n * @return {?}\n */\nfunction _mergeArrays(parts) {\n var /** @type {?} */ result = [];\n parts.forEach(function (part) { return part && result.push.apply(result, part); });\n return result;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n * @license\n * Copyright\n * Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n * A platform that included corePlatform and the\n * compiler.\n */\n\n/**\n * @experimental\n */\n\nvar platformCoreDynamic = createPlatformFactory(platformCore,\n'coreDynamic', [\n { provide: COMPILER_OPTIONS, useValue: {}, multi: true },\n { provide:\n CompilerFactory, useClass: JitCompilerFactory, deps: [COMPILER_OPTIONS] },\n]);\n\n/**\n * @fileoverview\n * added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\nvar ResourceLoaderImpl = /** @class */\n(function (_super) {\n __extends(ResourceLoaderImpl, _super);\n function ResourceLoaderImpl() {\n return\n _super !== null && _super.apply(this, arguments) || this;\n }\n /**\n * @param {?} url\n * @return {?}\n */\n ResourceLoaderImpl.prototype.get = /**\n * @param {?} url\n * @return {?}\n */\n function (url)\n {\n var /** @type {?} */ resolve;\n var /** @type {?} */ reject;\n var /** @type {?} */ promise = new\n Promise(function (res, rej) {\n resolve = res;\n reject = rej;\n });\n var /** @type {?} */ xhr =\n new XMLHttpRequest();\n xhr.open('GET', url, true);\n xhr.responseType = 'text';\n xhr.onload =\n function () {\n // responseText is the old-school way of retrieving response (supported by IE8 & 9)\n // response/responseType properties were introduced in ResourceLoader Level2 spec (supported\n // by IE10)\n var /** @type {?} */ response = xhr.response || xhr.responseText;\n // normalize IE9 bug\n (http://bugs.jquery.com/ticket/1450)\n var /** @type {?} */ status = xhr.status === 1223 ? 204 : xhr.status;\n // fix status code when it is 0 (0 status is undocumented).\n // Occurs when accessing file resources or\n on Android 4.1 stock browser\n // while retrieving files from application cache.\n if (status === 0) {\n status = response ? 200 : 0;\n }\n if (200 <= status && status <= 300) {\n resolve(response);\n }\n else {\n reject("Failed to load " + url);\n }\n };\n xhr.onerror = function () { reject("Failed to load " + url); }; \n xhr.send();\n return promise;\n };\n ResourceLoaderImpl.decorators = [\n { type: Injectable },\n];\n /** @nocollapse */\n ResourceLoaderImpl.ctorParameters = function () { return []; }; \n return\n ResourceLoaderImpl;\n})(ResourceLoader);\n\n/**\n * @fileoverview added by tsickle\n * @suppress\n * {checkTypes} checked by tsc\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of\n * this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\n * https://angular.io/license\n */\n\nvar INTERNAL_BROWSER_DYNAMIC_PLATFORM_PROVIDERS = [\n INTERNAL_BROWSER_PLATFORM_PROVIDERS,\n {\n provide: COMPILER_OPTIONS,\n useValue: { providers: [{ provide: ResourceLoader, useClass: ResourceLoaderImpl, deps: [] }] },\n multi: true\n },\n {\n provide: PLATFORM_ID, useValue: PLATFORM_BROWSER_ID },\n];\n\n/**\n * @fileoverview added\n * by tsickle\n * @suppress {checkTypes} checked by tsc\n * @license\n * Copyright Google Inc. All Rights\n * Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\n * LICENSE file at https://angular.io/license\n * An implementation of ResourceLoader that uses a template

```





```

operations in an environment-agnostic way.\n *\n * \\@security Tread carefully! Interacting with the DOM directly
is dangerous and\n * can introduce XSS risks.\n * @abstract\n *\nvar DomAdapter = /** @class */ (function () {\n
function DomAdapter() {\n this.resourceLoaderType = /** @type {?} */ ((null));\n }\n
Object.defineProperty(DomAdapter.prototype, 'attrToPropsMap', {\n /**\n * Maps attribute names to
their corresponding property names for cases\n * where attribute name doesn't match property name.\n
*\n get: /**\n * Maps attribute names to their corresponding property names for cases\n * where
attribute name doesn't match property name.\n * @return {?} \n *\n function () { return
this._attrToPropsMap; },\n set: /**\n * @param {?} value\n * @return {?} \n *\n function
(value) { this._attrToPropsMap = value; },\n enumerable: true,\n configurable: true\n });\n return
DomAdapter;\n})();\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n
*\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by
an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n\n/**\n * Provides
DOM operations in any browser environment.\n *\n * \\@security Tread carefully! Interacting with the DOM
directly is dangerous and\n * can introduce XSS risks.\n * @abstract\n *\nvar GenericBrowserDomAdapter = /**
@class */ (function (_super) {\n __extends(GenericBrowserDomAdapter, _super);\n function
GenericBrowserDomAdapter() {\n var _this = _super.call(this) || this;\n _this._animationPrefix = null;\n
 _this._transitionEnd = null;\n try {\n var /** @type {?} */ element_1 = _this.createElement('div',
document);\n if (_this.getStyle(element_1, 'animationName') != null) {\n _this._animationPrefix =
";\n }\n else {\n var /** @type {?} */ domPrefixes = ['Webkit', 'Moz', 'O', 'ms'];\n
 for (var /** @type {?} */ i = 0; i < domPrefixes.length; i++) {\n if (_this.getStyle(element_1,
domPrefixes[i] + 'AnimationName') != null) {\n _this._animationPrefix = '-' +
domPrefixes[i].toLowerCase() + '-';\n break;\n }\n }\n var /**
@type {?} */ transEndEventNames_1 = {\n WebkitTransition: 'webkitTransitionEnd',\n
 MozTransition: 'transitionend',\n OTransition: 'oTransitionEnd otransitionend',\n
 transition:
 'transitionend'\n }; \n Object.keys(transEndEventNames_1).forEach(function (key) {\n if
(_this.getStyle(element_1, key) != null) {\n _this._transitionEnd = transEndEventNames_1[key];\n
 }\n });\n }\n catch (/** @type {?} */ e) {\n _this._animationPrefix = null;\n
 _this._transitionEnd = null;\n }\n return _this;\n }\n /**\n * @param {?} el\n * @return {?} \n
 *\n function (el) { return (/** @type {?} */ (el)).getDistributedNodes(); }; \n /**\n * @param {?} el\n *
@return {?} \n *\n function (el) { return (/** @type {?} */ (el)).getDistributedNodes(); }; \n /**\n * @param {?} href\n * @return {?} \n
 *\n function (el, baseUrl, href) {\n el.href = href ==
null ? baseUrl : baseUrl + '/../' + href;\n }; \n /**\n * @return {?} \n *\n function () {\n return true; }; \n /**\n * @return {?} \n *\n function () {\n return typeof (/** @type {?} */ (document.body)).createShadowRoot === 'function';\n }; \n /**\n *
@return {?} \n *\n function () {\n return this._animationPrefix ? this._animationPrefix + ";";\n }; \n /**\n * @return {?} \n *\n function () {\n return this._transitionEnd ? this._transitionEnd + ";";\n }; \n /**\n * @return {?} \n *\n function () {\n return this._animationPrefix != null && this._transitionEnd != null;\n }; \n return
GenericBrowserDomAdapter;\n})(DomAdapter);\n\n/**\n * @fileoverview added by tsickle\n * @suppress
{checkTypes} checked by tsc\n *\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of
this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n *\nvar _attrToPropsMap = {\n 'class': 'className',\n 'innerHTML': 'innerHTML',\n

```

```

'readonly': 'readOnly',\n 'tabindex': 'tabIndex',\n};\nvar DOM_KEY_LOCATION_NUMPAD = 3;\n// Map to
convert some key or keyIdentifier values to what will be returned by getEventKey\nvar _keyMap = {\n // The
following values are here for cross-browser compatibility and to match the W3C standard\n // cf
http://www.w3.org/TR/DOM-Level-3-Events-key/\n '\b': 'Backspace',\n '\t': 'Tab',\n '\x7F': 'Delete',\n
'\x1B': 'Escape',\n 'Del': 'Delete',\n 'Esc': 'Escape',\n 'Left': 'ArrowLeft',\n 'Right': 'ArrowRight',\n
'Up': 'ArrowUp',\n 'Down': 'ArrowDown',\n 'Menu': 'ContextMenu',\n 'Scroll': 'ScrollLock',\n 'Win': 'OS'\n};\n//
There is a bug in Chrome for numeric keypad keys:\n//
https://code.google.com/p/chromium/issues/detail?id=155654\n// 1, 2, 3 ... are reported as A, B, C ...\nvar
_chromeNumKeyPadMap = {\n 'A': '1',\n 'B': '2',\n 'C': '3',\n 'D': '4',\n 'E': '5',\n 'F': '6',\n 'G': '7',\n
'H': '8',\n 'I': '9',\n 'J': '*',\n 'K': '+',\n 'M': '-',\n 'N': '.',\n 'O': '/',\n '\x60': '0',\n '\x90': 'NumLock'\n};\nvar
nodeContains;\nif (global['Node']) {\n nodeContains = global['Node'].prototype.contains || function (node) {\n
return !!((this.compareDocumentPosition(node) & 16);\n);\n}\n\n/**\n * A `DomAdapter` powered by full browser
DOM APIs.\n * \n * @security Tread carefully! Interacting with the DOM directly is dangerous and\n * can
introduce XSS risks.\n * \nvar BrowserDomAdapter = /** @class */ (function (_super) {\n
 __extends(BrowserDomAdapter, _super);\n function BrowserDomAdapter() {\n return _super !== null &&
_super.apply(this, arguments) || this;\n }\n /**\n * @param {?} templateHtml\n * @return {?}\n *\n BrowserDomAdapter.prototype.parse = /**\n * @param {?} templateHtml\n * @return {?}\n *\n function
(templateHtml) {\n throw new Error('parse not implemented');\n };\n /**\n * @return {?}\n *\n BrowserDomAdapter.makeCurrent = /**\n * @return {?}\n *\n function () {\n setRootDomAdapter(new
BrowserDomAdapter());\n };\n /**\n * @param {?} element\n * @param {?} name\n * @return {?}\n *\n BrowserDomAdapter.prototype.hasProperty = /**\n * @param {?} element\n * @param {?} name\n *
@return {?}\n *\n function (element, name) {\n return name in element;\n };\n /**\n * @param {?} el\n *
@param {?} name\n * @param {?} value\n * @return {?}\n *\n BrowserDomAdapter.prototype.setProperty = /**\n * @param {?} el\n * @param {?} name\n * @param {?}
value\n * @return {?}\n *\n function (el, name, value) {\n (** @type {?} */ (el))[name] = value;\n };\n /**\n * @param {?} el\n * @param {?} name\n * @return {?}\n *\n BrowserDomAdapter.prototype.getProperty = /**\n * @param {?} el\n * @param {?} name\n * @return
{?}\n *\n function (el, name) {\n return (** @type {?} */ (el))[name];\n };\n /**\n * @param {?} el\n *
@param {?} methodName\n * @param {?} args\n * @return {?}\n *\n BrowserDomAdapter.prototype.invoke = /**\n * @param {?} el\n * @param {?} methodName\n * @param
{?} args\n * @return {?}\n *\n function (el, methodName, args) {\n (_a = (** @type {?} */
(el))[methodName]).apply(_a, args);\n var _a;\n };\n // TODO(tbosch): move this into a separate
environment class once we have it\n /**\n * @param {?} error\n * @return {?}\n *\n BrowserDomAdapter.prototype.logError = /**\n * @param {?} error\n * @return {?}\n *\n function
(error) {\n if (window.console) {\n if (console.error) {\n console.error(error);\n }\n }
else {\n console.log(error);\n }\n };\n /**\n * @param {?} error\n * @return {?}\n *\n BrowserDomAdapter.prototype.log = /**\n * @param {?} error\n * @return {?}\n *\n function
(error) {\n if (window.console) {\n window.console.log && window.console.log(error);\n }\n };\n /**\n * @param {?} error\n * @return {?}\n *\n BrowserDomAdapter.prototype.logGroup = /**\n *
@param {?} error\n * @return {?}\n *\n function (error) {\n if (window.console) {\n window.console.group && window.console.group(error);\n }\n };\n /**\n * @return {?}\n *\n BrowserDomAdapter.prototype.logGroupEnd = /**\n * @return {?}\n *\n function () {\n if
(window.console) {\n window.console.groupEnd && window.console.groupEnd();\n }\n };\n Object.defineProperty(BrowserDomAdapter.prototype, \"attrToPropsMap\", {\n get: /**\n * @return {?}\n *
*\n function () {\n return _attrToPropsMap;\n },\n enumerable: true,\n configurable: true\n });\n /**\n * @param {?} nodeA\n * @param {?} nodeB\n * @return {?}\n *\n BrowserDomAdapter.prototype.contains = /**\n * @param {?} nodeA\n * @param {?} nodeB\n * @return
{?}\n *\n function (nodeA, nodeB) {\n return nodeContains.call(nodeA, nodeB);\n };\n /**\n * @param {?}

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el\n * @param {?} selector\n * @return {}\n *^/\n BrowserDomAdapter.prototype.querySelector = /**\n
* @param {?} el\n * @param {?} selector\n * @return {}\n *^/\n function (el, selector) { return
el.querySelector(selector); };/\n * @param {?} el\n * @param {?} selector\n * @return {}\n *^/\n
BrowserDomAdapter.prototype.querySelectorAll = /**\n * @param {?} el\n * @param {?} selector\n *
@return {}\n *^/\n function (el, selector) { return el.querySelectorAll(selector); };/\n * @param {?}
el\n * @param {?} evt\n * @param {?} listener\n * @return {}\n *^/\n
BrowserDomAdapter.prototype.on = /**\n * @param {?} el\n * @param {?} evt\n * @param {?} listener\n
* @return {}\n *^/\n function (el, evt, listener) { el.addEventListener(evt, listener, false); };/\n *
@param {?} el\n * @param {?} evt\n * @param {?} listener\n * @return {}\n *^/\n
BrowserDomAdapter.prototype.onAndCancel = /**\n * @param {?} el\n * @param {?} evt\n * @param {?}
listener\n * @return {}\n *^/\n function (el, evt, listener) {\n el.addEventListener(evt, listener, false);\n
// Needed to follow Dart's subscription semantic, until fix of\n //
https://code.google.com/p/dart/issues/detail?id=17406\n return function () { el.removeEventListener(evt,
listener, false); };;\n };/\n * @param {?} el\n * @param {?} evt\n * @return {}\n *^/\n
BrowserDomAdapter.prototype.dispatchEvent = /**\n * @param {?} el\n * @param {?} evt\n * @return
{}\n *^/\n function (el, evt) { el.dispatchEvent(evt); };/\n * @param {?} eventType\n * @return
{}\n *^/\n BrowserDomAdapter.prototype.createMouseEvent = /**\n * @param {?} eventType\n *
@return {}\n *^/\n function (eventType) {\n var /** @type {?} */ evt =
this.getDefaultDocument().createEvent('MouseEvent');\n evt.initEvent(eventType, true, true);\n return
evt;\n };;\n /**\n * @param {?} eventType\n * @return {}\n *^/\n
BrowserDomAdapter.prototype.createEvent = /**\n * @param {?} eventType\n * @return {}\n *^/\n
function (eventType) {\n var /** @type {?} */ evt = this.getDefaultDocument().createEvent('Event');\n
evt.initEvent(eventType, true, true);\n return evt;\n };;\n /**\n * @param {?} evt\n * @return {}
}\n *^/\n BrowserDomAdapter.prototype.preventDefault = /**\n * @param {?} evt\n * @return {}
}\n *^/\n function (evt) {\n evt.preventDefault();\n evt.returnValue = false;\n };;\n /**\n * @param {?} evt\n
* @return {}
}\n *^/\n BrowserDomAdapter.prototype.isPrevented = /**\n * @param {?} evt\n * @return
{}
}\n *^/\n function (evt) {\n return evt.defaultPrevented || evt.returnValue != null && !evt.returnValue;\n
};;\n /**\n * @param {?} el\n * @return {}
}\n *^/\n BrowserDomAdapter.prototype.getInnerHTML =
/**\n * @param {?} el\n * @return {}
}\n *^/\n function (el) { return el.innerHTML; };;\n /**\n *
@param {?} el\n * @return {}
}\n *^/\n BrowserDomAdapter.prototype.getTemplateContent = /**\n *
@param {?} el\n * @return {}
}\n *^/\n function (el) {\n return 'content' in el &&
this.isTemplateElement(el) ? (** @type {?} */ (el)).content : null;\n };;\n /**\n * @param {?} el\n *
@return {}
}\n *^/\n BrowserDomAdapter.prototype.getOuterHTML = /**\n * @param {?} el\n * @return
{}
}\n *^/\n function (el) { return el.outerHTML; };;\n /**\n * @param {?} node\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.nodeName = /**\n * @param {?} node\n * @return {}
}\n *^/\n function
(node) { return node.nodeName; };;\n /**\n * @param {?} node\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.nodeValue = /**\n * @param {?} node\n * @return {}
}\n *^/\n function
(node) { return node.nodeValue; };;\n /**\n * @param {?} node\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.type = /**\n * @param {?} node\n * @return {}
}\n *^/\n function (node) {
return node.type; };;\n /**\n * @param {?} node\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.content = /**\n * @param {?} node\n * @return {}
}\n *^/\n function (node)
{\n if (this.hasProperty(node, 'content')) {\n return (** @type {?} */ (node)).content;\n }\n else
{\n return node;\n }\n };;\n /**\n * @param {?} el\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.firstChild = /**\n * @param {?} el\n * @return {}
}\n *^/\n function (el) {
return el.firstChild; };;\n /**\n * @param {?} el\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.nextSibling = /**\n * @param {?} el\n * @return {}
}\n *^/\n function (el) {
return el.nextSibling; };;\n /**\n * @param {?} el\n * @return {}
}\n *^/\n
BrowserDomAdapter.prototype.parentElement = /**\n * @param {?} el\n * @return {}
}\n *^/\n function

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(el) { return el.parentNode; };\n /**\n * @param {?} el\n * @return {?}\n */\n
BrowserDomAdapter.prototype.childNodes = /**\n * @param {?} el\n * @return {?}\n */\n function (el) {\n
return el.childNodes; }; \n /**\n * @param {?} el\n * @return {?}\n */\n
BrowserDomAdapter.prototype.childNodesAsList = /**\n * @param {?} el\n * @return {?}\n */\n
function (el) {\n var /** @type {?} */ childNodes = el.childNodes;\n var /** @type {?} */ res = new\n
Array(childNodes.length);\n for (var /** @type {?} */ i = 0; i < childNodes.length; i++) {\n res[i] =\n
childNodes[i];\n }\n return res;\n }; \n /**\n * @param {?} el\n * @return {?}\n */\n
BrowserDomAdapter.prototype.clearNodes = /**\n * @param {?} el\n * @return {?}\n */\n function (el)\n
{\n while (el.firstChild) {\n el.removeChild(el.firstChild);\n }\n }; \n /**\n * @param {?} el\n
* @param {?} node\n * @return {?}\n */\n BrowserDomAdapter.prototype.appendChild = /**\n *\n
@param {?} el\n * @param {?} node\n * @return {?}\n */\n function (el, node) { el.appendChild(node);\n
}; \n /**\n * @param {?} el\n * @param {?} node\n * @return {?}\n */\n
BrowserDomAdapter.prototype.removeChild = /**\n * @param {?} el\n * @param {?} node\n * @return\n
{?}\n */\n function (el, node) { el.removeChild(node); }; \n /**\n * @param {?} el\n * @param {?} newChild\n
* @param {?} oldChild\n * @return {?}\n */\n BrowserDomAdapter.prototype.replaceChild =\n
/**\n * @param {?} el\n * @param {?} newChild\n * @param {?} oldChild\n * @return {?}\n */\n
function (el, newChild, oldChild) { el.replaceChild(newChild, oldChild); }; \n /**\n * @param {?} node\n *
@return {?}\n */\n BrowserDomAdapter.prototype.remove = /**\n * @param {?} node\n * @return {?}\n\n
*/\n function (node) {\n if (node.parentNode) {\n node.parentNode.removeChild(node);\n }\n
return node;\n }; \n /**\n * @param {?} parent\n * @param {?} ref\n * @param {?} node\n * @return\n
{?}\n */\n BrowserDomAdapter.prototype.insertBefore = /**\n * @param {?} parent\n * @param {?} ref\n
* @param {?} node\n * @return {?}\n */\n function (parent, ref, node) { parent.insertBefore(node,\n
ref); }; \n /**\n * @param {?} parent\n * @param {?} ref\n * @param {?} nodes\n * @return {?}\n\n
*/\n BrowserDomAdapter.prototype.insertAllBefore = /**\n * @param {?} parent\n * @param {?} ref\n * @param\n
{?} nodes\n * @return {?}\n */\n function (parent, ref, nodes) {\n nodes.forEach(function (n) {\n
return parent.insertBefore(n, ref); });\n }; \n /**\n * @param {?} parent\n * @param {?} ref\n * @param\n
{?} node\n * @return {?}\n */\n BrowserDomAdapter.prototype.insertAfter = /**\n * @param {?} parent\n
* @param {?} ref\n * @param {?} node\n * @return {?}\n */\n function (parent, ref, node) {\n
parent.insertBefore(node, ref.nextSibling); }; \n /**\n * @param {?} el\n * @param {?} value\n * @return\n
{?}\n */\n BrowserDomAdapter.prototype.setInnerHTML = /**\n * @param {?} el\n * @param {?} value\n
* @return {?}\n */\n function (el, value) { el.innerHTML = value; }; \n /**\n * @param {?} el\n
* @return {?}\n */\n BrowserDomAdapter.prototype.getText = /**\n * @param {?} el\n * @return {?}\n\n
*/\n function (el) { return el.textContent; }; \n /**\n * @param {?} el\n * @param {?} value\n * @return\n
{?}\n */\n BrowserDomAdapter.prototype.setText = /**\n * @param {?} el\n * @param {?} value\n * @return\n
{?}\n */\n function (el, value) { el.textContent = value; }; \n /**\n * @param {?} el\n * @return\n
{?}\n */\n BrowserDomAdapter.prototype.getValue = /**\n * @param {?} el\n * @return {?}\n\n
*/\n function (el) { return el.value; }; \n /**\n * @param {?} el\n * @param {?} value\n * @return {?}\n\n
*/\n BrowserDomAdapter.prototype.setValue = /**\n * @param {?} el\n * @param {?} value\n * @return {?}\n\n
*/\n function (el, value) { el.value = value; }; \n /**\n * @param {?} el\n * @return {?}\n */\n
BrowserDomAdapter.prototype.getChecked = /**\n * @param {?} el\n * @return {?}\n */\n function (el)\n
{\n return el.checked; }; \n /**\n * @param {?} el\n * @param {?} value\n * @return {?}\n */\n
BrowserDomAdapter.prototype.setChecked = /**\n * @param {?} el\n * @param {?} value\n * @return\n
{?}\n */\n function (el, value) { el.checked = value; }; \n /**\n * @param {?} text\n * @return {?}\n\n
*/\n BrowserDomAdapter.prototype.createComment = /**\n * @param {?} text\n * @return {?}\n */\n
function (text) { return this.getDefaultDocument().createComment(text); }; \n /**\n * @param {?} html\n *
@return {?}\n */\n BrowserDomAdapter.prototype.createTemplate = /**\n * @param {?} html\n * @return\n
{?}\n */\n function (html) {\n var /** @type {?} */ t =\n
this.getDefaultDocument().createElement('template');\n t.innerHTML = html;\n return t;\n }; \n /**\n

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* @param {?} tagName\n * @param {?=} doc\n * @return {?}\n *\n
BrowserDomAdapter.prototype.createElement = /**\n * @param {?} tagName\n * @param {?=} doc\n *
@return {?}\n *\n function (tagName, doc) {\n doc = doc || this.getDefaultDocument();\n return
doc.createElement(tagName);\n };\n /**\n * @param {?} ns\n * @param {?} tagName\n * @param {?=}
doc\n * @return {?}\n *\n BrowserDomAdapter.prototype.createElementNS = /**\n * @param {?} ns\n
* @param {?} tagName\n * @param {?=} doc\n * @return {?}\n *\n function (ns, tagName, doc) {\n
doc = doc || this.getDefaultDocument();\n return doc.createElementNS(ns, tagName);\n };\n /**\n *
@param {?} text\n * @param {?=} doc\n * @return {?}\n *\n
BrowserDomAdapter.prototype.createTextNode = /**\n * @param {?} text\n * @param {?=} doc\n *
@return {?}\n *\n function (text, doc) {\n doc = doc || this.getDefaultDocument();\n return
doc.createTextNode(text);\n };\n /**\n * @param {?} attrName\n * @param {?} attrValue\n * @param
{?=} doc\n * @return {?}\n *\n BrowserDomAdapter.prototype.createScriptTag = /**\n * @param {?}
attrName\n * @param {?} attrValue\n * @param {?=} doc\n * @return {?}\n *\n function (attrName,
attrValue, doc) {\n doc = doc || this.getDefaultDocument();\n var /** @type {?} */ el = /** @type {?} */
(doc.createElement('SCRIPT'));\n el.setAttribute(attrName, attrValue);\n return el;\n };\n /**\n *
@param {?} css\n * @param {?=} doc\n * @return {?}\n *\n
BrowserDomAdapter.prototype.createStyleElement = /**\n * @param {?} css\n * @param {?=} doc\n *
@return {?}\n *\n function (css, doc) {\n doc = doc || this.getDefaultDocument();\n var /** @type {?} */
*/ style = /** @type {?} */ (doc.createElement('style'));\n this.appendChild(style, this.createTextNode(css,
doc));\n return style;\n };\n /**\n * @param {?} el\n * @return {?}\n *\n
BrowserDomAdapter.prototype.createShadowRoot = /**\n * @param {?} el\n * @return {?}\n *\n
function (el) { return (/** @type {?} */ (el)).createShadowRoot(); };\n /**\n * @param {?} el\n * @return
{?}\n *\n BrowserDomAdapter.prototype.getShadowRoot = /**\n * @param {?} el\n * @return {?}\n
*\n function (el) { return (/** @type {?} */ (el)).shadowRoot; };\n /**\n * @param {?} el\n * @return
{?}\n *\n BrowserDomAdapter.prototype.getHost = /**\n * @param {?} el\n * @return {?}\n *\n
function (el) { return (/** @type {?} */ (el)).host; };\n /**\n * @param {?} node\n * @return {?}\n
*\n
BrowserDomAdapter.prototype.clone = /**\n * @param {?} node\n * @return {?}\n *\n function (node) {
return node.cloneNode(true); };\n /**\n * @param {?} element\n * @param {?} name\n * @return {?}\n
*\n
BrowserDomAdapter.prototype.getElementsByClassName = /**\n * @param {?} element\n * @param
{?} name\n * @return {?}\n *\n function (element, name) {\n return
element.getElementsByClassName(name);\n };\n /**\n * @param {?} element\n * @param {?} name\n
* @return {?}\n *\n
BrowserDomAdapter.prototype.getElementsByTagName = /**\n * @param {?}
element\n * @param {?} name\n * @return {?}\n *\n function (element, name) {\n return
element.getElementsByTagName(name);\n };\n /**\n * @param {?} element\n * @return {?}\n
*\n
BrowserDomAdapter.prototype.classList = /**\n * @param {?} element\n * @return {?}\n *\n function
(element) { return Array.prototype.slice.call(element.classList, 0); };\n /**\n * @param {?} element\n
* @param {?} className\n * @return {?}\n *\n
BrowserDomAdapter.prototype.addClass = /**\n *
@param {?} element\n * @param {?} className\n * @return {?}\n *\n function (element, className) {
element.classList.add(className); };\n /**\n * @param {?} element\n * @param {?} className\n
* @return {?}\n *\n
BrowserDomAdapter.prototype.removeClass = /**\n * @param {?} element\n
* @param {?} className\n * @return {?}\n *\n function (element, className) {\n
element.classList.remove(className); };\n /**\n * @param {?} element\n * @param {?} className\n
* @return {?}\n *\n
BrowserDomAdapter.prototype.hasClass = /**\n * @param {?} element\n * @param
{?} className\n * @return {?}\n *\n function (element, className) {\n return
element.classList.contains(className);\n };\n /**\n * @param {?} element\n * @param {?} styleName\n
* @param {?} styleValue\n * @return {?}\n *\n
BrowserDomAdapter.prototype.setStyle = /**\n *
@param {?} element\n * @param {?} styleName\n * @param {?} styleValue\n * @return {?}\n *\n
function (element, styleName, styleValue) {\n element.style[styleName] = styleValue;\n };\n /**\n *

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@param {?} element\n * @param {?} styleName\n * @return {?}\n *\n
BrowserDomAdapter.prototype.removeStyle = /**\n * @param {?} element\n * @param {?} styleName\n *
@return {?}\n *\n function (element, styleName) {\n // IE requires " instead of null\n // see
https://github.com/angular/angular/issues/7916\n element.style[styleName] = "";\n };\n /**\n * @param {?}
element\n * @param {?} styleName\n * @return {?}\n *\n BrowserDomAdapter.prototype.getStyle =
/**\n * @param {?} element\n * @param {?} styleName\n * @return {?}\n *\n function (element,
styleName) { return element.style[styleName]; };\n /**\n * @param {?} element\n * @param {?} styleName\n
* @param {=} styleValue\n * @return {?}\n *\n BrowserDomAdapter.prototype.hasStyle = /**\n *
@param {?} element\n * @param {?} styleName\n * @param {=} styleValue\n * @return {?}\n *\n
function (element, styleName, styleValue) {\n var /** @type {?} */ value = this.getStyle(element, styleName) ||
"";\n return styleValue ? value == styleValue : value.length > 0;\n };\n /**\n * @param {?} element\n *
@return {?}\n *\n BrowserDomAdapter.prototype.tagName = /**\n * @param {?} element\n * @return
{?}\n *\n function (element) { return element.tagName; };\n /**\n * @param {?} element\n * @return
{?}\n *\n BrowserDomAdapter.prototype.attributeMap = /**\n * @param {?} element\n * @return {?}\n
*\n function (element) {\n var /** @type {?} */ res = new Map();\n var /** @type {?} */ elAttrs =
element.attributes;\n for (var /** @type {?} */ i = 0; i < elAttrs.length; i++) {\n var /** @type {?} */
attrib = elAttrs.item(i);\n res.set(attrib.name, attrib.value);\n }\n return res;\n };\n /**\n *
@param {?} element\n * @param {?} attribute\n * @return {?}\n *\n
BrowserDomAdapter.prototype.hasAttribute = /**\n * @param {?} element\n * @param {?} attribute\n *
@return {?}\n *\n function (element, attribute) {\n return element.hasAttribute(attribute);\n };\n /**\n
* @param {?} element\n * @param {?} ns\n * @param {?} attribute\n * @return {?}\n *\n
BrowserDomAdapter.prototype.hasAttributeNS = /**\n * @param {?} element\n * @param {?} ns\n *
@param {?} attribute\n * @return {?}\n *\n function (element, ns, attribute) {\n return
element.hasAttributeNS(ns, attribute);\n };\n /**\n * @param {?} element\n * @param {?} attribute\n
* @return {?}\n *\n BrowserDomAdapter.prototype.getAttribute = /**\n * @param {?} element\n *
@param {?} attribute\n * @return {?}\n *\n function (element, attribute) {\n return
element.getAttribute(attribute);\n };\n /**\n * @param {?} element\n * @param {?} ns\n * @param {?}
name\n * @return {?}\n *\n BrowserDomAdapter.prototype.getAttributeNS = /**\n * @param {?}
element\n * @param {?} ns\n * @param {?} name\n * @return {?}\n *\n function (element, ns, name)
{\n return element.getAttributeNS(ns, name);\n };\n /**\n * @param {?} element\n * @param {?}
name\n * @param {?} value\n * @return {?}\n *\n BrowserDomAdapter.prototype.setAttribute = /**\n
* @param {?} element\n * @param {?} name\n * @param {?} value\n * @return {?}\n *\n function
(element, name, value) { element.setAttribute(name, value); };\n /**\n * @param {?} element\n * @param
{=} ns\n * @param {?} name\n * @param {?} value\n * @return {?}\n *\n
BrowserDomAdapter.prototype.setAttributeNS = /**\n * @param {?} element\n * @param {?} ns\n *
@param {?} name\n * @param {?} value\n * @return {?}\n *\n function (element, ns, name, value) {\n
element.setAttributeNS(ns, name, value);\n };\n /**\n * @param {?} element\n * @param {?} attribute\n
* @return {?}\n *\n BrowserDomAdapter.prototype.removeAttribute = /**\n * @param {?} element\n *
@param {?} attribute\n * @return {?}\n *\n function (element, attribute) {\n
element.removeAttribute(attribute); };\n /**\n * @param {?} element\n * @param {?} ns\n * @param {?}
name\n * @return {?}\n *\n BrowserDomAdapter.prototype.removeAttributeNS = /**\n * @param {?}
element\n * @param {?} ns\n * @param {?} name\n * @return {?}\n *\n function (element, ns, name)
{\n element.removeAttributeNS(ns, name);\n };\n /**\n * @param {?} el\n * @return {?}\n *\n
BrowserDomAdapter.prototype.templateAwareRoot = /**\n * @param {?} el\n * @return {?}\n *\n
function (el) { return this.isTemplateElement(el) ? this.content(el) : el; };\n /**\n * @return {?}\n *\n
BrowserDomAdapter.prototype.createHtmlDocument = /**\n * @return {?}\n *\n function () {\n return
document.implementation.createHTMLDocument('fakeTitle'); };\n /**\n * @return {?}\n *\n
BrowserDomAdapter.prototype.getDefaultDocument = /**\n * @return {?}\n *\n function () { return

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document; }\n /**\n * @param {?} el\n * @return {?}\n *\n
BrowserDomAdapter.prototype.getBoundingClientRect = /**\n * @param {?} el\n * @return {?}\n *\n
function (el) {\n try {\n return el.getBoundingClientRect();\n }\n catch (** @type {?} */ e) {\n return { top: 0, bottom: 0, left: 0, right: 0, width: 0, height: 0; }\n }\n};\n /**\n * @param {?} doc\n * @return {?}\n *\n BrowserDomAdapter.prototype.getTitle = /**\n * @param {?} doc\n * @return {?}\n *\n function (doc) { return doc.title; };\n /**\n * @param {?} doc\n * @param {?} newTitle\n * @return {?}\n *\n BrowserDomAdapter.prototype.setTitle = /**\n * @param {?} doc\n * @param {?} newTitle\n * @return {?}\n *\n function (doc, newTitle) { doc.title = newTitle || ""; }\n /**\n * @param {?} n\n * @param {?} selector\n * @return {?}\n *\n BrowserDomAdapter.prototype.elementMatches = /**\n * @param {?} n\n * @param {?} selector\n * @return {?}\n *\n function (n, selector) {\n if (this.isElementNode(n)) {\n return n.matches && n.matches(selector) ||\n n.msMatchesSelector && n.msMatchesSelector(selector) ||\n n.webkitMatchesSelector && n.webkitMatchesSelector(selector);\n }\n return false;\n};\n /**\n * @param {?} el\n * @return {?}\n *\n
BrowserDomAdapter.prototype.isTemplateElement = /**\n * @param {?} el\n * @return {?}\n *\n
function (el) {\n return this.isElementNode(el) && el.nodeName === 'TEMPLATE';\n};\n /**\n * @param {?} node\n * @return {?}\n *\n BrowserDomAdapter.prototype.isTextNode = /**\n * @param {?} node\n * @return {?}\n *\n function (node) { return node.nodeType === Node.TEXT_NODE; }\n /**\n * @param {?} node\n * @return {?}\n *\n BrowserDomAdapter.prototype.isCommentNode = /**\n * @param {?} node\n * @return {?}\n *\n function (node) { return node.nodeType === Node.COMMENT_NODE; }\n /**\n * @param {?} node\n * @return {?}\n *\n
BrowserDomAdapter.prototype.isElementNode = /**\n * @param {?} node\n * @return {?}\n *\n
function (node) { return node.nodeType === Node.ELEMENT_NODE; }\n /**\n * @param {?} node\n * @return {?}\n *\n BrowserDomAdapter.prototype.hasShadowRoot = /**\n * @param {?} node\n * @return {?}\n *\n
function (node) {\n return node.shadowRoot != null && node instanceof HTMLElement;\n};\n /**\n * @param {?} node\n * @return {?}\n *\n
BrowserDomAdapter.prototype.isShadowRoot = /**\n * @param {?} node\n * @return {?}\n *\n
function (node) { return node instanceof DocumentFragment; }\n /**\n * @param {?} node\n * @return {?}\n *\n BrowserDomAdapter.prototype.importIntoDoc = /**\n * @param {?} node\n * @return {?}\n *\n
function (node) { return document.importNode(this.templateAwareRoot(node), true); }\n /**\n * @param {?} node\n * @return {?}\n *\n BrowserDomAdapter.prototype.adoptNode = /**\n * @param {?} node\n * @return {?}\n *\n function (node) { return document.adoptNode(node); }\n /**\n * @param {?} el\n * @return {?}\n *\n BrowserDomAdapter.prototype.getHref = /**\n * @param {?} el\n * @return {?}\n *\n function (el) { return /** @type {?} */ ((el.getAttribute('href'))); }\n /**\n * @param {?} event\n * @return {?}\n *\n BrowserDomAdapter.prototype.getEventKey = /**\n * @param {?} event\n * @return {?}\n *\n function (event) {\n var /** @type {?} */ key = event.key;\n if (key == null) {\n key = event.keyIdentifier;\n // keyIdentifier is defined in the old draft of DOM Level 3 Events implemented by Chrome and\n // Safari cf\n // http://www.w3.org/TR/2007/WD-DOM-Level-3-Events-20071221/events.html#Events-KeyBoardEvents-Interfaces\n if (key == null) {\n return 'Unidentified';\n }\n if (key.startsWith('U+')) {\n key = String.fromCharCode(parseInt(key.substring(2), 16));\n if (event.location === DOM_KEY_LOCATION_NUMPAD && _chromeNumKeyPadMap.hasOwnProperty(key)) {\n // There is a bug in Chrome for numeric keypad keys:\n // https://code.google.com/p/chromium/issues/detail?id=155654\n // 1, 2, 3 ... are reported as A, B, C ...\n key = /** @type {?} */ (_chromeNumKeyPadMap)[key];\n }\n }\n }\n return _keyMap[key] || key;\n};\n /**\n * @param {?} doc\n * @param {?} target\n * @return {?}\n *\n BrowserDomAdapter.prototype.getGlobalEventTarget = /**\n * @param {?} doc\n * @param {?} target\n * @return {?}\n *\n function (doc, target) {\n if (target === 'window') {\n return window;\n }\n if (target === 'document') {\n return doc;\n }\n if (target === 'body') {\n return doc.body;\n }\n}

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 }\n return null;\n };\n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.getHistory = /**\n * @return {?}\n */\n function () { return window.history; }; \n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.getLocation = /**\n * @return {?}\n */\n function () { return\n window.location; }; \n /**\n * @param {?} doc\n * @return {?}\n */\n BrowserDomAdapter.prototype.getBaseHref = /**\n * @param {?} doc\n * @return {?}\n */\n function\n (doc) {\n var /** @type {?} */ href = getBaseElementHref();\n return href == null ? null :\n relativePath(href);\n }; \n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.resetBaseElement =\n /**\n * @return {?}\n */\n function () { baseElement = null; }; \n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.getUserAgent = /**\n * @return {?}\n */\n function () { return\n window.navigator.userAgent; }; \n /**\n * @param {?} element\n * @param {?} name\n * @param {?}\n value\n * @return {?}\n */\n BrowserDomAdapter.prototype.setData = /**\n * @param {?} element\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n function (element, name, value) {\n this.setAttribute(element, 'data-' + name, value);\n }; \n /**\n * @param {?} element\n * @param {?}\n name\n * @return {?}\n */\n BrowserDomAdapter.prototype.getData = /**\n * @param {?} element\n * @param {?} name\n * @return {?}\n */\n function (element, name) {\n return this.getAttribute(element,\n 'data-' + name);\n }; \n /**\n * @param {?} element\n * @return {?}\n */\n BrowserDomAdapter.prototype.getComputedStyle = /**\n * @param {?} element\n * @return {?}\n */\n function (element) { return getComputedStyle(element); }; \n // TODO(tbosch): move this into a separate\n environment class once we have it\n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.supportsWebAnimation = /**\n * @return {?}\n */\n function () {\n return typeof (** @type {?} */ (Element)).prototype['animate'] === 'function';\n }; \n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.performanceNow = /**\n * @return {?}\n */\n function () {\n //\n performance.now() is not available in all browsers, see\n // http://caniuse.com/#search=performance.now\n return window.performance && window.performance.now ? window.performance.now() :\n new\n Date().getTime();\n }; \n /**\n * @return {?}\n */\n BrowserDomAdapter.prototype.supportsCookies =\n /**\n * @return {?}\n */\n function () { return true; }; \n /**\n * @param {?} name\n * @return {?}\n */\n BrowserDomAdapter.prototype.getCookie = /**\n * @param {?} name\n * @return {?}\n */\n function (name) { return parseCookieValue(document.cookie, name); }; \n /**\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n BrowserDomAdapter.prototype.setCookie = /**\n * @param\n {?} name\n * @param {?} value\n * @return {?}\n */\n function (name, value) {\n // document.cookie\n is magical, assigning into it assigns/overrides one cookie value, but does\n // not clear other cookies.\n document.cookie = encodeURIComponent(name) + '=' + encodeURIComponent(value);\n }; \n return\n BrowserDomAdapter;\n})(GenericBrowserDomAdapter);\nvar baseElement = null;\n/**\n * @return {?}\n */\nfunction getBaseElementHref() {\n if (!baseElement) {\n baseElement = /** @type {?} */\n ((document.querySelector('base')));\n if (!baseElement) {\n return null;\n }\n }\n return\n baseElement.getAttribute('href');\n}\n// based on urlUtils.js in AngularJS 1\nvar urlParsingNode;\n/**\n * @param\n {?} url\n * @return {?}\n */\nfunction relativePath(url) {\n if (!urlParsingNode) {\n urlParsingNode =\n document.createElement('a');\n urlParsingNode.setAttribute('href', url);\n return\n (urlParsingNode.pathname.charAt(0) === '/') ? urlParsingNode.pathname :\n '/' +\n urlParsingNode.pathname;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by\n tsc\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is\n governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n/**\n * A DI Token representing the main rendering context. In a browser this is the DOM Document.\n * Note:\n Document might not be available in the Application Context when Application and Rendering\n Contexts are not\n the same (e.g. when running the application into a Web Worker).\n * @deprecated import from\n `@angular/common` instead.\n */\nvar DOCUMENT$1 = DOCUMENT;\n\n/**\n * @fileoverview added by\n tsickle\n * @suppress {checkTypes} checked by\n tsc\n * @license\n * Copyright Google Inc. All Rights\n Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the

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LICENSE file at https://angular.io/license\n *\n/**\n * @return {?}\n *\nfunction supportsState() {\n return
!!window.history.pushState;\n}\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked
by tsc\n *\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n *\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n *\n/**\n
* `PlatformLocation` encapsulates all of the direct calls to platform APIs.\n * This class should not be used directly
by an application developer. Instead, use\n * {@link Location}.\n *\nvar BrowserPlatformLocation = /** @class
*/ (function (_super) {\n __extends(BrowserPlatformLocation, _super);\n function
BrowserPlatformLocation(_doc) {\n var _this = _super.call(this) || this;\n _this._doc = _doc;\n
_this._init();\n return _this;\n }\n // This is moved to its own method so that
`MockPlatformLocationStrategy` can overwrite it\n /** @internal *\n /**\n * @@internal\n * @return
{?}\n *\n BrowserPlatformLocation.prototype._init = /**\n * @@internal\n * @return {?}\n *\n
function () {\n (** @type {?} */ (this)).location = getDOM().getLocation();\n this._history =
getDOM().getHistory();\n }; \n /**\n * @return {?}\n *\n
BrowserPlatformLocation.prototype.getBaseHrefFromDOM = /**\n * @return {?}\n *\n function () { return
/** @type {?} */ ((getDOM().getBaseHref(this._doc))); }; \n /**\n * @param {?} fn\n * @return {?}\n
*\n BrowserPlatformLocation.prototype.onPopState = /**\n * @param {?} fn\n * @return {?}\n *\n
function (fn) {\n getDOM().getGlobalEventTarget(this._doc, 'window').addEventListener('popstate', fn, false);\n
}; \n /**\n * @param {?} fn\n * @return {?}\n *\n BrowserPlatformLocation.prototype.onHashChange
= /**\n * @param {?} fn\n * @return {?}\n *\n function (fn) {\n
getDOM().getGlobalEventTarget(this._doc, 'window').addEventListener('hashchange', fn, false);\n }; \n
Object.defineProperty(BrowserPlatformLocation.prototype, 'pathname', {\n get: /**\n * @return {?}\n
*\n function () { return this.location.pathname; }, \n set: /**\n * @param {?} newPath\n *
@return {?}\n *\n function (newPath) { this.location.pathname = newPath; }, \n enumerable: true, \n
configurable: true \n }); \n Object.defineProperty(BrowserPlatformLocation.prototype, 'search', {\n get:
/**\n * @return {?}\n *\n function () { return this.location.search; }, \n enumerable: true, \n
configurable: true \n }); \n Object.defineProperty(BrowserPlatformLocation.prototype, 'hash', {\n get: /**\n
* @return {?}\n *\n function () { return this.location.hash; }, \n enumerable: true, \n
configurable: true \n }); \n /**\n * @param {?} state\n * @param {?} title\n * @param {?} url\n *
@return {?}\n *\n BrowserPlatformLocation.prototype.pushState = /**\n * @param {?} state\n * @param
{?} title\n * @param {?} url\n * @return {?}\n *\n function (state, title, url) {\n if (supportsState())
{\n this._history.pushState(state, title, url);\n } \n else {\n this.location.hash = url;\n } \n
}; \n /**\n * @param {?} state\n * @param {?} title\n * @param {?} url\n * @return {?}\n *\n
BrowserPlatformLocation.prototype.replaceState = /**\n * @param {?} state\n * @param {?} title\n *
@param {?} url\n * @return {?}\n *\n function (state, title, url) {\n if (supportsState()) {\n
this._history.replaceState(state, title, url);\n } \n else {\n this.location.hash = url;\n } \n
}; \n /**\n * @return {?}\n *\n BrowserPlatformLocation.prototype.forward = /**\n * @return {?}\n *\n
function () { this._history.forward(); }; \n /**\n * @return {?}\n *\n
BrowserPlatformLocation.prototype.back = /**\n * @return {?}\n *\n function () { this._history.back(); }; \n
BrowserPlatformLocation.decorators = [\n { type: Injectable }, \n]; \n /** @nocollapse *\n
BrowserPlatformLocation.ctorParameters = function () { return [\n { type: undefined, decorators: [{ type: Inject,
args: [DOCUMENT$1,], },], \n]; \n return BrowserPlatformLocation; \n})(PlatformLocation);\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n *\n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n *\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n *\n/**\n * A service that can be used to get and add meta
tags.\n *\n * @@experimental\n *\nvar Meta = /** @class */ (function () {\n function Meta(_doc) {\n
this._doc = _doc;\n this._dom = getDOM();\n } \n /**\n * @param {?} tag\n * @param {?} =
forceCreation\n * @return {?}\n *\n Meta.prototype.addTag = /**\n * @param {?} tag\n * @param
{?} = forceCreation\n * @return {?}\n *\n function (tag, forceCreation) {\n if (forceCreation === void 0)

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{ forceCreation = false; } \n if (!tag) \n return null; \n return this._getOrCreateElement(tag,
forceCreation); \n }; \n /** \n * @param {?} tags \n * @param {?=} forceCreation \n * @return {?} \n * \n * Meta.prototype.addTags = /** \n * @param {?} tags \n * @param {?=} forceCreation \n * @return
{?} \n * \n * function (tags, forceCreation) { \n * var _this = this; \n * if (forceCreation === void 0) {
forceCreation = false; } \n * if (!tags) \n * return []; \n * return tags.reduce(function (result, tag) { \n * if
(tag) { \n * result.push(_this._getOrCreateElement(tag, forceCreation)); \n * } \n * return result; \n
 }, []); \n }; \n /** \n * @param {?} attrSelector \n * @return {?} \n * \n * Meta.prototype.getTag = /** \n
 * @param {?} attrSelector \n * @return {?} \n * \n * function (attrSelector) { \n * if (!attrSelector) \n
return null; \n * return this._dom.querySelector(this._doc, "meta[" + attrSelector + "]" || null); \n }; \n /** \n
 * @param {?} attrSelector \n * @return {?} \n * \n * Meta.prototype.getTags = /** \n * @param {?}
attrSelector \n * @return {?} \n * \n * function (attrSelector) { \n * if (!attrSelector) \n * return []; \n
 var /** @type {?} */ list = this._dom.querySelectorAll(this._doc, "meta[" + attrSelector + "]"); \n * return list ?
[] : slice.call(list); \n }; \n /** \n * @param {?} tag \n * @param {?=} selector \n * @return {?} \n * \n
 Meta.prototype.updateTag = /** \n * @param {?} tag \n * @param {?=} selector \n * @return {?} \n * \n
 function (tag, selector) { \n * if (!tag) \n * return null; \n * selector = selector || this._parseSelector(tag); \n
 var /** @type {?} */ meta = /** @type {?} */ ((this.getTag(selector))); \n * if (meta) { \n * return
this._setMetaElementAttributes(tag, meta); \n * } \n * return this._getOrCreateElement(tag, true); \n }; \n
 /** \n * @param {?} attrSelector \n * @return {?} \n * \n * Meta.prototype.removeTag = /** \n * @param
{?} attrSelector \n * @return {?} \n * \n * function (attrSelector) { \n * this.removeTagElement(/** @type {?} */
((this.getTag(attrSelector))); \n }; \n /** \n * @param {?} meta \n * @return {?} \n * \n
 Meta.prototype.removeTagElement = /** \n * @param {?} meta \n * @return {?} \n * \n * function (meta) { \n
 if (meta) { \n * this._dom.remove(meta); \n * } \n }; \n /** \n * @param {?} meta \n * @param
{?=} forceCreation \n * @return {?} \n * \n * Meta.prototype._getOrCreateElement = /** \n * @param {?}
meta \n * @param {?=} forceCreation \n * @return {?} \n * \n * function (meta, forceCreation) { \n * if
(forceCreation === void 0) { forceCreation = false; } \n * if (!forceCreation) { \n * var /** @type {?} */
selector = this._parseSelector(meta); \n * var /** @type {?} */ elem = /** @type {?} */
((this.getTag(selector))); \n * // It's allowed to have multiple elements with the same name so it's not enough
to \n * // just check that element with the same name already present on the page. We also need to \n * //
check if element has tag attributes \n * if (elem && this._containsAttributes(meta, elem)) \n * return
elem; \n * } \n * var /** @type {?} */ element = /** @type {?} */ (this._dom.createElement('meta')); \n * this._setMetaElementAttributes(meta, element); \n
 var /** @type {?} */ head =
this._dom.getElementsByTagName(this._doc, 'head')[0]; \n * this._dom.appendChild(head, element); \n * return
element; \n }; \n /** \n * @param {?} tag \n * @param {?} el \n * @return {?} \n * \n
 Meta.prototype._setMetaElementAttributes = /** \n * @param {?} tag \n * @param {?} el \n * @return {?} \n * \n
 function (tag, el) { \n * var _this = this; \n * Object.keys(tag).forEach(function (prop) { \n * return
_this._dom.setAttribute(el, prop, tag[prop]); \n * }); \n * return el; \n }; \n /** \n * @param {?} tag \n * @return
{?} \n * \n * Meta.prototype._parseSelector = /** \n * @param {?} tag \n * @return {?} \n * \n * function
(tag) { \n * var /** @type {?} */ attr = tag.name ? 'name' : 'property'; \n * return attr + "=" + "\"" + tag[attr] +
 "\"" + "\""; \n }; \n /** \n * @param {?} tag \n * @param {?} elem \n * @return {?} \n * \n
 Meta.prototype._containsAttributes = /** \n * @param {?} tag \n * @param {?} elem \n * @return {?} \n * \n
 function (tag, elem) { \n * var _this = this; \n * return Object.keys(tag).every(function (key) { \n * return
_this._dom.getAttribute(elem, key) === tag[key]; \n * }); \n }; \n Meta.decorators = [\n * { type: Injectable }, \n
]; \n /** @nocollapse */ \n Meta.ctorParameters = function () { \n * return [\n * { type: undefined, decorators: [\n
 type: Inject, args: [DOCUMENT$1,],], \n *]; \n * return Meta; \n }; \n /** \n * @fileoverview added by
tsickle \n * @suppress {checkTypes} checked by tsc \n * \n * \n * @license \n * Copyright Google Inc. All Rights
Reserved. \n * \n * Use of this source code is governed by an MIT-style license that can be \n * found in the
LICENSE file at https://angular.io/license \n * \n * \n * An id that identifies a particular application being
bootstrapped, that should \n * match across the client/server boundary. \n * \n * \n * var TRANSITION_ID = new

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InjectionToken('TRANSITION_ID');\n/**\n * @param {?} transitionId\n * @param {?} document\n * @param {?}\n injector\n * @return {?}\n */\nfunction appInitializerFactory(transitionId, document, injector) {\n return function\n () {\n // Wait for all application initializers to be completed before removing the styles set by\n // the\n server.\n injector.get(ApplicationInitStatus).donePromise.then(function () {\n var /** @type {?} */ dom\n = getDOM();\n var /** @type {?} */ styles = Array.prototype.slice.apply(dom.querySelectorAll(document,\n \'style[ng-transition]\'));\n styles.filter(function (el) { return dom.getAttribute(el, \'ng-transition\') ===\n transitionId; })\n .forEach(function (el) { return dom.remove(el); });\n });\n }\n}\n\nvar\nSERVER_TRANSITION_PROVIDERS = [\n {\n provide: APP_INITIALIZER,\n useFactory:\n appInitializerFactory,\n deps: [TRANSITION_ID, DOCUMENT$1, Injector],\n multi: true\n },\n];\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-\n * style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\nvar\nBrowserGetTestability\n = /** @class */ (function () {\n function BrowserGetTestability() {\n }\n /**\n * @return {?}\n */\n BrowserGetTestability.prototype.init = /**\n * @return {?}\n */\n function () {\n setTestabilityGetter(new\n BrowserGetTestability());\n }\n /**\n * @param {?} registry\n * @return {?}\n */\n BrowserGetTestability.prototype.addToWindow = /**\n * @param {?} registry\n * @return {?}\n */\n function (registry) {\n global[\'getAngularTestability\'] = function (elem, findInAncestors) {\n if\n (findInAncestors === void 0) {\n findInAncestors = true;\n }\n var /** @type {?} */ testability =\n registry.findTestabilityInTree(elem, findInAncestors);\n if (testability === null) {\n throw new\n Error(\'Could not find testability for element.\');\n }\n return testability;\n };\n global[\'getAllAngularTestabilities\'] = function () {\n return registry.getAllTestabilities();\n };\n global[\'getAllAngularRootElement\'] = function () {\n return registry.getAllRootElement();\n };\n var /** @type\n {?} */ whenAllStable = function (callback /** TODO #9100 */) {\n var /** @type {?} */ testabilities =\n global[\'getAllAngularTestabilities\']();\n var /** @type {?} */ count = testabilities.length;\n var /**\n @type {?} */ didWork = false;\n var /** @type {?} */ decrement = function (didWork_ /** TODO #9100 */)\n {\n didWork = didWork || didWork_;\n count--;\n if (count == 0) {\n callback(didWork);\n }\n };\n testabilities.forEach(function (testability /** TODO #9100 */)\n {\n testability.whenStable(decrement);\n });\n if (!global[\'frameworkStabilizers\']) {\n global[\'frameworkStabilizers\'] = [];\n }\n global[\'frameworkStabilizers\'].push(whenAllStable);\n };\n /**\n * @param {?} registry\n * @param {?} elem\n * @param {?} findInAncestors\n * @return {?}\n */\n BrowserGetTestability.prototype.findTestabilityInTree = /**\n * @param {?} registry\n * @param {?} elem\n * @param {?} findInAncestors\n * @return {?}\n */\n function (registry, elem, findInAncestors)\n {\n if (elem === null) {\n return null;\n }\n var /** @type {?} */ t =\n registry.getTestability(elem);\n if (t != null) {\n return t;\n }\n else if (!findInAncestors) {\n return null;\n }\n if (getDOM().isShadowRoot(elem)) {\n return this.findTestabilityInTree(registry,\n getDOM().getHost(elem), true);\n }\n return this.findTestabilityInTree(registry,\n getDOM().parentElement(elem), true);\n };\n return BrowserGetTestability;\n }());\n\n * @fileoverview\n * added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All\n * Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\n * LICENSE file at https://angular.io/license\n */\n\n * A service that can be used to get and set the title of a current\n * HTML document.\n * Since an Angular application can't be bootstrapped on the entire HTML document\n * (<html> tag)\n * it is not possible to bind to the `text` property of the `HTMLTitleElement` elements\n * (representing the <title> tag). Instead, this service can be used to set and get the current\n * title value.\n * \n * @experimental\n */\nvar\nTitle = /** @class */ (function () {\n function Title(_doc) {\n this._doc = _doc;\n }\n /**\n * Get the title of the current HTML document.\n */\n /**\n * Get the title of the current HTML\n * document.\n * @return {?}\n */\n Title.prototype.getTitle = /**\n * Get the title of the current HTML\n * document.\n * @return {?}\n */\n function () {\n return getDOM().getTitle(this._doc);\n };\n /**\n * Set the\n * title of the current HTML document.\n * @param newTitle\n */\n /**\n * Set the title of the current HTML

```



```

*\n function () { return this._zone; };
/** @internal */
**\n * @param {?}
eventName\n * @return {?}\n
**\n * @internal\n *
@param {?} eventName\n * @return {?}\n
**\n * @type {?} */ plugin =
this._eventNameToPlugin.get(eventName);\n
if (plugin) {\n
return plugin;\n
}\n
var /** @type
{?} */ plugins = this._plugins;\n
for (var /** @type {?} */ i = 0; i < plugins.length; i++) {\n
var /**
@type {?} */ plugin_1 = plugins[i];\n
if (plugin_1.supports(eventName)) {\n
this._eventNameToPlugin.set(eventName, plugin_1);\n
return plugin_1;\n
}\n
}\n
throw
new Error("No event manager plugin found for event \"" + eventName);
};\n
EventManager.decorators = [\n
{ type: Injectable },\n
];\n
/** @nocollapse */
EventManager.ctorParameters = function () { return [\n
{
type: Array,
decorators: [{ type: Inject, args: [EVENT_MANAGER_PLUGINS,] }],\n
{ type: NgZone, }\n
];
};\n
return EventManager;\n
}());\n
**\n * @abstract\n
**\n * @class */ (function ()
{\n
function EventManagerPlugin(_doc) {\n
this._doc = _doc;\n
}\n
/**\n
* @param {?} element\n
* @param {?} eventName\n
* @param {?} handler\n
* @return {?}\n
**\n
EventManagerPlugin.prototype.addGlobalEventListener = /**\n
* @param {?} element\n
* @param {?}
eventName\n
* @param {?} handler\n
* @return {?}\n
**\n
function (element, eventName, handler) {\n
var /** @type {?} */ target =
getDOM().getGlobalEventTarget(this._doc, element);\n
if (!target) {\n
throw new Error("Unsupported event target \"" + target + "\" for event \"" +
eventName);
}\n
return
this.addEventListener(target, eventName, handler);\n
};\n
return EventManagerPlugin;\n
}());\n
**\n *
@fileoverview added by tsickle\n
* @suppress {checkTypes} checked by tsc\n
**\n * @license\n
* Copyright
Google Inc. All Rights Reserved.\n
* Use of this source code is governed by an MIT-style license that can be\n
* found in the LICENSE file at https://angular.io/license\n
**\n * @class */ (function () {\n
function SharedStylesHost() {\n
/**\n
* @internal\n
**\n
this._stylesSet = new Set();\n
}\n
/**\n
* @param {?} styles\n
* @return {?}\n
**\n
SharedStylesHost.prototype.addStyles = /**\n
*
@param {?} styles\n
* @return {?}\n
**\n
function (styles) {\n
var _this = this;\n
var /** @type {?}
*/ additions = new Set();\n
styles.forEach(function (style) {\n
if (!this._stylesSet.has(style)) {\n
_this._stylesSet.add(style);\n
additions.add(style);\n
}\n
});\n
this.onStylesAdded(additions);\n
};\n
/**\n
* @param {?} additions\n
* @return {?}\n
**\n
SharedStylesHost.prototype.onStylesAdded = /**\n
* @param {?} additions\n
* @return {?}\n
**\n
function (additions) {
};\n
/**\n
* @return {?}\n
**\n
SharedStylesHost.prototype.getAllStyles = /**\n
*
@return {?}\n
**\n
function () { return Array.from(this._stylesSet);
};\n
SharedStylesHost.decorators = [\n
{ type: Injectable },\n
];\n
/** @nocollapse */
SharedStylesHost.ctorParameters = function () { return [];
};\n
return SharedStylesHost;\n
}());\n
**\n * @class */ (function (_super) {\n
__extends(DomSharedStylesHost, _super);\n
function DomSharedStylesHost(_doc) {\n
var _this =
_super.call(this) || this;\n
_this._doc = _doc;\n
_this._hostNodes = new Set();\n
_this._styleNodes =
new Set();\n
_this._hostNodes.add(_doc.head);\n
return _this;\n
}\n
/**\n
* @param {?} styles\n
* @param {?} host\n
* @return {?}\n
**\n
DomSharedStylesHost.prototype._addStylesToHost = /**\n
*
@param {?} styles\n
* @param {?} host\n
* @return {?}\n
**\n
function (styles, host) {\n
var _this =
this;\n
styles.forEach(function (style) {\n
var /** @type {?} */ styleEl =
_this._doc.createElement('style');\n
styleEl.textContent = style;\n
_this._styleNodes.add(host.appendChild(styleEl));\n
});\n
};\n
/**\n
* @param {?} hostNode\n
*
@return {?}\n
**\n
DomSharedStylesHost.prototype.addHost = /**\n
* @param {?} hostNode\n
* @return
{?}\n
**\n
function (hostNode) {\n
this._addStylesToHost(this._stylesSet, hostNode);\n
this._hostNodes.add(hostNode);\n
};\n
/**\n
* @param {?} hostNode\n
* @return {?}\n
**\n
DomSharedStylesHost.prototype.removeHost = /**\n
* @param {?} hostNode\n
* @return {?}\n
**\n
function (hostNode) { this._hostNodes.delete(hostNode);
};\n
/**\n
* @param {?} additions\n
* @return
{?}\n
**\n
DomSharedStylesHost.prototype.onStylesAdded = /**\n
* @param {?} additions\n
* @return
{?}\n
**\n
function (additions) {\n
var _this = this;\n
this._hostNodes.forEach(function (hostNode) {
return _this._addStylesToHost(additions, hostNode);
});\n
};\n
/**\n
* @return {?}\n
**\n

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DomSharedStylesHost.prototype.ngOnDestroy = /**\n * @return {?} \n */\n function () {\n
this._styleNodes.forEach(function (styleNode) { return getDOM().remove(styleNode); });\n
DomSharedStylesHost.decorators = [\n { type: Injectable },\n];\n /** @nocollapse */\n
DomSharedStylesHost.ctorParameters = function () { return [\n { type: undefined, decorators: [{ type: Inject,\n
args: [DOCUMENT$1,],}],\n];\n return DomSharedStylesHost;\n}(SharedStylesHost);\n\n/**\n *
@fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n */\n\nvar NAMESPACE_URI = {\n 'svg':
'http://www.w3.org/2000/svg',\n 'xhtml': 'http://www.w3.org/1999/xhtml',\n 'xlink':
'http://www.w3.org/1999/xlink',\n 'xml': 'http://www.w3.org/XML/1998/namespace',\n 'xmlns':
'http://www.w3.org/2000/xmlns/',\n};\n\nvar COMPONENT_REGEX = /%COMP%/g;\n\nvar
COMPONENT_VARIABLE = '%COMP%';\n\nvar HOST_ATTR = "_ngghost-" +
COMPONENT_VARIABLE;\n\nvar CONTENT_ATTR = "_ngcontent-" + COMPONENT_VARIABLE;\n\n/**\n *
@param {?} componentShortId\n * @return {?} \n */\n\nfunction shimContentAttribute(componentShortId) {\n
return CONTENT_ATTR.replace(COMPONENT_REGEX, componentShortId);\n}\n\n/**\n * @param {?}
componentShortId\n * @return {?} \n */\n\nfunction shimHostAttribute(componentShortId) {\n return
HOST_ATTR.replace(COMPONENT_REGEX, componentShortId);\n}\n\n/**\n * @param {?} compId\n * @param
{?} styles\n * @param {?} target\n * @return {?} \n */\n\nfunction flattenStyles(compId, styles, target) {\n for (var
/** @type {?} */ i = 0; i < styles.length; i++) {\n var /** @type {?} */ style = styles[i];\n if
(Array.isArray(style)) {\n flattenStyles(compId, style, target);\n } else {\n style =
style.replace(COMPONENT_REGEX, compId);\n target.push(style);\n }\n }\n return
target;\n}\n\n/**\n * @param {?} eventHandler\n * @return {?} \n */\n\nfunction decoratePreventDefault(eventHandler)
{\n return function (event) {\n var /** @type {?} */ allowDefaultBehavior = eventHandler(event);\n if
(allowDefaultBehavior === false) {\n // TODO(tbosch): move preventDefault into event plugins...\n
event.preventDefault();\n event.returnValue = false;\n }\n };\n}\n\nvar DomRendererFactory2 = /**
@class */ (function () {\n function DomRendererFactory2(eventManager, sharedStylesHost) {\n
this.eventManager = eventManager;\n this.sharedStylesHost = sharedStylesHost;\n this.rendererByCompId
= new Map();\n this.defaultRenderer = new DefaultDomRenderer2(eventManager);\n }\n\n /**\n * @param
{?} element\n * @param {?} type\n * @return {?} \n */\n\n DomRendererFactory2.prototype.createRenderer
= /**\n * @param {?} element\n * @param {?} type\n * @return {?} \n */\n\n function (element, type) {\n
if (!element || !type) {\n return this.defaultRenderer;\n }\n switch (type.encapsulation) {\n
case ViewEncapsulation.Emulated: {\n var /** @type {?} */ renderer =
this.rendererByCompId.get(type.id);\n if (!renderer) {\n renderer =\n new
EmulatedEncapsulationDomRenderer2(this.eventManager, this.sharedStylesHost, type);\n
this.rendererByCompId.set(type.id, renderer);\n }\n\n (** @type {?} */
(renderer)).applyToHost(element);\n return renderer;\n }\n case ViewEncapsulation.Native:\n
return new ShadowDomRenderer(this.eventManager, this.sharedStylesHost, element, type);\n
default: {\n if (!this.rendererByCompId.has(type.id)) {\n var /** @type {?} */ styles =
flattenStyles(type.id, type.styles, []);\n this.sharedStylesHost.addStyles(styles);\n
this.rendererByCompId.set(type.id, this.defaultRenderer);\n }\n return this.defaultRenderer;\n
}\n }\n };\n\n /**\n * @return {?} \n */\n\n DomRendererFactory2.prototype.begin = /**\n * @return
{?} \n */\n\n function () {\n };\n\n /**\n * @return {?} \n */\n\n DomRendererFactory2.prototype.end = /**\n
* @return {?} \n */\n\n function () {\n };\n\n DomRendererFactory2.decorators = [\n { type: Injectable },\n
];\n\n /** @nocollapse */\n\n DomRendererFactory2.ctorParameters = function () { return [\n { type:
EventManager, },\n { type: DomSharedStylesHost, },\n];\n return DomRendererFactory2;\n}());\n\nvar
DefaultDomRenderer2 = /** @class */ (function () {\n function DefaultDomRenderer2(eventManager) {\n
this.eventManager = eventManager;\n this.data = Object.create(null);\n }\n\n /**\n * @return {?} \n */\n
DefaultDomRenderer2.prototype.destroy = /**\n * @return {?} \n */\n\n function () {\n };\n\n /**\n * @param

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{?} name\n * @param {?=} namespace\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.createElement = /**\n * @param {?} name\n * @param {?=} namespace\n * @return {?}\n *\n function (name, namespace) {\n if (namespace) {\n return
document.createElementNS(NAMESPACE_URIS[namespace], name);\n }\n return
document.createElement(name);\n };\n /**\n * @param {?} value\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.createComment = /**\n * @param {?} value\n * @return {?}\n *\n
function (value) { return document.createComment(value); };\n /**\n * @param {?} value\n * @return {?}\n *\n
*\n DefaultDomRenderer2.prototype.createText = /**\n * @param {?} value\n * @return {?}\n *\n
function (value) { return document.createTextNode(value); };\n /**\n * @param {?} parent\n * @param {?}
newChild\n * @return {?}\n *\n DefaultDomRenderer2.prototype.appendChild = /**\n * @param {?}
parent\n * @param {?} newChild\n * @return {?}\n *\n function (parent, newChild) {\n
parent.appendChild(newChild); };\n /**\n * @param {?} parent\n * @param {?} newChild\n * @param
{?} refChild\n * @return {?}\n *\n DefaultDomRenderer2.prototype.insertBefore = /**\n * @param {?}
parent\n * @param {?} newChild\n * @param {?} refChild\n * @return {?}\n *\n function (parent,
newChild, refChild) {\n if (parent) {\n parent.insertBefore(newChild, refChild);\n }\n };\n /**\n
* @param {?} parent\n * @param {?} oldChild\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.removeChild = /**\n * @param {?} parent\n * @param {?} oldChild\n *
@return {?}\n *\n function (parent, oldChild) {\n if (parent) {\n parent.removeChild(oldChild);\n
}\n };\n /**\n * @param {?} selectorOrNode\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.selectRootElement = /**\n * @param {?} selectorOrNode\n * @return {?}\n
*\n function (selectorOrNode) {\n var /** @type {?} */ el = typeof selectorOrNode === 'string' ?
document.querySelector(selectorOrNode) : selectorOrNode;\n if (!el) {\n throw new Error("\The
selector '\\\\\\" + selectorOrNode + '\\\\\\" did not match any elements");\n }\n el.textContent = ";\n return
el;\n };\n /**\n * @param {?} node\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.parentNode = /**\n * @param {?} node\n * @return {?}\n *\n function
(node) { return node.parentNode; };\n /**\n * @param {?} node\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.nextSibling = /**\n * @param {?} node\n * @return {?}\n *\n function
(node) { return node.nextSibling; };\n /**\n * @param {?} el\n * @param {?} name\n * @param {?}
value\n * @param {?=} namespace\n * @return {?}\n *\n DefaultDomRenderer2.prototype.setAttribute =
/**\n * @param {?} el\n * @param {?} name\n * @param {?} value\n * @param {?=} namespace\n *
@return {?}\n *\n function (el, name, value, namespace) {\n if (namespace) {\n name = namespace
+ \":\" + name;\n var /** @type {?} */ namespaceUri = NAMESPACE_URIS[namespace];\n if
(namespaceUri) {\n el.setAttributeNS(namespaceUri, name, value);\n }\n else {\n
el.setAttribute(name, value);\n }\n }\n else {\n el.setAttribute(name, value);\n }\n };\n
/**\n * @param {?} el\n * @param {?} name\n * @param {?=} namespace\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.removeAttribute = /**\n * @param {?} el\n * @param {?} name\n *
@param {?=} namespace\n * @return {?}\n *\n function (el, name, namespace) {\n if (namespace) {\n
var /** @type {?} */ namespaceUri = NAMESPACE_URIS[namespace];\n if (namespaceUri) {\n
el.removeAttributeNS(namespaceUri, name);\n }\n else {\n el.removeAttribute(namespace
+ \":\" + name);\n }\n }\n else {\n el.removeAttribute(name);\n }\n };\n /**\n *
@param {?} el\n * @param {?} name\n * @return {?}\n *\n DefaultDomRenderer2.prototype.addClass =
/**\n * @param {?} el\n * @param {?} name\n * @return {?}\n *\n function (el, name) {\n
el.classList.add(name); };\n /**\n * @param {?} el\n * @param {?} name\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.removeClass = /**\n * @param {?} el\n * @param {?} name\n * @return
{?}\n *\n function (el, name) { el.classList.remove(name); };\n /**\n * @param {?} el\n * @param {?}
style\n * @param {?} value\n * @param {?} flags\n * @return {?}\n *\n
DefaultDomRenderer2.prototype.setStyle = /**\n * @param {?} el\n * @param {?} style\n * @param {?}
value\n * @param {?} flags\n * @return {?}\n *\n function (el, style, value, flags) {\n if (flags &

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RendererStyleFlags2.DashCase) {\n el.style.setProperty(style, value, !(flags &
RendererStyleFlags2.Important) ? 'important' : '');\n }\n else {\n el.style[style] = value;\n }\n };\n /**\n * @param {?} el\n * @param {?} style\n * @param {?} flags\n * @return {?}\n */\n DefaultDomRenderer2.prototype.removeStyle = /**\n * @param {?} el\n * @param {?} style\n * @param
 {?} flags\n * @return {?}\n */\n function (el, style, flags) {\n if (flags & RendererStyleFlags2.DashCase)\n {\n el.style.removeProperty(style);\n }\n else {\n // IE requires " instead of null\n // see
 https://github.com/angular/angular/issues/7916\n el.style[style] = ";\n }\n };\n /**\n * @param {?}
 el\n * @param {?} name\n * @param {?} value\n * @return {?}\n */\n DefaultDomRenderer2.prototype.setProperty = /**\n * @param {?} el\n * @param {?} name\n * @param
 {?} value\n * @return {?}\n */\n function (el, name, value) {\n checkNoSyntheticProp(name,\n 'property');\n el[name] = value;\n };\n /**\n * @param {?} node\n * @param {?} value\n * @return
 {?}\n */\n function (node, value) {\n node.nodeValue = value;\n };\n /**\n * @param {?} target\n * @param {?} event\n * @param {?} callback\n * @return {?}\n */\n function (target, event, callback) {\n checkNoSyntheticProp(event,\n 'listener');\n if (typeof target === 'string') {\n return /** @type {?} */\n (this.eventManager.addGlobalEventListener(target, event, decoratePreventDefault(callback)));\n }\n return
 /** @type {?} */\n ((this.eventManager.addEventListener(target, event, decoratePreventDefault(callback)));\n);\n }\n return DefaultDomRenderer2;\n})();\nvar AT_CHARCODE = '@'.charCodeAt(0);\n/**\n * @param {?} name\n * @param {?} nameKind\n * @return {?}\n */\nfunction checkNoSyntheticProp(name, nameKind) {\n if
 (name.charCodeAt(0) === AT_CHARCODE) {\n throw new Error(`Found the synthetic "${nameKind} + "`\n + name + `". Please include either `"\`"BrowserAnimationsModule`" or `"\`"NoopAnimationsModule`" in your\n application.`);\n }\n}\nvar EmulatedEncapsulationDomRenderer2 = /** @class */ (function (_super) {\n __extends(EmulatedEncapsulationDomRenderer2, _super);\n function
 EmulatedEncapsulationDomRenderer2(eventManager, sharedStylesHost, component) {\n var _this =\n _super.call(this, eventManager) || this;\n _this.component = component;\n var /** @type {?} */ styles =\n flattenStyles(component.id, component.styles, []);\n sharedStylesHost.addStyles(styles);\n _this.contentAttr\n = shimContentAttribute(component.id);\n _this.hostAttr = shimHostAttribute(component.id);\n return\n _this;\n }\n /**\n * @param {?} element\n * @return {?}\n */\n function (element) {\n _super.prototype.setAttribute.call(this, element, this.hostAttr, "");\n };\n /**\n * @param {?} parent\n * @param {?} name\n * @return {?}\n */\n function (parent, name) {\n var /** @type {?} */ el =\n _super.prototype.createElement.call(this, parent, name);\n _super.prototype.setAttribute.call(this, el,\n this.contentAttr, "");\n return el;\n };\n return\n EmulatedEncapsulationDomRenderer2;\n})(DefaultDomRenderer2);\nvar ShadowDomRenderer = /** @class */\n(function (_super) {\n __extends(ShadowDomRenderer, _super);\n function\n ShadowDomRenderer(eventManager, sharedStylesHost, hostEl, component) {\n var _this = _super.call(this,\n eventManager) || this;\n _this.sharedStylesHost = sharedStylesHost;\n _this.hostEl = hostEl;\n _this.component = component;\n _this.shadowRoot = (** @type {?} */ (hostEl)).createShadowRoot();\n _this.sharedStylesHost.addHost(_this.shadowRoot);\n var /** @type {?} */ styles = flattenStyles(component.id,\n component.styles, []);\n for (var /** @type {?} */ i = 0; i < styles.length; i++) {\n var /** @type {?} */\n styleEl = document.createElement('style');\n styleEl.textContent = styles[i];\n _this.shadowRoot.appendChild(styleEl);\n }\n return _this;\n }\n /**\n * @param {?} node\n * @return {?}\n */\n function (node) {\n return node === this.hostEl ? this.shadowRoot : node;\n };\n /**\n *

```



```

/**\n * @return {?}\n *\n DomEventsPlugin.prototype.patchEvent = /**\n * @return {?}\n *\n
function () {\n if (!Event || !Event.prototype) {\n return;\n }\n if ((/** @type {?} */
(Event.prototype))[stopMethodSymbol]) {\n // already patched by zone.js\n return;\n }\n var
/** @type {?} */ delegate = (/** @type {?} */ (Event.prototype))[stopMethodSymbol] =\n
Event.prototype.stopImmediatePropagation;\n Event.prototype.stopImmediatePropagation = function () {\n
if (this) {\n this[stopSymbol] = true;\n }\n // should call native delegate in case\n // in
some enviroment part of the application\n // will not use the patched Event\n delegate &&
delegate.apply(this, arguments);\n };;\n // This plugin should come last in the list of plugins, because it
accepts all\n // events.\n /**\n * @param {?} eventName\n * @return {?}\n *\n
DomEventsPlugin.prototype.supports = /**\n * @param {?} eventName\n * @return {?}\n *\n function
(eventName) { return true; };;\n /**\n * @param {?} element\n * @param {?} eventName\n * @param {?}
handler\n * @return {?}\n *\n DomEventsPlugin.prototype.addEventListener = /**\n * @param {?}
element\n * @param {?} eventName\n * @param {?} handler\n * @return {?}\n *\n function (element,
eventName, handler) {\n var _this = this;\n /**\n * This code is about to add a listener to the DOM. If
Zone.js is present, than\n * `addEventListener` has been patched. The patched code adds overhead in both\n
* memory and speed (3x slower) than native. For this reason if we detect that\n * Zone.js is present we use a
simple version of zone aware addEventListener instead.\n * The result is faster registration and the zone will be
restored.\n * But ZoneSpec.onScheduleTask, ZoneSpec.onInvokeTask, ZoneSpec.onCancelTask\n * will
not be invoked\n * We also do manual zone restoration in element.ts renderEventHandlerClosure method.\n
*\n * NOTE: it is possible that the element is from different iframe, and so we\n * have to check before
we execute the method.\n *\n var /** @type {?} */ self = this;\n var /** @type {?} */ zoneJsLoaded =
element[ADD_EVENT_LISTENER];\n var /** @type {?} */ callback = /** @type {?} */ (handler);\n // if
zonejs is loaded and current zone is not ngZone\n // we keep Zone.current on target for later restoration.\n if
(zoneJsLoaded && (!NgZone.isInAngularZone() || isBlackListedEvent(eventName))) {\n var /** @type {?}
*/ symbolName = symbolNames[eventName];\n if (!symbolName) {\n symbolName =
symbolNames[eventName] = __symbol__(ANGULAR + eventName + FALSE);\n }\n var /** @type
{?} */ taskDatas = (/** @type {?} */ (element))[symbolName];\n var /** @type {?} */
globalListenerRegistered = taskDatas && taskDatas.length > 0;\n if (!taskDatas) {\n taskDatas =
(/** @type {?} */ (element))[symbolName] = [];\n }\n var /** @type {?} */ zone =
isBlackListedEvent(eventName) ? Zone.root : Zone.current;\n if (taskDatas.length === 0) {\n
taskDatas.push({ zone: zone, handler: callback });\n }\n else {\n var /** @type {?} */
callbackRegistered = false;\n for (var /** @type {?} */ i = 0; i < taskDatas.length; i++) {\n if
(taskDatas[i].handler === callback) {\n callbackRegistered = true;\n break;\n
}\n }\n if (!callbackRegistered) {\n taskDatas.push({ zone: zone, handler: callback
});\n }\n }\n if (!globalListenerRegistered) {\n
element[ADD_EVENT_LISTENER](eventName, globalListener, false);\n }\n }\n else {\n
element[NATIVE_ADD_LISTENER](eventName, callback, false);\n }\n return function () { return
_this.removeEventListener(element, eventName, callback); };;\n /**\n * @param {?} target\n *
@param {?} eventName\n * @param {?} callback\n * @return {?}\n *\n
DomEventsPlugin.prototype.removeEventListener = /**\n * @param {?} target\n * @param {?} eventName\n
* @param {?} callback\n * @return {?}\n *\n function (target, eventName, callback) {\n var /**
** @type {?} */ underlyingRemove = target[REMOVE_EVENT_LISTENER];\n // zone.js not loaded, use native
removeEventListener\n if (!underlyingRemove) {\n return
target[NATIVE_REMOVE_LISTENER].apply(target, [eventName, callback, false]);\n }\n var /** @type
{?} */ symbolName = symbolNames[eventName];\n var /** @type {?} */ taskDatas = symbolName &&
target[symbolName];\n if (!taskDatas) {\n // addEventListener not using patched version\n // just
call native removeEventListener\n return target[NATIVE_REMOVE_LISTENER].apply(target, [eventName,
callback, false]);\n }\n // fix issue 20532, should be able to remove\n // listener which was added inside

```

```

of ngZone\n var /** @type {?} */ found = false;\n for (var /** @type {?} */ i = 0; i < taskDatas.length;
i++) {\n // remove listener from taskDatas if the callback equals\n if (taskDatas[i].handler ===
callback) {\n found = true;\n taskDatas.splice(i, 1);\n break;\n }\n }\n if
(found) {\n if (taskDatas.length === 0) {\n // all listeners are removed, we can remove the
globalListener from target\n underlyingRemove.apply(target, [eventName, globalListener, false]);\n
 }\n }\n else {\n // not found in taskDatas, the callback may be added inside of ngZone\n // use
native remove listener to remove the callback\n target[NATIVE_REMOVE_LISTENER].apply(target,
[eventName, callback, false]);\n }\n };\n DomEventsPlugin.decorators = [\n { type: Injectable },\n];\n
/** @nocollapse */\n DomEventsPlugin.ctorParameters = function () { return [\n { type: undefined,
decorators: [{ type: Inject, args: [DOCUMENT$1,] },\n { type: NgZone, },\n];\n return
DomEventsPlugin;\n })(EventManagerPlugin);\n\n /**\n * @fileoverview added by tsickle\n * @suppress
{checkTypes} checked by tsc\n * ^\n **\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * \n * Use of
this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at
https://angular.io/license\n * ^\n nvar EVENT_NAMES = {\n // pan\n 'pan': true,\n 'panstart': true,\n 'panmove':
true,\n 'panend': true,\n 'pancancel': true,\n 'panleft': true,\n 'panright': true,\n 'panup': true,\n 'pandown':
true,\n // pinch\n 'pinch': true,\n 'pinchstart': true,\n 'pinchmove': true,\n 'pinchend': true,\n 'pinccancel':
true,\n 'pinchin': true,\n 'pinchout': true,\n // press\n 'press': true,\n 'pressup': true,\n // rotate\n 'rotate':
true,\n 'rotatestart': true,\n 'rotatemove': true,\n 'rotateend': true,\n 'rotatecancel': true,\n // swipe\n 'swipe':
true,\n 'swipeleft': true,\n 'swiperight': true,\n 'swipeup': true,\n 'swipedown': true,\n // tap\n 'tap':
true,\n };\n /**\n * A DI token that you can use to provide{@link HammerGestureConfig} to Angular. Use it to
configure\n * Hammer gestures.\n * \n * @experimental\n * ^\n nvar HAMMER_GESTURE_CONFIG = new
InjectionToken('HammerGestureConfig');\n /**\n * @record\n * ^\n n\n **\n * @experimental\n * ^\n nvar
HammerGestureConfig = /** @class */ (function () {\n function HammerGestureConfig() {\n this.events =
[];\n this.overrides = {};\n }\n /**\n * @param {?} element\n * @return {?} \n * ^\n
HammerGestureConfig.prototype.buildHammer = /**\n * @param {?} element\n * @return {?} \n * ^\n
function (element) {\n var /** @type {?} */ mc = new Hammer(element);\n mc.get('pinch').set({ enable:
true });\n mc.get('rotate').set({ enable: true });\n for (var /** @type {?} */ eventName in this.overrides) {\n
 mc.get(eventName).set(this.overrides[eventName]);\n }\n return mc;\n };\n
HammerGestureConfig.decorators = [\n { type: Injectable },\n];\n /** @nocollapse */\n
HammerGestureConfig.ctorParameters = function () { return []; }; \n return HammerGestureConfig;\n })();\n nvar
HammerGesturesPlugin = /** @class */ (function (_super) {\n __extends(HammerGesturesPlugin, _super);\n
function HammerGesturesPlugin(doc, _config) {\n var _this = _super.call(this, doc) || this;\n _this._config =
_config;\n return _this;\n }\n /**\n * @param {?} eventName\n * @return {?} \n * ^\n
HammerGesturesPlugin.prototype.supports = /**\n * @param {?} eventName\n * @return {?} \n * ^\n
function (eventName) {\n if (!EVENT_NAMES.hasOwnProperty(eventName.toLowerCase()) &&
!this.isCustomEvent(eventName)) {\n return false;\n }\n if (!/** @type {?} */ (window)).Hammer
{\n throw new Error("Hammer.js is not loaded, can not bind \"" + eventName + "\" event");\n }\n
return true;\n };\n /**\n * @param {?} element\n * @param {?} eventName\n * @param {?} handler\n
 * @return {?} \n * ^\n
HammerGesturesPlugin.prototype.addEventListener = /**\n * @param {?} element\n
 * @param {?} eventName\n * @param {?} handler\n * @return {?} \n * ^\n
function (element, eventName, handler) {\n var _this = this;\n var /** @type {?} */ zone = this.manager.getZone();\n eventName =
eventName.toLowerCase();\n return zone.runOutsideAngular(function () {\n // Creating the manager
bind events, must be done outside of angular\n var /** @type {?} */ mc =
_this._config.buildHammer(element);\n var /** @type {?} */ callback = function (eventObj) {\n
 zone.runGuarded(function () { handler(eventObj); });\n });\n mc.on(eventName, callback);\n
return function () { return mc.off(eventName, callback); }; \n });\n };\n /**\n * @param {?} eventName\n
 * @return {?} \n * ^\n
HammerGesturesPlugin.prototype.isCustomEvent = /**\n * @param {?} eventName\n
 * @return {?} \n * ^\n
function (eventName) { return this._config.events.indexOf(eventName) > -1; }; \n

```

```

HammerGesturesPlugin.decorators = [\n { type: Injectable },\n];\n /** @nocollapse */\n HammerGesturesPlugin.ctorParameters = function () { return [\n { type: undefined, decorators: [{ type: Inject, args: [DOCUMENT$1,] },],\n { type: HammerGestureConfig, decorators: [{ type: Inject, args: [HAMMER_GESTURE_CONFIG,] },],\n }];\n }; return HammerGesturesPlugin;\n})(EventManagerPlugin);\n\n/**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n */\n\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be found in the LICENSE file at\n * https://angular.io/license\n */\n\nvar MODIFIER_KEYS = ['alt', 'control', 'meta', 'shift'];\nvar 0$1 = function (event) {\n return event.altKey;\n};\nvar 1$1 = function (event) {\n return event.ctrlKey;\n};\nvar 2$1 = function (event) {\n return event.metaKey;\n};\nvar 3 = function (event) {\n return event.shiftKey;\n};\nvar MODIFIER_KEY_GETTERS = {\n 'alt': 0$1,\n 'control': 1$1,\n 'meta': 2$1,\n 'shift': 3\n};\n\n/**\n * @experimental\n */\nvar KeyEventsPlugin = /** @class */ (function (_super) {\n __extends(KeyEventsPlugin, _super);\n function KeyEventsPlugin(doc) {\n return _super.call(this, doc) || this;\n }\n /**\n * @param {?} eventName\n * @return {?} */\n KeyEventsPlugin.prototype.supports = /**\n * @param {?} eventName\n * @return {?} */\n function (eventName) {\n return KeyEventsPlugin.parseEventName(eventName) != null;\n }\n /**\n * @param {?} element\n * @param {?} eventName\n * @param {?} handler\n * @return {?} */\n KeyEventsPlugin.prototype.addEventListener = /**\n * @param {?} element\n * @param {?} eventName\n * @param {?} handler\n * @return {?} */\n function (element, eventName, handler) {\n var /** @type {?} */ parsedEvent = /** @type {?} */ ((KeyEventsPlugin.parseEventName(eventName)));\n var /** @type {?} */ outsideHandler = KeyEventsPlugin.eventCallback(parsedEvent['fullKey'], handler, this.manager.getZone());\n return this.manager.getZone().runOutsideAngular(function () {\n return getDOM().onAndCancel(element, parsedEvent['domEventName'], outsideHandler);\n });\n }\n /**\n * @param {?} eventName\n * @return {?} */\n KeyEventsPlugin.parseEventName = /**\n * @param {?} eventName\n * @return {?} */\n function (eventName) {\n var /** @type {?} */ parts = eventName.toLowerCase().split('.');\n var /** @type {?} */ domEventName = parts.shift();\n if ((parts.length === 0) || !(domEventName === 'keydown' || domEventName === 'keyup')) {\n return null;\n }\n var /** @type {?} */ key = KeyEventsPlugin._normalizeKey(/** @type {?} */ ((parts.pop())));\n var /** @type {?} */ fullKey = '';\n MODIFIER_KEYS.forEach(function (modifierName) {\n var /** @type {?} */ index = parts.indexOf(modifierName);\n if (index > -1) {\n parts.splice(index, 1);\n fullKey += modifierName + '.';\n }\n });\n fullKey += key;\n if (parts.length != 0 || key.length === 0) {\n // returning null instead of throwing to let another plugin process the event\n return null;\n }\n var /** @type {?} */ result = {};\n result['domEventName'] = domEventName;\n result['fullKey'] = fullKey;\n return result;\n }\n /**\n * @param {?} event\n * @return {?} */\n KeyEventsPlugin.getEventFullKey = /**\n * @param {?} event\n * @return {?} */\n function (event) {\n var /** @type {?} */ fullKey = '';\n var /** @type {?} */ key = getDOM().getEventKey(event);\n key = key.toLowerCase();\n if (key === ' ') {\n key = 'space'; // for readability\n } else if (key === '.') {\n key = 'dot'; // because '.' is used as a separator in event names\n }\n MODIFIER_KEYS.forEach(function (modifierName) {\n if (modifierName != key) {\n var /** @type {?} */ modifierGetter = MODIFIER_KEY_GETTERS[modifierName];\n if (modifierGetter(event)) {\n fullKey += modifierName + '.';\n }\n }\n });\n fullKey += key;\n return fullKey;\n }\n /**\n * @param {?} fullKey\n * @param {?} handler\n * @param {?} zone\n * @return {?} */\n KeyEventsPlugin.eventCallback = /**\n * @param {?} fullKey\n * @param {?} handler\n * @param {?} zone\n * @return {?} */\n function (fullKey, handler, zone) {\n return function (event /** TODO #9100 */) {\n if (KeyEventsPlugin.getEventFullKey(event) === fullKey) {\n zone.runGuarded(function () {\n return handler(event);\n });\n }\n };\n }\n /** @internal */\n /**\n * @param {?} keyName\n * @return {?} */\n KeyEventsPlugin._normalizeKey = /**\n * @param {?} keyName\n * @return {?} */\n function (keyName) {\n // TODO: switch to a Map if the mapping grows too much\n switch (keyName) {\n case 'esc':\n return

```





```

DOM.nodeName(element).toLowerCase();\n if (!VALID_ELEMENTS.hasOwnProperty(tagName)) {\n
this.sanitizedSomething = true;\n return;\n }\n this.buf.push('<');\n this.buf.push(tagName);\n
DOM.attributeMap(element).forEach(function (value, attrName) {\n var /** @type {?} */ lower =
attrName.toLowerCase();\n if (!VALID_ATTRS.hasOwnProperty(lower)) {\n
_this.sanitizedSomething = true;\n return;\n }\n // TODO(martinprobst): Special case image
URIs for data:image/...\n if (URI_ATTRS[lower])\n value = sanitizeUrl(value);\n if
(SRCSET_ATTRS[lower])\n value = sanitizeSrcset(value);\n _this.buf.push(' ');
_this.buf.push(attrName);\n _this.buf.push('=');\n _this.buf.push(encodeEntities(value));\n
_this.buf.push('');\n });\n this.buf.push('>');\n };\n /**\n * @param {?} current\n * @return {?}\n */\n SanitizingHtmlSerializer.prototype.endElement = /**\n * @param {?} current\n * @return {?}\n */\n function (current) {\n var /** @type {?} */ tagName = DOM.nodeName(current).toLowerCase();\n if
(VALID_ELEMENTS.hasOwnProperty(tagName) && !VOID_ELEMENTS.hasOwnProperty(tagName)) {\n
this.buf.push('</');\n this.buf.push(tagName);\n this.buf.push('>');\n };\n /**\n * @param
{?} chars\n * @return {?}\n */\n SanitizingHtmlSerializer.prototype.chars = /**\n * @param {?} chars\n
 * @return {?}\n */\n function (chars) { this.buf.push(encodeEntities(chars)); }; return
SanitizingHtmlSerializer();\n });\n /**\n * @param {?} node\n * @param {?} nextNode\n * @return {?}\n */\n function checkClobberedElement(node, nextNode) {\n if (nextNode && DOM.contains(node, nextNode)) {\n
 throw new Error("Failed to sanitize html because the element is clobbered: '" + DOM.getOuterHTML(node));\n
 }\n return nextNode;\n }\n // Regular Expressions for parsing tags and attributes\n var
SURROGATE_PAIR_REGEXP = /[\u00D800-\u00DBFF][\u00DC00-\u00DFFF]/g;\n // ! to ~ is the ASCII range.\n var
NON_ALPHANUMERIC_REGEXP = /([^\#\~\!\])/g;\n /**\n * Escapes all potentially dangerous characters, so that
the\n * resulting string can be safely inserted into attribute or\n * element text.\n * @param {?} value\n * @return
{?}\n */\n function encodeEntities(value) {\n return value.replace(/&/g, '&');\n
 }.replace(SURROGATE_PAIR_REGEXP, function (match) {\n var /** @type {?} */ hi =
match.charCodeAt(0);\n var /** @type {?} */ low = match.charCodeAt(1);\n return '&#'+ (((hi - 0xD800)
* 0x400) + (low - 0xDC00) + 0x10000) + ';' ;\n });\n .replace(NON_ALPHANUMERIC_REGEXP, function
(match) { return '&#'+ match.charCodeAt(0) + ';' ;\n }).replace(/</g, '<');\n .replace(/>/g,
'>');\n }\n /**\n * When IE9-11 comes across an unknown namespaced attribute e.g. 'xlink:foo' it adds
'xmlns:ns1'\n * attribute to declare ns1 namespace and prefixes the attribute with 'ns1' (e.g. 'ns1:xlink:foo').\n * This is undesirable since we don't want to allow any of these custom attributes. This method\n * strips them all.\n * @param {?} el\n * @return {?}\n */\n function stripCustomNsAttrs(el) {\n
DOM.attributeMap(el).forEach(function (_, attrName) {\n if (attrName === 'xmlns:ns1' ||
attrName.indexOf('ns1:') === 0) {\n DOM.removeAttribute(el, attrName);\n };\n });\n for (var _i = 0,
_a = DOM.childNodesAsList(el); _i < _a.length; _i++) {\n var n = _a[_i];\n if (DOM.isElementNode(n))\n stripCustomNsAttrs(/** @type {?} */ (n));\n }\n }\n /**\n * Sanitizes the given unsafe, untrusted HTML
fragment, and returns HTML text that is safe to add to\n * the DOM in a browser environment.\n * @param {?}
defaultDoc\n * @param {?} unsafeHtmlInput\n * @return {?}\n */\n function sanitizeHtml(defaultDoc,
unsafeHtmlInput) {\n try {\n var /** @type {?} */ containerEl = getInertElement();\n // Make sure
unsafeHtml is actually a string (TypeScript types are not enforced at runtime).\n var /** @type {?} */
unsafeHtml = unsafeHtmlInput ? String(unsafeHtmlInput) : '';\n // mXSS protection. Repeatedly parse the
document to make sure it stabilizes, so that a browser\n // trying to auto-correct incorrect HTML cannot cause
formerly inert HTML to become dangerous.\n var /** @type {?} */ mXSSAttempts = 5;\n var /** @type
{?} */ parsedHtml = unsafeHtml;\n do {\n if (mXSSAttempts === 0) {\n throw new
Error('Failed to sanitize html because the input is unstable');\n }\n mXSSAttempts--;\n
 }\n unsafeHtml = parsedHtml;\n DOM.setInnerHTML(containerEl, unsafeHtml);\n if
(defaultDoc.documentMode) {\n // strip custom-namespaced attributes on IE<=11\n stripCustomNsAttrs(containerEl);\n }\n parsedHtml = DOM.getInnerHTML(containerEl);\n }
while (unsafeHtml !== parsedHtml);\n var /** @type {?} */ sanitizer = new SanitizingHtmlSerializer();\n

```





`\\@stable` \* `@record` \* `^` \* `\\` \* Marker interface for a value that's safe to use as HTML. `\\@stable` \* `@record` \* `^` \* `\\` \* Marker interface for a value that's safe to use as style (CSS). `\\@stable` \* `@record` \* `^` \* `\\` \* Marker interface for a value that's safe to use as JavaScript. `\\@stable` \* `@record` \* `^` \* `\\` \* Marker interface for a value that's safe to use as a URL linking to a document. `\\@stable` \* `@record` \* `^` \* `\\` \* Marker interface for a value that's safe to use as a URL to load executable code from. `\\@stable` \* `@record` \* `^` \* `\\` \* `DomSanitizer` helps preventing Cross Site Scripting Security bugs (XSS) by sanitizing values to be safe to use in the different DOM contexts. For example, when binding a URL in an `<a [href]="someValue">` hyperlink, `someValue` will be sanitized so that an attacker cannot inject e.g. a `javascript:` URL that would execute code on the website. In specific situations, it might be necessary to disable sanitization, for example if the application genuinely needs to produce a `javascript:` style link with a dynamic value in it. Users can bypass security by constructing a value with one of the `bypassSecurityTrust...` methods, and then binding to that value from the template. These situations should be very rare, and extraordinary care must be taken to avoid creating a Cross Site Scripting (XSS) security bug! When using `bypassSecurityTrust...`, make sure to call the method as early as possible and as close as possible to the source of the value, to make it easy to verify no security bug is created by its use. It is not required (and not recommended) to bypass security if the value is safe, e.g. a URL that does not start with a suspicious protocol, or an HTML snippet that does not contain dangerous code. The sanitizer leaves safe values intact.

`\\@security` Calling any of the `bypassSecurityTrust...` APIs disables Angular's built-in sanitization for the value passed in. Carefully check and audit all values and code paths going into this call. Make sure any user data is appropriately escaped for this security context. For more detail, see the [Security Guide](http://g.co/ng/security).

```

@abstract
class DomSanitizer {
 function DomSanitizer() {}
 return DomSanitizer;
}

class DomSanitizerImpl {
 __extends(DomSanitizerImpl, _super);
 function DomSanitizerImpl(_doc) {
 _this = _super.call(this) || this;
 _this._doc = _doc;
 return _this;
 }

 @param {?} ctx
 @param {?} value
 @return {?}
 DomSanitizerImpl.prototype.sanitize = function (ctx, value) {
 if (value == null)
 return null;
 switch (ctx) {
 case SecurityContext.NONE:
 return value;
 case SecurityContext.HTML:
 if (value instanceof SafeHtmlImpl)
 return value;
 this.checkNotSafeValue(value, 'HTML');
 return sanitizeHtml(this._doc, String(value));
 case SecurityContext.STYLE:
 if (value instanceof SafeStyleImpl)
 return value;
 this.checkNotSafeValue(value, 'Style');
 return sanitizeStyle(value);
 case SecurityContext.SCRIPT:
 if (value instanceof SafeScriptImpl)
 return value;
 this.checkNotSafeValue(value, 'Script');
 throw new Error('unsafe value used in a script context');
 case SecurityContext.URL:
 if (value instanceof SafeResourceUrlImpl || value instanceof SafeUrlImpl)
 // Allow resource URLs in URL contexts, they are strictly more trusted.
 return value;
 this.checkNotSafeValue(value, 'URL');
 return sanitizeUrl(String(value));
 case SecurityContext.RESOURCE_URL:
 if (value instanceof SafeResourceUrlImpl)
 return value;
 this.checkNotSafeValue(value, 'ResourceURL');
 throw new Error('unsafe value used in a resource URL context (see http://g.co/ng/security#xss)');
 default:
 throw new Error('Unexpected SecurityContext ' + ctx + ' (see http://g.co/ng/security#xss)');
 }
 }

 @param {?} value
 @param {?} expectedType
 @return {?}
 DomSanitizerImpl.prototype.checkNotSafeValue = function (value, expectedType) {
 if (value instanceof SafeValueImpl)
 throw new Error('Required a safe ' + expectedType + ', got a ' + value.getTypeName() + ' (see http://g.co/ng/security#xss)');
 }

 @param {?} value
 @return {?}
 DomSanitizerImpl.prototype.bypassSecurityTrustHtml = function (value) {
 return value;
 }
}

```



```

[DOCUMENT$1] },\n];\n\n**\n * \\\n * \n\nvar platformBrowser = createPlatformFactory(platformCore,\n'browser', INTERNAL_BROWSER_PLATFORM_PROVIDERS);\n\n**\n * @return {?}\n\nfunction\ninitDomAdapter() {\n BrowserDomAdapter.makeCurrent();\n BrowserGetTestability.init();\n}\n\n**\n * @return\n{?}\n\nfunction errorHandler() {\n return new ErrorHandler();\n}\n\n**\n * @return {?}\n\nfunction\n_document() {\n return document;\n}\n\n**\n * The ng module for the browser.\n\n * \\\n * \n\nvar\nBrowserModule = /** @class */ (function () {\n function BrowserModule(parentModule) {\n if\n(parentModule) {\n throw new Error("`BrowserModule has already been loaded. If you need access to\ncommon directives such as NgIf and NgFor from a lazy loaded module, import CommonModule instead.");\n}\n }\n\n /**\n * Configures a browser-based application to transition from a server-rendered app, if\n * one\n is present on the page. The specified parameters must include an application id,\n * which must match between\n the client and server applications.\n *\n * @experimental\n *\n */\n /**\n * Configures a browser-based\n application to transition from a server-rendered app, if\n * one is present on the page. The specified parameters\n must include an application id,\n * which must match between the client and server applications.\n *\n * \\\n * @experimental\n * @param {?} params\n * @return {?}\n *\n */\n BrowserModule.prototype.withServerTransition =\n /**\n * Configures a browser-based application to transition from a server-rendered app, if\n * one is present on\n the page. The specified parameters must include an application id,\n * which must match between the client and\n server applications.\n *\n * \\\n * @experimental\n * @param {?} params\n * @return {?}\n *\n */\n function\n(params) {\n return {\n ngModule: BrowserModule,\n providers: [\n { provide: APP_ID,\n useValue: params.appId },\n { provide: TRANSITION_ID, useExisting: APP_ID },\n SERVER_TRANSITION_PROVIDERS,\n],\n];\n }\n }\n\n BrowserModule.prototype.decorators = [\n { type:\nNgModule, args: [{\n providers: [\n BROWSER_SANITIZATION_PROVIDERS,\n { provide: ErrorHandler, useFactory: errorHandler, deps: [] },\n EVENT_MANAGER_PLUGINS, useClass: DomEventsPlugin, multi: true },\n EVENT_MANAGER_PLUGINS, useClass: KeyEventsPlugin, multi: true },\n EVENT_MANAGER_PLUGINS, useClass: HammerGesturesPlugin, multi: true },\n HAMMER_GESTURE_CONFIG, useClass: HammerGestureConfig },\n DomRendererFactory2,\n { provide: RendererFactory2, useExisting: DomRendererFactory2 },\n DomSharedStylesHost,\n Testability,\n EventManager,\n ELEMENT_PROBE_PROVIDERS,\n Meta,\n Title,\n],\n exports: [CommonModule, ApplicationModule]\n },\n];\n\n /** @nocollapse */\n BrowserModule.prototype.ctorParameters = function () {\n return [\n { type:\nBrowserModule, decorators: [{ type: Optional }, { type: SkipSelf },] },\n];\n }\n\n return\nBrowserModule;\n}\n\n**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n\n**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by\nan MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n\nvar win = typeof\nwindow !== 'undefined' && window || /** @type {?} */ ({});\n\n**\n * @fileoverview added by tsickle\n * @suppress {checkTypes} checked by tsc\n\n**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at\nhttps://angular.io/license\n\nvar ChangeDetectionPerfRecord = /** @class */ (function () {\n function\nChangeDetectionPerfRecord(msPerTick, numTicks) {\n this.msPerTick = msPerTick;\n this.numTicks =\nnumTicks;\n }\n return ChangeDetectionPerfRecord;\n}\n\n**\n * Entry point for all Angular profiling-related\ndebug tools. This object\n * corresponds to the `ng.profiler` in the dev console.\n\nvar AngularProfiler = /**\n * @class */ (function () {\n function AngularProfiler(ref) {\n this.appRef = ref.injector.get(ApplicationRef);\n }\n\n // tslint:disable:no-console\n /**\n * Exercises change detection in a loop and then prints the average\n amount of\n * time in milliseconds how long a single round of change detection takes for\n * the current state\n of the UI. It runs a minimum of 5 rounds for a minimum\n * of 500 milliseconds.\n *\n * \n * Optionally, a user\n may pass a `config` parameter containing a map of\n * options. Supported options are:\n *\n * \n * `record`\n (boolean) - causes the profiler to record a CPU profile while\n * it exercises the change detector. Example:\n
```



```

(key);\n\n/**\n * A key value store that is transferred from the application on the server side to the application\n * on the client side.\n *\n * `TransferState` will be available as an injectable token. To use it import\n *\n * `ServerTransferStateModule` on the server and `BrowserTransferStateModule` on the client.\n *\n * The values in the store are serialized/deserialized using JSON.stringify/JSON.parse. So only\n * boolean, number, string, null and non-class objects will be serialized and deserialzied in a\n * non-lossy manner.\n *\n * @@experimental\n */\n\nvar\nTransferState = /** @class */ (function () {\n function TransferState() {\n this.store = {};\n\n this.onSerializeCallbacks = {};\n }\n\n /** @internal */\n /**\n * @@internal\n * @param {?} initState\n * @return {?}\n */\n TransferState.init = /**\n * @@internal\n * @param {?} initState\n * @return {?}\n */\n function (initState) {\n var /** @type {?} */ transferState = new TransferState();\n\n transferState.store = initState;\n return transferState;\n };\n\n /**\n * Get the value corresponding to a key. Return `defaultValue` if key is not found.\n */\n /**\n * Get the value corresponding to a key. Return `defaultValue` if key is not found.\n */\n /**\n * @template T\n * @param {?} key\n * @param {?} defaultValue\n * @return {?}\n */\n TransferState.prototype.get = /**\n * Get the value corresponding to a key. Return `defaultValue` if key is not found.\n */\n /**\n * @template T\n * @param {?} key\n * @param {?} defaultValue\n * @return {?}\n */\n function (key, defaultValue) {\n return /** @type {?} */ (this.store[key]) || defaultValue;\n };\n\n /**\n * Set the value corresponding to a key.\n */\n /**\n * Set the value corresponding to a key.\n */\n /**\n * @template T\n * @param {?} key\n * @param {?} value\n * @return {?}\n */\n TransferState.prototype.set = /**\n * Set the value corresponding to a key.\n */\n /**\n * @template T\n * @param {?} key\n * @param {?} value\n * @return {?}\n */\n function (key, value) {\n this.store[key] = value;\n };\n\n /**\n * Remove a key from the store.\n */\n /**\n * Remove a key from the store.\n */\n /**\n * @template T\n * @param {?} key\n * @return {?}\n */\n TransferState.prototype.remove = /**\n * Remove a key from the store.\n */\n /**\n * @template T\n * @param {?} key\n * @return {?}\n */\n function (key) {\n delete this.store[key];\n };\n\n /**\n * Test whether a key exists in the store.\n */\n /**\n * Test whether a key exists in the store.\n */\n /**\n * @template T\n * @param {?} key\n * @return {?}\n */\n TransferState.prototype.hasKey = /**\n * Test whether a key exists in the store.\n */\n /**\n * @template T\n * @param {?} key\n * @return {?}\n */\n function (key) {\n return this.store.hasOwnProperty(key);\n };\n\n /**\n * Register a callback to provide the value for a key when `toJson` is called.\n */\n /**\n * Register a callback to provide the value for a key when `toJson` is called.\n */\n /**\n * @template T\n * @param {?} key\n * @param {?} callback\n * @return {?}\n */\n TransferState.prototype.onSerialize = /**\n * Register a callback to provide the value for a key when `toJson` is called.\n */\n /**\n * @template T\n * @param {?} key\n * @param {?} callback\n * @return {?}\n */\n function (key, callback) {\n this.onSerializeCallbacks[key] = callback;\n };\n\n /**\n * Serialize the current state of the store to JSON.\n */\n /**\n * Serialize the current state of the store to JSON.\n */\n /**\n * @return {?}\n */\n TransferState.prototype.toJson = /**\n * Serialize the current state of the store to JSON.\n */\n /**\n * @return {?}\n */\n function () {\n // Call the onSerialize callbacks and put those values into the store.\n for (var /** @type {?} */ key in this.onSerializeCallbacks) {\n if (this.onSerializeCallbacks.hasOwnProperty(key)) {\n try {\n this.store[key] = this.onSerializeCallbacks[key]();\n } catch (/** @type {?} */ e) {\n console.warn('Exception in onSerialize callback: ', e);\n }\n }\n }\n\n return JSON.stringify(this.store);\n };\n\n TransferState.decorators = [\n { type: Injectable },\n];\n\n /**\n * @nocollapse\n */\n TransferState.ctorParameters = function () {\n return [];\n };\n\n return TransferState;\n})();\n\n/**\n * @param {?} doc\n * @param {?} appId\n * @return {?}\n */\nfunction initTransferState(doc, appId) {\n // Locate the script tag with the JSON data transferred from the server.\n // The id of the script tag is set to the Angular appId + 'state'.\n var /** @type {?} */ script = doc.getElementById(appId + '-state');\n var /** @type {?} */ initialState = {};\n if (script && script.textContent) {\n try {\n initialState = JSON.parse(unescapeHtml(script.textContent));\n } catch (/** @type {?} */ e) {\n console.warn('Exception while restoring TransferState for app ' + appId, e);\n }\n }\n\n TransferState.init(initialState);\n}\n\n/**\n * NgModule to install on the client side while using the `TransferState` to transfer state from\n * server to client.\n *\n * @@experimental\n */\nvar BrowserTransferStateModule = /** @class

```















components/totvs-gps-rpw/node\_modules/core-js/modules/\_collection.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_core.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_ctx.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_defined.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_descriptors.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_dom-create.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_enum-bug-keys.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_export.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_fails.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_for-of.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_global.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_has.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_hide.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_html.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_ie8-dom-define.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_inherit-if-required.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iobject.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_is-array-iter.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_is-array.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_is-object.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iter-call.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iter-create.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iter-define.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iter-detect.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iter-step.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_iterators.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_library.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_meta.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_metadata.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-assign.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-create.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-dp.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-dps.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-gopd.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-gops.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-gpo.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-keys-internal.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-keys.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_object-pie.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_property-desc.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_redefine-all.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_redefine.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_set-proto.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_set-species.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_set-to-string-tag.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_shared-key.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_shared.js", "C:/V11-THF2/totvs-hgp/totvs-thf2-components/totvs-gps-rpw/node\_modules/core-js/modules/\_to-absolute-index.js", "C:/V11-THF2/totvs-hgp/totvs-























































```

return zone.runGuarded(_callback, this, arguments, source);\n };\n Zone.prototype.run =
function (callback, applyThis, applyArgs, source) {\n if (applyThis === void 0) { applyThis = undefined; }\n if (applyArgs === void 0) { applyArgs = null; }\n if (source === void 0) { source = null; }\n _currentZoneFrame = { parent: _currentZoneFrame, zone: this };\n try {\n return
this._zoneDelegate.invoke(this, callback, applyThis, applyArgs, source);\n }\n finally {\n _currentZoneFrame = _currentZoneFrame.parent;\n }\n };\n Zone.prototype.runGuarded = function
(callback, applyThis, applyArgs, source) {\n if (applyThis === void 0) { applyThis = null; }\n if
(applyArgs === void 0) { applyArgs = null; }\n if (source === void 0) { source = null; }\n _currentZoneFrame = { parent: _currentZoneFrame, zone: this };\n try {\n try {\n return
this._zoneDelegate.invoke(this, callback, applyThis, applyArgs, source);\n }\n catch (error) {\n if (this._zoneDelegate.handleError(this, error)) {\n throw error;\n }\n }\n }\n finally {\n _currentZoneFrame = _currentZoneFrame.parent;\n }\n };\n Zone.prototype.runTask = function (task, applyThis, applyArgs) {\n if (task.zone !== this) {\n throw
new Error('A task can only be run in the zone of creation! (Creation: ' +\n (task.zone || NO_ZONE).name
+ '; Execution: ' + this.name + '));\n }\n // https://github.com/angular/zone.js/issues/778, sometimes
eventTask\n // will run in notScheduled(canceled) state, we should not try to\n // run such kind of task
but just return\n // we have to define an variable here, if not\n // typescript compiler will complain
below\n var isNotScheduled = task.state === notScheduled;\n if (isNotScheduled && task.type ===
eventTask) {\n return;\n }\n var reEntryGuard = task.state !== running;\n reEntryGuard
&& task._transitionTo(running, scheduled);\n task.runCount++;\n var previousTask = _currentTask;\n _currentTask = task;\n _currentZoneFrame = { parent: _currentZoneFrame, zone: this };\n try {\n if (task.type === macroTask && task.data && !task.data.isPeriodic) {\n task.cancelFn = null;\n }\n try {\n return this._zoneDelegate.invokeTask(this, task, applyThis, applyArgs);\n }\n catch (error) {\n if (this._zoneDelegate.handleError(this, error)) {\n throw error;\n }\n }\n finally {\n // if the task's state is notScheduled
or unknown, then it has already been cancelled\n // we should not reset the state to scheduled\n if
(task.state !== notScheduled && task.state !== unknown) {\n if (task.type === eventTask || (task.data &&
task.data.isPeriodic)) {\n reEntryGuard && task._transitionTo(scheduled, running);\n }\n else {\n task.runCount = 0;\n this._updateTaskCount(task, -1);\n }\n reEntryGuard &&\n task._transitionTo(notScheduled, running, notScheduled);\n }\n }\n _currentZoneFrame = _currentZoneFrame.parent;\n _currentTask = previousTask;\n }\n };\n Zone.prototype.scheduleTask = function (task) {\n if (task.zone && task.zone !== this)\n // check if the task was rescheduled, the newZone\n // should not be the children of the
original zone\n var newZone = this;\n while (newZone) {\n if (newZone ===
task.zone) {\n throw Error('can not reschedule task to \'' + this\n .name + '\'' which is
descendants of the original zone \'' + task.zone.name);\n }\n newZone = newZone.parent;\n }\n task._transitionTo(scheduling, notScheduled);\n var zoneDelegates = [];\n task._zoneDelegates = zoneDelegates;\n task._zone = this;\n try {\n task =
this._zoneDelegate.scheduleTask(this, task);\n }\n catch (err) {\n // should set task's state to
unknown when scheduleTask throw error\n // because the err may from reschedule, so the fromState
maybe notScheduled\n task._transitionTo(unknown, scheduling, notScheduled);\n // TODO:
@JiaLiPassion, should we check the result from handleError?\n this._zoneDelegate.handleError(this,
err);\n throw err;\n }\n if (task._zoneDelegates === zoneDelegates) {\n // we have
to check because internally the delegate can reschedule the task.\n this._updateTaskCount(task, 1);\n }\n if (task.state === scheduling) {\n task._transitionTo(scheduled, scheduling);\n }\n return task;\n };\n Zone.prototype.scheduleMicroTask = function (source, callback, data, customSchedule)\n {\n return this.scheduleTask(new ZoneTask(microTask, source, callback, data, customSchedule, null));\n }\n Zone.prototype.scheduleMacroTask = function (source, callback, data, customSchedule, customCancel) {\n

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return this.scheduleTask(new ZoneTask(macroTask, source, callback, data, customSchedule,
customCancel));\n };\n Zone.prototype.scheduleEventTask = function (source, callback, data,
customSchedule, customCancel) {\n return this.scheduleTask(new ZoneTask(eventTask, source, callback,
data, customSchedule, customCancel));\n };\n Zone.prototype.cancelTask = function (task) {\n if
(task.zone !== this)\n throw new Error('A task can only be cancelled in the zone of creation! (Creation: ' +\n
(task.zone || NO_ZONE).name + '; Execution: ' + this.name + '));\n task._transitionTo(canceling,
scheduled, running);\n try {\n this._zoneDelegate.cancelTask(this, task);\n }\n catch
(err) {\n // if error occurs when cancelTask, transit the state to unknown\n task._transitionTo(unknown, canceling);\n this._zoneDelegate.handleError(this, err);\n throw
err;\n }\n this._updateTaskCount(task, -1);\n task._transitionTo(notScheduled, canceling);\n task.runCount = 0;\n return task;\n };\n Zone.prototype._updateTaskCount = function (task, count)
{\n var zoneDelegates = task._zoneDelegates;\n if (count === -1) {\n task._zoneDelegates =
null;\n }\n for (var i = 0; i < zoneDelegates.length; i++) {\n zoneDelegates[i]._updateTaskCount(task.type, count);\n }\n };\n Zone.__symbol__ = __symbol__;\n return Zone;\n }());\n var DELEGATE_ZS = {\n name: ",\n onHasTask: function (delegate, _,
target, hasTaskState) {\n return delegate.hasTask(target, hasTaskState);\n },\n onScheduleTask:
function (delegate, _, target, task) {\n return delegate.scheduleTask(target, task);\n },\n onInvokeTask: function (delegate, _, target, task, applyThis, applyArgs) { return delegate.invokeTask(target, task,
applyThis, applyArgs); },\n onCancelTask: function (delegate, _, target, task) {\n return
delegate.cancelTask(target, task);\n }\n };\n var ZoneDelegate = /** @class */ (function () {\n function
ZoneDelegate(zone, parentDelegate, zoneSpec) {\n this._taskCounts = { 'microTask': 0, 'macroTask': 0,
'eventTask': 0 };\n this.zone = zone;\n this._parentDelegate = parentDelegate;\n this._forkZS =
zoneSpec && (zoneSpec && zoneSpec.onFork ? zoneSpec : parentDelegate._forkZS);\n this._forkDlgt =
zoneSpec && (zoneSpec.onFork ? parentDelegate : parentDelegate._forkDlgt);\n this._forkCurrZone =
zoneSpec && (zoneSpec.onFork ? this.zone : parentDelegate.zone);\n this._interceptZS =\n zoneSpec && (zoneSpec.onIntercept ? zoneSpec : parentDelegate._interceptZS);\n this._interceptDlgt =\n zoneSpec && (zoneSpec.onIntercept ? parentDelegate : parentDelegate._interceptDlgt);\n this._interceptCurrZone =\n zoneSpec && (zoneSpec.onIntercept ? this.zone : parentDelegate.zone);\n this._invokeZS = zoneSpec && (zoneSpec.onInvoke ? zoneSpec : parentDelegate._invokeZS);\n this._invokeDlgt =\n zoneSpec && (zoneSpec.onInvoke ? parentDelegate :
parentDelegate._invokeDlgt);\n this._invokeCurrZone = zoneSpec && (zoneSpec.onInvoke ? this.zone :
parentDelegate.zone);\n this._handleErrorZS =\n zoneSpec && (zoneSpec.onHandleError ?
zoneSpec : parentDelegate._handleErrorZS);\n this._handleErrorDlgt =\n zoneSpec &&
(zoneSpec.onHandleError ? parentDelegate : parentDelegate._handleErrorDlgt);\n this._handleErrorCurrZone
=\n zoneSpec && (zoneSpec.onHandleError ? this.zone : parentDelegate.zone);\n this._scheduleTaskZS =\n zoneSpec && (zoneSpec.onScheduleTask ? zoneSpec :
parentDelegate._scheduleTaskZS);\n this._scheduleTaskDlgt =\n zoneSpec &&
(zoneSpec.onScheduleTask ? parentDelegate : parentDelegate._scheduleTaskDlgt);\n this._scheduleTaskCurrZone =\n zoneSpec && (zoneSpec.onScheduleTask ? this.zone :
parentDelegate.zone);\n this._invokeTaskZS =\n zoneSpec && (zoneSpec.onInvokeTask ?
zoneSpec : parentDelegate._invokeTaskZS);\n this._invokeTaskDlgt =\n zoneSpec &&
(zoneSpec.onInvokeTask ? parentDelegate : parentDelegate._invokeTaskDlgt);\n this._invokeTaskCurrZone
=\n zoneSpec && (zoneSpec.onInvokeTask ? this.zone : parentDelegate.zone);\n this._cancelTaskZS =\n zoneSpec && (zoneSpec.onCancelTask ? zoneSpec :
parentDelegate._cancelTaskZS);\n this._cancelTaskDlgt =\n zoneSpec &&
(zoneSpec.onCancelTask ? parentDelegate : parentDelegate._cancelTaskDlgt);\n this._cancelTaskCurrZone
=\n zoneSpec && (zoneSpec.onCancelTask ? this.zone : parentDelegate.zone);\n this._hasTaskZS =
null;\n this._hasTaskDlgt = null;\n this._hasTaskDlgtOwner = null;\n this._hasTaskCurrZone =

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null;\n var zoneSpecHasTask = zoneSpec && zoneSpec.onHasTask;\n var parentHasTask =
parentDelegate && parentDelegate._hasTaskZS;\n if (zoneSpecHasTask || parentHasTask) {\n // If
we need to report hasTask, then this ZS needs to do ref counting on tasks. In such\n // a case all task related
interceptors must go through this ZD. We can't short circuit it.\n this._hasTaskZS = zoneSpecHasTask ?
zoneSpec : DELEGATE_ZS;\n this._hasTaskDlgt = parentDelegate;\n this._hasTaskDlgtOwner =
this;\n this._hasTaskCurrZone = zone;\n if (!zoneSpec.onScheduleTask) {\n
this._scheduleTaskZS = DELEGATE_ZS;\n this._scheduleTaskDlgt = parentDelegate;\n
this._scheduleTaskCurrZone = this.zone;\n }\n if (!zoneSpec.onInvokeTask) {\n
this._invokeTaskZS = DELEGATE_ZS;\n this._invokeTaskDlgt = parentDelegate;\n
this._invokeTaskCurrZone = this.zone;\n }\n if (!zoneSpec.onCancelTask) {\n
this._cancelTaskZS = DELEGATE_ZS;\n this._cancelTaskDlgt = parentDelegate;\n
this._cancelTaskCurrZone = this.zone;\n }\n }\n }\n ZoneDelegate.prototype.fork =
function (targetZone, zoneSpec) {\n return this._forkZS ? this._forkZS.onFork(this._forkDlgt, this.zone,
targetZone, zoneSpec) :\n new Zone(targetZone, zoneSpec);\n };\n
ZoneDelegate.prototype.intercept = function (targetZone, callback, source) {\n return this._interceptZS ?\n
this._interceptZS.onIntercept(this._interceptDlgt, this._interceptCurrZone, targetZone, callback, source) :\n
callback;\n };\n
ZoneDelegate.prototype.invoke = function (targetZone, callback, applyThis,
applyArgs, source) {\n return this._invokeZS ?\n
this._invokeZS.onInvoke(this._invokeDlgt,
this._invokeCurrZone, targetZone, callback, applyThis, applyArgs, source) :\n
callback.apply(applyThis,
applyArgs);\n };\n
ZoneDelegate.prototype.handleError = function (targetZone, error) {\n return
this._handleErrorZS ?\n
this._handleErrorZS.onHandleError(this._handleErrorDlgt,
this._handleErrorCurrZone, targetZone, error) :\n
true;\n };\n
ZoneDelegate.prototype.scheduleTask = function (targetZone, task) {\n var returnTask = task;\n if
(this._scheduleTaskZS) {\n if (this._hasTaskZS) {\n
returnTask._zoneDelegates.push(this._hasTaskDlgtOwner);\n }\n returnTask =
this._scheduleTaskZS.onScheduleTask(this._scheduleTaskDlgt, this._scheduleTaskCurrZone, targetZone, task);\n
if (!returnTask)\n returnTask = task;\n }\n else {\n if (task.scheduleFn) {\n
task.scheduleFn(task);\n }\n else if (task.type == microTask) {\n
scheduleMicroTask(task);\n }\n else {\n throw new Error('Task is missing
scheduleFn.);\n }\n }\n return returnTask;\n };\n
ZoneDelegate.prototype.invokeTask = function (targetZone, task, applyThis, applyArgs) {\n return
this._invokeTaskZS ?\n
this._invokeTaskZS.onInvokeTask(this._invokeTaskDlgt,
this._invokeTaskCurrZone, targetZone, task, applyThis, applyArgs) :\n
task.callback.apply(applyThis,
applyArgs);\n };\n
ZoneDelegate.prototype.cancelTask = function (targetZone, task) {\n var value;\n
if (this._cancelTaskZS) {\n value = this._cancelTaskZS.onCancelTask(this._cancelTaskDlgt,
this._cancelTaskCurrZone, targetZone, task);\n }\n else {\n if (!task.cancelFn) {\n
throw Error('Task is not cancelable');\n }\n value = task.cancelFn(task);\n }\n return
value;\n };\n
ZoneDelegate.prototype.hasTask = function (targetZone, isEmpty) {\n // hasTask
should not throw error so other ZoneDelegate\n // can still trigger hasTask callback\n try {\n
return this._hasTaskZS &&\n
this._hasTaskZS.onHasTask(this._hasTaskDlgt, this._hasTaskCurrZone,
targetZone, isEmpty);\n }\n catch (err) {\n this.handleError(targetZone, err);\n }\n
};\n
ZoneDelegate.prototype._updateTaskCount = function (type, count) {\n var counts =
this._taskCounts;\n var prev = counts[type];\n var next = counts[type] = prev + count;\n if (next
< 0) {\n throw new Error('More tasks executed then were scheduled.);\n }\n if (prev == 0 ||
next == 0) {\n var isEmpty = {\n microTask: counts['microTask'] > 0,\n
macroTask: counts['macroTask'] > 0,\n eventTask: counts['eventTask'] > 0,\n change: type\n
};\n this.hasTask(this.zone, isEmpty);\n }\n };\n return ZoneDelegate;\n }());\n
var ZoneTask = /** @class */ (function () {\n function ZoneTask(type, source, callback, options, scheduleFn,

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'running', canceling = 'canceling', unknown = 'unknown';\n var microTask = 'microTask', macroTask =
'macroTask', eventTask = 'eventTask';\n var patches = {};\n var _api = {\n symbol: __symbol__,\n currentZoneFrame: function () { return _currentZoneFrame; },\n onUnhandledError: noop,\n microtaskDrainDone: noop,\n scheduleMicroTask: scheduleMicroTask,\n showUncaughtError: function ()
{ return !Zone[__symbol__]('ignoreConsoleErrorUncaughtError'); },\n patchEventTarget: function () { return
[]; },\n patchOnProperties: noop,\n patchMethod: function () { return noop; },\n bindArguments:
function () { return null; },\n setNativePromise: function (NativePromise) {\n // sometimes
NativePromise.resolve static function\n // is not ready yet, (such as core-js/es6.promise)\n // so we
need to check here.\n if (NativePromise && typeof NativePromise.resolve === FUNCTION) {\n
nativeMicroTaskQueuePromise = NativePromise.resolve(0);\n }\n },\n }; \n var _currentZoneFrame =
{ parent: null, zone: new Zone(null, null) };\n var _currentTask = null;\n var _numberOfNestedTaskFrames =
0;\n function noop() { }\n function __symbol__(name) {\n return '__zone_symbol__' + name;\n }\n performanceMeasure('Zone', 'Zone');\n return global['Zone'] = Zone;\n})(typeof window !== 'undefined' &&
window || typeof self !== 'undefined' && self || global);\n\nZone.__load_patch('ZoneAwarePromise', function
(global, Zone, api) {\n var ObjectGetOwnPropertyDescriptor = Object.getOwnPropertyDescriptor;\n var
ObjectDefineProperty = Object.defineProperty;\n function readableObjectToString(obj) {\n if (obj &&
obj.toString === Object.prototype.toString) {\n var className = obj.constructor && obj.constructor.name;\n
 return (className ? className : '') + ': ' + JSON.stringify(obj);\n }\n return obj ? obj.toString() :
Object.prototype.toString.call(obj);\n }\n var __symbol__ = api.symbol;\n var _uncaughtPromiseErrors = [];\n
var symbolPromise = __symbol__('Promise');\n var symbolThen = __symbol__('then');\n var creationTrace =
'__creationTrace__';\n api.onUnhandledError = function (e) {\n if (api.showUncaughtError()) {\n var
rejection = e && e.rejection;\n if (rejection) {\n console.error('Unhandled Promise rejection:',
rejection instanceof Error ? rejection.message : rejection, '; Zone:', e.zone.name, '; Task:', e.task && e.task.source,
'; Value:', rejection, rejection instanceof Error ? rejection.stack : undefined);\n }\n else {\n
console.error(e);\n }\n }\n };\n api.microtaskDrainDone = function () {\n while
(_uncaughtPromiseErrors.length) {\n var _loop_1 = function () {\n var uncaughtPromiseError =
_uncaughtPromiseErrors.shift();\n try {\n uncaughtPromiseError.zone.runGuarded(function ()
{\n throw uncaughtPromiseError;\n });\n }\n catch (error) {\n
handleUnhandledRejection(error);\n }\n }; \n while (_uncaughtPromiseErrors.length) {\n
 _loop_1();\n }\n }\n };\n var UNHANDLED_PROMISE_REJECTION_HANDLER_SYMBOL =
__symbol__('unhandledPromiseRejectionHandler');\n function handleUnhandledRejection(e) {\n
api.onUnhandledError(e);\n try {\n var handler =
Zone[UNHANDLED_PROMISE_REJECTION_HANDLER_SYMBOL];\n if (handler && typeof handler
=== 'function') {\n handler.call(this, e);\n }\n }\n catch (err) {\n }\n }\n function
isThenable(value) {\n return value && value.then;\n }\n function forwardResolution(value) {\n return
value;\n }\n function forwardRejection(rejection) {\n return ZoneAwarePromise.reject(rejection);\n }\n
var symbolState = __symbol__('state');\n var symbolValue = __symbol__('value');\n var symbolFinally =
__symbol__('finally');\n var symbolParentPromiseValue = __symbol__('parentPromiseValue');\n var
symbolParentPromiseState = __symbol__('parentPromiseState');\n var source = 'Promise.then';\n var
UNRESOLVED = null;\n var RESOLVED = true;\n var REJECTED = false;\n var REJECTED_NO_CATCH =
0;\n function makeResolver(promise, state) {\n return function (v) {\n try {\n
resolvePromise(promise, state, v);\n }\n catch (err) {\n resolvePromise(promise, false, err);\n
 }\n // Do not return value or you will break the Promise spec.\n };\n }\n var once = function ()
{\n var wasCalled = false;\n return function wrapper(wrapperFunction) {\n return function () {\n
 if (wasCalled) {\n return;\n }\n wasCalled = true;\n
 wrapperFunction.apply(null, arguments);\n };\n };\n };\n var TYPE_ERROR = 'Promise resolved
with itself';\n var CURRENT_TASK_TRACE_SYMBOL = __symbol__('currentTaskTrace');\n // Promise
Resolution\n function resolvePromise(promise, state, value) {\n var onceWrapper = once();\n if (promise

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=== value) {\n throw new TypeError(TYPE_ERROR);\n }\n if (promise[symbolState] ===
UNRESOLVED) {\n // should only get value.then once based on promise spec.\n var then = null;\n try {\n if (typeof value === 'object' || typeof value === 'function') {\n then = value &&
value.then;\n }\n } catch (err) {\n onceWrapper(function () {\n
resolvePromise(promise, false, err);\n });\n return promise;\n }\n // if (value
instanceof ZoneAwarePromise) {\n if (state !== REJECTED && value instanceof ZoneAwarePromise &&\n
value.hasOwnProperty(symbolState) && value.hasOwnProperty(symbolValue) &&\n
value[symbolState] !== UNRESOLVED) {\n clearRejectedNoCatch(value);\n
resolvePromise(promise, value[symbolState], value[symbolValue]);\n }\n else if (state !==
REJECTED && typeof then === 'function') {\n try {\n then.call(value,
onceWrapper(makeResolver(promise, state)), onceWrapper(makeResolver(promise, false)));;\n }\n
catch (err) {\n onceWrapper(function () {\n resolvePromise(promise, false, err);\n
 });\n }\n } else {\n promise[symbolState] = state;\n var queue =
promise[symbolValue];\n promise[symbolValue] = value;\n if (promise[symbolFinally] ===
symbolFinally) {\n // the promise is generated by Promise.prototype.finally\n if (state
=== RESOLVED) {\n // the state is resolved, should ignore the value\n // and use
parent promise value\n promise[symbolState] = promise[symbolParentPromiseState];\n
promise[symbolValue] = promise[symbolParentPromiseValue];\n }\n }\n // record
task information in value when error occurs, so we can\n // do some additional work such as render
longStackTrace\n if (state === REJECTED && value instanceof Error) {\n // check if
longStackTraceZone is here\n var trace = Zone.currentTask && Zone.currentTask.data &&\n
Zone.currentTask.data[creationTrace];\n if (trace) {\n // only keep the long stack trace
into error when in longStackTraceZone\n Object.defineProperty(value,
CURRENT_TASK_TRACE_SYMBOL, { configurable: true, enumerable: false, writable: true, value: trace });\n
 }\n }\n for (var i = 0; i < queue.length;) {\n
scheduleResolveOrReject(promise, queue[i++], queue[i++], queue[i++], queue[i++]);\n }\n if
(queue.length === 0 && state === REJECTED) {\n promise[symbolState] = REJECTED_NO_CATCH;\n
 try {\n // try to print more readable error log\n throw new Error('Uncaught (in
promise): ' + readableObjectToString(value) +\n (value && value.stack ? '\n' + value.stack : ''));\n
 } catch (err) {\n var error_1 = err;\n error_1.rejection = value;\n
 error_1.promise = promise;\n error_1.zone = Zone.current;\n error_1.task
= Zone.currentTask;\n _uncaughtPromiseErrors.push(error_1);\n
api.scheduleMicroTask(); // to make sure that it is running\n }\n }\n }\n }\n //
Resolving an already resolved promise is a noop.\n return promise;\n }\n var
REJECTION_HANDLED_HANDLER = __symbol__('rejectionHandledHandler');\n function
clearRejectedNoCatch(promise) {\n if (promise[symbolState] === REJECTED_NO_CATCH) {\n // if
the promise is rejected no catch status\n // and queue.length > 0, means there is a error handler\n //
here to handle the rejected promise, we should trigger\n // windows.rejectionhandled eventHandler or nodejs
rejectionHandled\n // eventHandler\n try {\n var handler =
Zone[REJECTION_HANDLED_HANDLER];\n if (handler && typeof handler === 'function') {\n
 handler.call(this, { rejection: promise[symbolValue], promise: promise });\n }\n } catch
(err) {\n }\n promise[symbolState] = REJECTED;\n for (var i = 0; i <
_uncaughtPromiseErrors.length; i++) {\n if (promise === _uncaughtPromiseErrors[i].promise) {\n
 _uncaughtPromiseErrors.splice(i, 1);\n }\n }\n }\n }\n function
scheduleResolveOrReject(promise, zone, chainPromise, onFulfilled, onRejected) {\n
clearRejectedNoCatch(promise);\n var promiseState = promise[symbolState];\n var delegate = promiseState
? (typeof onFulfilled === 'function') ? onFulfilled : forwardResolution : (typeof onRejected ===
'function') ? onRejected : forwardRejection;\n zone.scheduleMicroTask(source, function () {\n try {\n

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 var parentPromiseValue = promise[symbolValue];\n var isFinallyPromise = chainPromise &&
symbolFinally === chainPromise[symbolFinally];\n if (isFinallyPromise) {\n // if the promise
is generated from finally call, keep parent promise's state and value\n
chainPromise[symbolParentPromiseValue] = parentPromiseValue;\n
chainPromise[symbolParentPromiseState] = promiseState;\n }\n // should not pass value to finally
callback\n var value = zone.run(delegate, undefined, isFinallyPromise && delegate !== forwardRejection
&& delegate !== forwardResolution ? [] : [parentPromiseValue]);\n resolvePromise(chainPromise, true,
value);\n }\n catch (error) {\n // if error occurs, should always return this error\n
resolvePromise(chainPromise, false, error);\n }\n }, chainPromise);\n }\n var
ZONE_AWARE_PROMISE_TO_STRING = 'function ZoneAwarePromise() { [native code] }';\n var
ZoneAwarePromise = /** @class */ (function () {\n function ZoneAwarePromise(executor) {\n var
promise = this;\n if (!(promise instanceof ZoneAwarePromise)) {\n throw new Error('Must be an
instanceof Promise.);\n }\n promise[symbolState] = UNRESOLVED;\n promise[symbolValue]
= []; // queue;\n try {\n executor && executor(makeResolver(promise, RESOLVED),
makeResolver(promise, REJECTED));\n }\n catch (error) {\n resolvePromise(promise, false,
error);\n }\n }\n ZoneAwarePromise.toString = function () {\n return
ZONE_AWARE_PROMISE_TO_STRING;\n };\n ZoneAwarePromise.resolve = function (value) {\n
return resolvePromise(new this(null), RESOLVED, value);\n };\n ZoneAwarePromise.reject = function
(error) {\n return resolvePromise(new this(null), REJECTED, error);\n };\n ZoneAwarePromise.race
= function (values) {\n var resolve;\n var reject;\n var promise = new this(function (res, rej) {\n
 resolve = res;\n reject = rej;\n });\n function onResolve(value) {\n promise
&& (promise = null || resolve(value));\n }\n function onReject(error) {\n promise &&
(promise = null || reject(error));\n }\n for (var _i = 0, values_1 = values; _i < values_1.length; _i++) {\n
 var value = values_1[_i];\n if (!isThenable(value)) {\n value = this.resolve(value);\n
 }\n value.then(onResolve, onReject);\n }\n return promise;\n };\n
ZoneAwarePromise.all = function (values) {\n var resolve;\n var reject;\n var promise = new
this(function (res, rej) {\n resolve = res;\n reject = rej;\n });\n var count = 0;\n
var resolvedValues = [];\n for (var _i = 0, values_2 = values; _i < values_2.length; _i++) {\n var
value = values_2[_i];\n if (!isThenable(value)) {\n value = this.resolve(value);\n }\n
 value.then((function (index) { return function (value) {\n resolvedValues[index] = value;\n
 count--;\n if (!count) {\n resolve(resolvedValues);\n }\n
 }))(count), reject);\n count++;\n }\n if (!count)\n resolve(resolvedValues);\n return promise;\n };\n ZoneAwarePromise.prototype.then = function (onFulfilled, onRejected) {\n
var chainPromise = new this.constructor(null);\n var zone = Zone.current;\n if (this[symbolState] ===
UNRESOLVED) {\n this[symbolValue].push(zone, chainPromise, onFulfilled, onRejected);\n }\n
 else {\n scheduleResolveOrReject(this, zone, chainPromise, onFulfilled, onRejected);\n }\n
 return chainPromise;\n };\n ZoneAwarePromise.prototype.catch = function (onRejected) {\n return
this.then(null, onRejected);\n };\n ZoneAwarePromise.prototype.finally = function (onFinally) {\n
var chainPromise = new this.constructor(null);\n chainPromise[symbolFinally] = symbolFinally;\n var
zone = Zone.current;\n if (this[symbolState] === UNRESOLVED) {\n this[symbolValue].push(zone,
chainPromise, onFinally, onFinally);\n }\n else {\n scheduleResolveOrReject(this, zone,
chainPromise, onFinally, onFinally);\n }\n return chainPromise;\n };\n return
ZoneAwarePromise;\n }());\n // Protect against aggressive optimizers dropping seemingly unused properties.\n
// E.g. Closure Compiler in advanced mode.\n ZoneAwarePromise['resolve'] = ZoneAwarePromise.resolve;\n
ZoneAwarePromise['reject'] = ZoneAwarePromise.reject;\n ZoneAwarePromise['race'] =
ZoneAwarePromise.race;\n ZoneAwarePromise['all'] = ZoneAwarePromise.all;\n var NativePromise =
global[symbolPromise] = global['Promise'];\n var ZONE_AWARE_PROMISE =
Zone.__symbol__('ZoneAwarePromise');\n var desc = Object.getOwnPropertyDescriptor(global, 'Promise');\n if

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!=='undefined';\nvar internalWindow = isWindowExists ? window : undefined;\nvar _global = isWindowExists &&
internalWindow || typeof self === 'object' && self || global;\nvar REMOVE_ATTRIBUTE = 'removeAttribute';\nvar
NULL_ON_PROP_VALUE = [null];\nfunction bindArguments(args, source) {\n for (var i = args.length - 1; i >=
0; i--) {\n if (typeof args[i] === 'function') {\n args[i] = wrapWithCurrentZone(args[i], source + '_' + i);\n }\n }\n return args;\n}\nfunction patchPrototype(prototype, fnNames) {\n var source =
prototype.constructor['name'];\n var _loop_1 = function (i) {\n var name_1 = fnNames[i];\n var delegate =
prototype[name_1];\n if (delegate) {\n var prototypeDesc = ObjectGetOwnPropertyDescriptor(prototype,
name_1);\n if (!isPropertyWritable(prototypeDesc)) {\n return \"continue\";\n }\n prototype[name_1] = (function (delegate) {\n var patched = function () {\n return
delegate.apply(this, bindArguments(arguments, source + '.' + name_1));\n };\n delegate.apply(this, bindArguments(arguments, source + '.' + name_1));\n }\n })(delegate);\n }\n }; \n for
(var i = 0; i < fnNames.length; i++) {\n _loop_1(i);\n }\n}\nfunction isPropertyWritable(propertyDesc) {\n
if (!propertyDesc) {\n return true;\n }\n if (propertyDesc.writable === false) {\n return false;\n }\n
return !(typeof propertyDesc.get === 'function' && typeof propertyDesc.set === 'undefined');\n}\nvar isWebWorker
= (typeof WorkerGlobalScope !== 'undefined' && self instanceof WorkerGlobalScope);\n// Make sure to access
`process` through `_global` so that WebPack does not accidentally browserify\n// this code.\nvar isNode = (!('nw' in
_global) && typeof _global.process !== 'undefined' &&\n {}).toString.call(_global.process) === '[object
process]');\nvar isBrowser = !isNode && !isWebWorker && !(isWindowExists &&
internalWindow['HTMLElement']);\n// we are in electron or nw, so we are both browser and nodejs\n// Make sure to
access `process` through `_global` so that WebPack does not accidentally browserify\n// this code.\nvar isMix =
typeof _global.process !== 'undefined' &&\n {}).toString.call(_global.process) === '[object process]' &&
!isWebWorker &&\n !(isWindowExists && internalWindow['HTMLElement']);\nvar zoneSymbolEventNames =
{};\nvar wrapFn = function (event) {\n // https://github.com/angular/zone.js/issues/911, in IE, sometimes\n //
event will be undefined, so we need to use window.event\n event = event || _global.event;\n if (!event) {\n
return;\n }\n var eventNameSymbol = zoneSymbolEventNames[event.type];\n if (!eventNameSymbol) {\n
eventNameSymbol = zoneSymbolEventNames[event.type] = zoneSymbol('ON_' + event.type);\n }\n var target = this || event.target || _global;\n var listener = target[eventNameSymbol];\n var result = listener &&
listener.apply(this, arguments);\n if (result !== undefined && !result) {\n event.preventDefault();\n }\n
return result;\n};\nfunction patchProperty(obj, prop, prototype) {\n var desc =
ObjectGetOwnPropertyDescriptor(obj, prop);\n if (!desc && prototype) {\n // when patch window object, use
prototype to check prop exist or not\n var prototypeDesc = ObjectGetOwnPropertyDescriptor(prototype,
prop);\n if (prototypeDesc) {\n desc = { enumerable: true, configurable: true }; \n } \n } \n // if the
descriptor not exists or is not configurable\n // just return\n if (!desc || !desc.configurable) {\n return;\n }\n
// A property descriptor cannot have getter/setter and be writable\n // deleting the writable and value properties
avoids this error:\n // TypeError: property descriptors must not specify a value or be writable when a\n //
getter or setter has been specified\n delete desc.writable;\n delete desc.value;\n var originalDescGet =
desc.get;\n var originalDescSet = desc.set;\n // substr(2) cuz 'onclick' -> 'click', etc\n var eventName =
prop.substr(2);\n var eventNameSymbol = zoneSymbolEventNames[eventName];\n if (!eventNameSymbol) {\n
eventNameSymbol = zoneSymbolEventNames[eventName] = zoneSymbol('ON_' + eventName);\n }\n desc.set = function (newValue) {\n // in some of windows's onproperty callback, this is undefined\n //
so we need to check it\n var target = this;\n if (!target && obj === _global) {\n target = _global;\n }\n if (!target) {\n return;\n }\n var previousValue = target[eventNameSymbol];\n if
(previousValue) {\n target.removeEventListener(eventName, wrapFn);\n } \n // issue #978, when
onload handler was added before loading zone.js\n // we should remove it with originalDescSet\n if
(originalDescSet) {\n originalDescSet.apply(target, NULL_ON_PROP_VALUE);\n } \n if (typeof
newValue === 'function') {\n target[eventNameSymbol] = newValue;\n target.addEventListener(eventName, wrapFn, false);\n } \n else {\n target[eventNameSymbol] =
null;\n } \n }; \n // The getter would return undefined for unassigned properties but the default value of an

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PREPEND_EVENT_LISTENER = 'prependListener';\n var PREPEND_EVENT_LISTENER_SOURCE = '! +
PREPEND_EVENT_LISTENER + ':';\n var invokeTask = function (task, target, event) {\n // for better
performance, check isRemoved which is set\n // by removeEventListener\n if (task.isRemoved) {\n
return;\n }\n var delegate = task.callback;\n if (typeof delegate === 'object' && delegate.handleEvent)
{\n // create the bind version of handleEvent when invoke\n task.callback = function (event) { return
delegate.handleEvent(event); };\n task.originalDelegate = delegate;\n }\n // invoke static
task.invoke\n task.invoke(task, target, [event]);\n var options = task.options;\n if (options && typeof
options === 'object' && options.once) {\n // if options.once is true, after invoke once remove listener here\n
// only browser need to do this, nodejs EventEmitter will call removeListener\n // inside
EventEmitter.once\n var delegate_1 = task.originalDelegate ? task.originalDelegate : task.callback;\n
target[REMOVE_EVENT_LISTENER].call(target, event.type, delegate_1, options);\n }\n };\n // global
shared zoneAwareCallback to handle all event callback with capture = false\n var globalZoneAwareCallback =
function (event) {\n // https://github.com/angular/zone.js/issues/911, in IE, sometimes\n // event will be
undefined, so we need to use window.event\n event = event || _global.event;\n if (!event) {\n
return;\n }\n // event.target is needed for Samsung TV and SourceBuffer\n // || global is needed
https://github.com/angular/zone.js/issues/190\n var target = this || event.target || _global;\n var tasks =
target[zoneSymbolEventNames$1[event.type][FALSE_STR]];\n if (tasks) {\n // invoke all tasks which
attached to current target with given event.type and capture = false\n // for performance concern, if
task.length === 1, just invoke\n if (tasks.length === 1) {\n invokeTask(tasks[0], target, event);\n
}\n else {\n // https://github.com/angular/zone.js/issues/836\n // copy the tasks array
before invoke, to avoid\n // the callback will remove itself or other listener\n var copyTasks =
tasks.slice();\n for (var i = 0; i < copyTasks.length; i++) {\n if (event &&
event[IMMEDIATE_PROPAGATION_SYMBOL] === true) {\n break;\n }\n invokeTask(copyTasks[i], target, event);\n }\n }\n }\n };\n // global shared
zoneAwareCallback to handle all event callback with capture = true\n var globalZoneAwareCaptureCallback =
function (event) {\n // https://github.com/angular/zone.js/issues/911, in IE, sometimes\n // event will be
undefined, so we need to use window.event\n event = event || _global.event;\n if (!event) {\n
return;\n }\n // event.target is needed for Samsung TV and SourceBuffer\n // || global is needed
https://github.com/angular/zone.js/issues/190\n var target = this || event.target || _global;\n var tasks =
target[zoneSymbolEventNames$1[event.type][TRUE_STR]];\n if (tasks) {\n // invoke all tasks which
attached to current target with given event.type and capture = false\n // for performance concern, if
task.length === 1, just invoke\n if (tasks.length === 1) {\n invokeTask(tasks[0], target, event);\n
}\n else {\n // https://github.com/angular/zone.js/issues/836\n // copy the tasks array
before invoke, to avoid\n // the callback will remove itself or other listener\n var copyTasks =
tasks.slice();\n for (var i = 0; i < copyTasks.length; i++) {\n if (event &&
event[IMMEDIATE_PROPAGATION_SYMBOL] === true) {\n break;\n }\n invokeTask(copyTasks[i], target, event);\n }\n }\n }\n };\n function
patchEventTargetMethods(obj, patchOptions) {\n if (!obj) {\n return false;\n }\n var
useGlobalCallback = true;\n if (patchOptions && patchOptions.useG !== undefined) {\n
useGlobalCallback = patchOptions.useG;\n }\n var validateHandler = patchOptions && patchOptions.vh;\n
var checkDuplicate = true;\n if (patchOptions && patchOptions.chkDup !== undefined) {\n
checkDuplicate = patchOptions.chkDup;\n }\n var returnTarget = false;\n if (patchOptions &&
patchOptions.rt !== undefined) {\n returnTarget = patchOptions.rt;\n }\n var proto = obj;\n
while (proto && !proto.hasOwnProperty(ADD_EVENT_LISTENER)) {\n proto =
ObjectGetPrototypeOf(proto);\n }\n if (!proto && obj[ADD_EVENT_LISTENER]) {\n // somehow
we did not find it, but we can see it. This happens on IE for Window properties.\n proto = obj;\n }\n
if (!proto) {\n return false;\n }\n if (proto[zoneSymbolAddEventListener]) {\n return false;\n
}\n // a shared global taskData to pass data for scheduleEventTask\n // so we do not need to create a new

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 isHandleEvent = true;\n }\n if (validateHandler && !validateHandler(nativeListener,
delegate, target, arguments)) {\n return;\n }\n var eventName = arguments[0];\n var options = arguments[2];\n if (blackListedEvents) {\n // check black list\n for
(var i = 0; i < blackListedEvents.length; i++) {\n if (eventName === blackListedEvents[i]) {\n
return nativeListener.apply(this, arguments);\n }\n }\n }\n var
capture;\n var once = false;\n if (options === undefined) {\n capture = false;\n
}\n else if (options === true) {\n capture = true;\n }\n else if (options ===
false) {\n capture = false;\n }\n else {\n capture = options ?
!!options.capture : false;\n once = options ? !!options.once : false;\n }\n var zone =
Zone.current;\n var symbolEventNames = zone.symbolEventNames$1[eventName];\n var
symbolEventName;\n if (!symbolEventNames) {\n // the code is duplicate, but I just want to
get some better performance\n var falseEventName = eventName + FALSE_STR;\n var
trueEventName = eventName + TRUE_STR;\n var symbol = ZONE_SYMBOL_PREFIX +
falseEventName;\n var symbolCapture = ZONE_SYMBOL_PREFIX + trueEventName;\n
zone.symbolEventNames$1[eventName] = {};\n zone.symbolEventNames$1[eventName][FALSE_STR]
= symbol;\n zone.symbolEventNames$1[eventName][TRUE_STR] = symbolCapture;\n
symbolEventName = capture ? symbolCapture : symbol;\n }\n else {\n
symbolEventName = symbolEventNames[capture ? TRUE_STR : FALSE_STR];\n }\n var
existingTasks = target[symbolEventName];\n var isExisting = false;\n if (existingTasks) {\n
// already have task registered\n isExisting = true;\n if (checkDuplicate) {\n
for (var i = 0; i < existingTasks.length; i++) {\n if (compare(existingTasks[i], delegate)) {\n
// same callback, same capture, same event name, just return\n return;\n
}\n }\n }\n else {\n existingTasks =
target[symbolEventName] = [];\n }\n var source;\n var constructorName =
target.constructor['name'];\n var targetSource = globalSources[constructorName];\n if
(targetSource) {\n source = targetSource[eventName];\n }\n if (!source) {\n
source = constructorName + addSource + eventName;\n }\n // do not create a new object as
task.data to pass those things\n // just use the global shared one\n taskData.options = options;\n
if (once) {\n // if addEventListener with once options, we don't pass it to\n // native
addEventListener, instead we keep the once setting\n // and handle ourselves.\n
taskData.options.once = false;\n }\n taskData.target = target;\n taskData.capture =
capture;\n taskData.eventName = eventName;\n taskData.isExisting = isExisting;\n var
data = useGlobalCallback ? OPTIMIZED_ZONE_EVENT_TASK_DATA : null;\n // keep taskData into
data to allow onScheduleEventTask to access the task information\n if (data) {\n data.taskData
= taskData;\n }\n var task = zone.scheduleEventTask(source, delegate, data, customScheduleFn,
customCancelFn);\n // should clear taskData.target to avoid memory leak\n // issue,
https://github.com/angular/angular/issues/20442\n taskData.target = null;\n // need to clear up
taskData because it is a global object\n if (data) {\n data.taskData = null;\n }\n
// have to save those information to task in case\n // application may call task.zone.cancelTask() directly\n
if (once) {\n options.once = true;\n }\n task.options = options;\n
task.target = target;\n task.capture = capture;\n task.eventName = eventName;\n if
(isHandleEvent) {\n // save original delegate for compare to check duplicate\n
task.originalDelegate = delegate;\n }\n if (!prepend) {\n existingTasks.push(task);\n
}\n else {\n existingTasks.unshift(task);\n }\n if (returnTarget) {\n
return target;\n }\n };\n };\n proto[ADD_EVENT_LISTENER] =
makeAddListener(nativeAddEventListener, ADD_EVENT_LISTENER_SOURCE, customSchedule,
customCancel, returnTarget);\n if (nativePrependEventListener) {\n
proto[PREPEND_EVENT_LISTENER] = makeAddListener(nativePrependEventListener,

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PREPEND_EVENT_LISTENER_SOURCE, customSchedulePrepend, customCancel, returnTarget, true);\n }\n proto[REMOVE_EVENT_LISTENER] = function () {\n var target = this || _global;\n var\n eventName = arguments[0];\n var options = arguments[2];\n var capture;\n if (options ===\n undefined) {\n capture = false;\n }\n else if (options === true) {\n capture = true;\n }\n else if (options === false) {\n capture = false;\n }\n else {\n capture\n = options ? !!options.capture : false;\n }\n var delegate = arguments[1];\n if (!delegate) {\n return nativeRemoveEventListener.apply(this, arguments);\n }\n if (validateHandler &&\n !validateHandler(nativeRemoveEventListener, delegate, target, arguments)) {\n return;\n }\n var symbolEventNames = zoneSymbolEventNames$1[eventName];\n var symbolEventName;\n if\n (symbolEventNames) {\n symbolEventName = symbolEventNames[capture ? TRUE_STR :\n FALSE_STR];\n }\n var existingTasks = symbolEventName && target[symbolEventName];\n if\n (existingTasks) {\n for (var i = 0; i < existingTasks.length; i++) {\n var existingTask =\n existingTasks[i];\n if (compare(existingTask, delegate)) {\n existingTasks.splice(i, 1);\n // set isRemoved to data for faster invokeTask check\n existingTask.isRemoved = true;\n if (existingTasks.length === 0) {\n // all tasks for the eventName + capture have\n gone,\n // remove globalZoneAwareCallback and remove the task cache from target\n existingTask.allRemoved = true;\n target[symbolEventName] = null;\n }\n existingTask.zone.cancelTask(existingTask);\n if (returnTarget) {\n return\n target;\n }\n return;\n }\n }\n }\n // issue 930, didn't\n find the event name or callback\n // from zone kept existingTasks, the callback maybe\n // added\n outside of zone, we need to call native removeEventListener\n // to try to remove it.\n return\n nativeRemoveEventListener.apply(this, arguments);\n };\n proto[LISTENERS_EVENT_LISTENER] =\n function () {\n var target = this || _global;\n var eventName = arguments[0];\n var listeners =\n [];\n var tasks = findEventTasks(target, eventName);\n for (var i = 0; i < tasks.length; i++) {\n var task = tasks[i];\n var delegate = task.originalDelegate ? task.originalDelegate : task.callback;\n listeners.push(delegate);\n }\n return listeners;\n };\n proto[REMOVE_ALL_LISTENERS_EVENT_LISTENER] = function () {\n var target = this || _global;\n var eventName = arguments[0];\n if (!eventName) {\n var keys = Object.keys(target);\n for (var i = 0; i < keys.length; i++) {\n var prop = keys[i];\n var match =\n EVENT_NAME_SYMBOL_REGX.exec(prop);\n var evtName = match && match[1];\n //\n in nodejs EventEmitter, removeListener event is\n // used for monitoring the removeListener call,\n // so just keep removeListener eventListener until\n // all other eventListeners are removed\n if (evtName && evtName !== 'removeListener') {\n this[REMOVE_ALL_LISTENERS_EVENT_LISTENER].call(this, evtName);\n }\n // remove removeListener listener finally\n this[REMOVE_ALL_LISTENERS_EVENT_LISTENER].call(this, 'removeListener');\n }\n else {\n var symbolEventNames = zoneSymbolEventNames$1[eventName];\n if (symbolEventNames) {\n var symbolEventName = symbolEventNames[FALSE_STR];\n var symbolCaptureEventName\n = symbolEventNames[TRUE_STR];\n var tasks = target[symbolEventName];\n var\n captureTasks = target[symbolCaptureEventName];\n if (tasks) {\n var removeTasks =\n tasks.slice();\n for (var i = 0; i < removeTasks.length; i++) {\n var task =\n removeTasks[i];\n var delegate = task.originalDelegate ? task.originalDelegate : task.callback;\n this[REMOVE_EVENT_LISTENER].call(this, eventName, delegate, task.options);\n }\n }\n if (captureTasks) {\n var removeTasks = captureTasks.slice();\n for (var i = 0; i < removeTasks.length; i++) {\n var task = removeTasks[i];\n var\n delegate = task.originalDelegate ? task.originalDelegate : task.callback;\n this[REMOVE_EVENT_LISTENER].call(this, eventName, delegate, task.options);\n }\n }\n }\n }\n if (returnTarget) {\n return this;\n }\n };\n // for native

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toString patch\n attachOriginToPatched(proto[ADD_EVENT_LISTENER], nativeAddEventListener);\n
attachOriginToPatched(proto[REMOVE_EVENT_LISTENER], nativeRemoveEventListener);\n if
(nativeRemoveAllListeners) {\n
attachOriginToPatched(proto[REMOVE_ALL_LISTENERS_EVENT_LISTENER], nativeRemoveAllListeners);\n
 }\n if (nativeListeners) {\n attachOriginToPatched(proto[LISTENERS_EVENT_LISTENER],
nativeListeners);\n }\n return true;\n }\n var results = [];\n for (var i = 0; i < apis.length; i++) {\n
results[i] = patchEventTargetMethods(apis[i], patchOptions);\n }\n return results;\n}\nfunction
findEventTasks(target, eventName) {\n var foundTasks = [];\n for (var prop in target) {\n var match =
EVENT_NAME_SYMBOL_REGX.exec(prop);\n var evtName = match && match[1];\n if (evtName &&
(!eventName || evtName === eventName)) {\n var tasks = target[prop];\n if (tasks) {\n for
(var i = 0; i < tasks.length; i++) {\n foundTasks.push(tasks[i]);\n }\n }\n }\n }\n return foundTasks;\n}\nfunction patchEventPrototype(global, api) {\n var Event = global['Event'];\n if (Event
&& Event.prototype) {\n api.patchMethod(Event.prototype, 'stopImmediatePropagation', function (delegate) {\n
return function (self, args) {\n self[IMMEDIATE_PROPAGATION_SYMBOL] = true;\n // we need
to call the native stopImmediatePropagation\n // in case in some hybrid application, some part of\n //
application will be controlled by zone, some are not\n delegate && delegate.apply(self, args);\n }; });\n }\n}\n\n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is
governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n**\n * @fileoverview\n * @suppress {missingRequire}\n */\nvar taskSymbol = zoneSymbol('zoneTask');\nfunction
patchTimer(window, setName, cancelName, nameSuffix) {\n var setNative = null;\n var clearNative = null;\n
setName += nameSuffix;\n cancelName += nameSuffix;\n var tasksByHandleId = {};\n function
scheduleTask(task) {\n var data = task.data;\n function timer() {\n try {\n
task.invoke.apply(this, arguments);\n }\n finally {\n // issue-934, task will be cancelled\n
// even it is a periodic task such as\n // setInterval\n if (!(task.data && task.data.isPeriodic))\n {\n if (typeof data.handleId === 'number') {\n // in non-nodejs env, we remove timerId\n
// from local cache\n delete tasksByHandleId[data.handleId];\n }\n }\n else if (data.handleId) {\n // Node returns complex objects as handleIds\n // we remove
task reference from timer object\n data.handleId[taskSymbol] = null;\n }\n }\n }\n data.args[0] = timer;\n data.handleId = setNative.apply(window, data.args);\n return
task;\n }\n function clearTask(task) {\n return clearNative(task.data.handleId);\n }\n setNative =\n patchMethod(window, setName, function (delegate) {\n return function (self, args) {\n if (typeof args[0] ===
'function') {\n var options = {\n handleId: null,\n isPeriodic: nameSuffix ===
'Interval',\n delay: (nameSuffix === 'Timeout' || nameSuffix === 'Interval') ? args[1] || 0 : null,\n
args: args\n };\n var task = scheduleMacroTaskWithCurrentZone(setName, args[0], options,
scheduleTask, clearTask);\n if (!task) {\n return task;\n }\n // Node.js must
additionally support the ref and unref functions.\n var handle = task.data.handleId;\n if (typeof
handle === 'number') {\n // for non nodejs env, we save handleId: task\n // mapping in local
cache for clearTimeout\n tasksByHandleId[handle] = task;\n }\n else if (handle) {\n
// for nodejs env, we save task\n // reference in timerId Object for clearTimeout\n handle[taskSymbol] = task;\n }\n // check whether handle is null, because some polyfill or
browser\n // may return undefined from setTimeout/setInterval/setImmediate/requestAnimationFrame\n if (handle && handle.ref && handle.unref && typeof handle.ref === 'function' &&\n
typeof\n handle.unref === 'function') {\n task.ref = handle.ref.bind(handle);\n task.unref =
handle.unref.bind(handle);\n }\n if (typeof handle === 'number' || handle) {\n return
handle;\n }\n return task;\n }\n else {\n // cause an error by calling it
directly.\n return delegate.apply(window, args);\n }\n }; });\n clearNative =\n patchMethod(window, cancelName, function (delegate) {\n return function (self, args) {\n var id = args[0];\n var task;\n if (typeof id === 'number') {\n // non nodejs env.\n task =

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tasksByHandleId[id];\n }\n else {\n // nodejs env.\n task = id && id[taskSymbol];\n // other environments.\n if (!task) {\n task = id;\n }\n if\n (task && typeof task.type === 'string') {\n if (task.state !== 'notScheduled' &&\n (task.cancelFn && task.data.isPeriodic || task.runCount === 0)) {\n if (typeof id === 'number') {\n delete tasksByHandleId[id];\n }\n else if (id) {\n id[taskSymbol] =\n null;\n }\n // Do not cancel already canceled functions\n task.zone.cancelTask(task);\n }\n }\n else {\n // cause an error by calling it\n directly.\n delegate.apply(window, args);\n }\n });\n}\n\n/**\n * @license\n * Copyright\n * Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the LICENSE file at https://angular.io/license\n */\n\n * This is necessary for Chrome and Chrome\n * mobile, to enable\n * things like redefining `createdCallback` on an element.\n */\n\nvar _defineProperty =\n Object[zoneSymbol('defineProperty')] = Object.defineProperty;\nvar _getOwnPropertyDescriptor =\n Object[zoneSymbol('getOwnPropertyDescriptor')] =\n Object.getOwnPropertyDescriptor;\nvar _create =\n Object.create;\nvar unconfigurablesKey = zoneSymbol('unconfigurables');\nfunction propertyPatch() {\n Object.defineProperty = function (obj, prop, desc) {\n if (isUnconfigurable(obj, prop)) {\n throw new\n TypeError('Cannot assign to read only property \'' + prop + '\'' of ' + obj);\n }\n var\n originalConfigurableFlag = desc.configurable;\n if (prop !== 'prototype') {\n desc =\n rewriteDescriptor(obj, prop, desc);\n }\n return _tryDefineProperty(obj, prop, desc,\n originalConfigurableFlag);\n };\n Object.defineProperties = function (obj, props) {\n Object.keys(props).forEach(function (prop) {\n Object.defineProperty(obj, prop, props[prop]);\n });\n return obj;\n };\n Object.create = function (obj, proto) {\n if (typeof proto === 'object' &&\n !Object.isFrozen(proto)) {\n Object.keys(proto).forEach(function (prop) {\n proto[prop] =\n rewriteDescriptor(obj, prop, proto[prop]);\n });\n }\n return _create(obj, proto);\n };\n Object.getOwnPropertyDescriptor = function (obj, prop) {\n var desc = _getOwnPropertyDescriptor(obj,\n prop);\n if (isUnconfigurable(obj, prop)) {\n desc.configurable = false;\n }\n return desc;\n };\n}\n\nfunction _redefineProperty(obj, prop, desc) {\n var originalConfigurableFlag = desc.configurable;\n desc\n = rewriteDescriptor(obj, prop, desc);\n return _tryDefineProperty(obj, prop, desc,\n originalConfigurableFlag);\n}\n\nfunction isUnconfigurable(obj, prop) {\n return obj && obj[unconfigurablesKey]\n && obj[unconfigurablesKey][prop];\n}\n\nfunction rewriteDescriptor(obj, prop, desc) {\n // issue-927, if the desc is\n frozen, don't try to change the desc\n if (!Object.isFrozen(desc)) {\n desc.configurable = true;\n }\n if\n (!desc.configurable) {\n // issue-927, if the obj is frozen, don't try to set the desc to obj\n if\n (!obj[unconfigurablesKey] && !Object.isFrozen(obj)) {\n _defineProperty(obj, unconfigurablesKey, {\n writable: true, value: {} });\n }\n if (obj[unconfigurablesKey]) {\n obj[unconfigurablesKey][prop] =\n true;\n }\n }\n return desc;\n}\n\nfunction _tryDefineProperty(obj, prop, desc, originalConfigurableFlag) {\n try {\n return _defineProperty(obj, prop, desc);\n }\n catch (error) {\n if (desc.configurable) {\n //\n In case of errors, when the configurable flag was likely set by\n rewriteDescriptor(), let's\n // retry with the\n original flag value\n if (typeof originalConfigurableFlag === 'undefined') {\n delete\n desc.configurable;\n }\n else {\n desc.configurable = originalConfigurableFlag;\n }\n try {\n return _defineProperty(obj, prop, desc);\n }\n catch (error) {\n var\n descJson = null;\n try {\n descJson = JSON.stringify(desc);\n }\n catch\n (error) {\n descJson = desc.toString();\n }\n console.log("Attempting to configure \"" +\n prop + "\" with descriptor \"" + descJson + "\" on object \"" +\n obj + "\" and got error, giving up: " + error);\n }\n }\n else {\n throw error;\n }\n }\n}\n\n/**\n * @license\n * Copyright\n * Google Inc. All\n * Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n * found in the\n * LICENSE file at https://angular.io/license\n */\n\n// we have to patch the instance since the proto is non-\nconfigurable\nfunction apply(api, _global) {\n var WS = _global.WebSocket;\n // On Safari\n window.EventTarget doesn't exist so need to patch WS add/removeEventListener\n // On older Chrome, no need\n since EventTarget was already patched\n if (!_global.EventTarget) {\n patchEventTarget(_global,\n
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[WS.prototype]);\n }\n _global.WebSocket = function (x, y) {\n var socket = arguments.length > 1 ? new
WS(x, y) : new WS(x);\n var proxySocket;\n var proxySocketProto;\n // Safari 7.0 has non-
configurable own 'onmessage' and friends properties on the socket instance\n var onmessageDesc =
ObjectGetOwnPropertyDescriptor(socket, 'onmessage');\n if (onmessageDesc && onmessageDesc.configurable
=== false) {\n proxySocket = ObjectCreate(socket);\n // socket have own property descriptor 'onopen',
'onmessage', 'onclose', 'onerror'\n // but proxySocket not, so we will keep socket as prototype and pass it to\n
 // patchOnProperties method\n proxySocketProto = socket;\n [ADD_EVENT_LISTENER_STR,
REMOVE_EVENT_LISTENER_STR, 'send', 'close'].forEach(function (propName) {\n
proxySocket[propName] = function () {\n var args = ArraySlice.call(arguments);\n if
(propName === ADD_EVENT_LISTENER_STR || propName === REMOVE_EVENT_LISTENER_STR) {\n
 var eventName = args.length > 0 ? args[0] : undefined;\n if (eventName) {\n
var propertySymbol = Zone.__symbol__('ON_PROPERTY' + eventName);\n
socket[propertySymbol] = proxySocket[propertySymbol];\n }\n }\n return
socket[propName].apply(socket, args);\n };\n });\n }\n else {\n // we can patch the
real socket\n proxySocket = socket;\n }\n patchOnProperties(proxySocket, ['close', 'error', 'message',
'open'], proxySocketProto);\n return proxySocket;\n };\n var globalWebSocket = _global['WebSocket'];\n
for (var prop in WS) {\n globalWebSocket[prop] = WS[prop];\n }\n}\n\n/**\n * @license\n * Copyright
Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license that can be\n *
found in the LICENSE file at https://angular.io/license\n * /\n**\n * @fileoverview\n * @suppress {globalThis}\n
*\nvar globalEventHandlersEventNames = [\n 'abort',\n 'animationcancel',\n 'animationend',\n
 'animationiteration',\n 'auxclick',\n 'beforeinput',\n 'blur',\n 'cancel',\n 'canplay',\n 'canplaythrough',\n
 'change',\n 'compositionstart',\n 'compositionupdate',\n 'compositionend',\n 'cuechange',\n 'click',\n
 'close',\n 'contextmenu',\n 'curechange',\n 'dblclick',\n 'drag',\n 'dragend',\n 'dragenter',\n 'dragexit',\n
 'dragleave',\n 'dragover',\n 'drop',\n 'durationchange',\n 'emptied',\n 'ended',\n 'error',\n 'focus',\n
 'focusin',\n 'focusout',\n 'gotpointercapture',\n 'input',\n 'invalid',\n 'keydown',\n 'keypress',\n 'keyup',\n
 'load',\n 'loadstart',\n 'loadeddata',\n 'loadedmetadata',\n 'lostpointercapture',\n 'mousedown',\n
 'mouseenter',\n 'mouseleave',\n 'mousemove',\n 'mouseout',\n 'mouseover',\n 'mouseup',\n 'mousewheel',\n
 'orientationchange',\n 'pause',\n 'play',\n 'playing',\n 'pointercancel',\n 'pointerdown',\n 'pointerenter',\n
 'pointerleave',\n 'pointerlockchange',\n 'mozpointerlockchange',\n 'webkitpointerlockerchange',\n
 'pointerlockerror',\n 'mozpointerlockerror',\n 'webkitpointerlockerror',\n 'pointermove',\n 'pointout',\n
 'pointerover',\n 'pointerup',\n 'progress',\n 'ratechange',\n 'reset',\n 'resize',\n 'scroll',\n 'seeked',\n
 'seeking',\n 'select',\n 'selectionchange',\n 'selectstart',\n 'show',\n 'sort',\n 'stalled',\n 'submit',\n
 'suspend',\n 'timeupdate',\n 'volumechange',\n 'touchcancel',\n 'touchmove',\n 'touchstart',\n 'touchend',\n
 'transitioncancel',\n 'transitionend',\n 'waiting',\n 'wheel'\n];\nvar documentEventNames = [\n
 'afterscriptexecute', 'beforescriptexecute', 'DOMContentLoaded', 'fullscreenchange',\n 'mozfullscreenchange',
 'webkitfullscreenchange', 'msfullscreenchange', 'fullscreenerror',\n 'mozfullscreenerror', 'webkitfullscreenerror',
 'msfullscreenerror', 'readystatechange',\n 'visibilitychange'\n];\nvar windowEventNames = [\n
 'absolutedeviceorientation',\n 'afterinput',\n 'afterprint',\n 'appinstalled',\n 'beforeinstallprompt',\n
 'beforeprint',\n 'beforeunload',\n 'devicelight',\n 'devicemotion',\n 'deviceorientation',\n
 'deviceorientationabsolute',\n 'deviceproximity',\n 'hashchange',\n 'languagechange',\n 'message',\n
 'mozbeforepaint',\n 'offline',\n 'online',\n 'paint',\n 'pageshow',\n 'pagehide',\n 'popstate',\n
 'rejectionhandled',\n 'storage',\n 'unhandledrejection',\n 'unload',\n 'userproximity',\n 'vrdisplyconnected',\n
 'vrdisplaydisconnected',\n 'vrdisplaypresentchange'\n];\nvar htmlElementEventNames = [\n 'beforecopy',
 'beforecut', 'beforepaste', 'copy', 'cut', 'paste', 'dragstart', 'loadend',\n 'animationstart', 'search', 'transitionrun',
 'transitionstart', 'webkitanimationend',\n 'webkitanimationiteration', 'webkitanimationstart',
 'webkittransitionend'\n];\nvar mediaElementEventNames = ['encrypted', 'waitingforkey', 'msneedkey',
 'mozinterruptbegin', 'mozinterruptend'];\nvar ieElementEventNames = [\n 'activate',\n 'afterupdate',\n
 'ariarequest',\n 'beforeactivate',\n 'beforedeactivate',\n 'beforeeditfocus',\n 'beforeupdate',\n 'cellchange',\n

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'controlselect',\n 'dataavailable',\n 'datasetchanged',\n 'datasetcomplete',\n 'errorupdate',\n 'filterchange',\n
'layoutcomplete',\n 'losecapture',\n 'move',\n 'moveend',\n 'movestart',\n 'propertychange',\n 'resizeend',\n
'resizestart',\n 'rowenter',\n 'rowexit',\n 'rowsdelete',\n 'rowsinserted',\n 'command',\n
'compassneedscalibration',\n 'deactivate',\n 'help',\n 'mscontentzoom',\n 'msmanipulationstatechanged',\n
'msgesturechange',\n 'msgesturedoubletap',\n 'msgestureend',\n 'msgesturehold',\n 'msgesturestart',\n
'msgesturetap',\n 'msgotpointercapture',\n 'msinertiastart',\n 'mslostpointercapture',\n 'mspointercancel',\n
'mspointerdown',\n 'mspointerenter',\n 'mspointerhover',\n 'mspointerleave',\n 'mspointermove',\n
'mspointerout',\n 'mspointerover',\n 'mspointerup',\n 'pointerout',\n 'mssitemodejumplisitemremoved',\n
'msthumbnailclick',\n 'stop',\n 'storagecommit'\n);\nvar webglEventNames = ['webglcontextrestored',
'webglcontextlost', 'webglcontextcreationerror'];\nvar formEventNames = ['autocomplete', 'autocompleteerror'];\nvar
detailEventNames = ['toggle'];\nvar frameEventNames = ['load'];\nvar frameSetEventNames = ['blur', 'error', 'focus',
'load', 'resize', 'scroll', 'messageerror'];\nvar marqueeEventNames = ['bounce', 'finish', 'start'];\nvar
XMLHttpRequestEventNames = [\n 'loadstart', 'progress', 'abort', 'error', 'load', 'progress', 'timeout', 'loadend',\n
'readystatechange'\n];\nvar IDBIndexEventNames = ['upgradeneeded', 'complete', 'abort', 'success', 'error', 'blocked',
'versionchange', 'close'];\nvar websocketEventNames = ['close', 'error', 'open', 'message'];\nvar workerEventNames =
['error', 'message'];\nvar eventNames = globalEventHandlersEventNames.concat(webglEventNames,
formEventNames, detailEventNames, documentEventNames, windowEventNames, htmlElementEventNames,
ieElementEventNames);\nfunction filterProperties(target, onProperties, ignoreProperties) {\n if (!ignoreProperties)
{\n return onProperties;\n }}\n var tip = ignoreProperties.filter(function (ip) { return ip.target === target;
});\n if (!tip || tip.length === 0) {\n return onProperties;\n }}\n var targetIgnoreProperties =
tip[0].ignoreProperties;\n return onProperties.filter(function (op) { return targetIgnoreProperties.indexOf(op) ===
-1; });\n}\nfunction patchFilteredProperties(target, onProperties, ignoreProperties, prototype) {\n // check whether
target is available, sometimes target will be undefined\n // because different browser or some 3rd party plugin.\n
if (!target) {\n return;\n }}\n var filteredProperties = filterProperties(target, onProperties, ignoreProperties);\n
patchOnProperties(target, filteredProperties, prototype);\n}\nfunction propertyDescriptorPatch(api, _global) {\n if
(isNode && !isMix) {\n return;\n }}\n var supportsWebSocket = typeof WebSocket !== 'undefined';\n if
(canPatchViaPropertyDescriptor()) {\n var ignoreProperties = _global.__Zone_ignore_on_properties;\n //
for browsers that we can patch the descriptor: Chrome & Firefox\n if (isBrowser) {\n var
internalWindow = window;\n // in IE/Edge, onProp not exist in window object, but in WindowPrototype\n
// so we need to pass WindowPrototype to check onProp exist or not\n
patchFilteredProperties(internalWindow, eventNames.concat(['messageerror']), ignoreProperties,
ObjectGetPrototypeOf(internalWindow));\n patchFilteredProperties(Document.prototype, eventNames,
ignoreProperties);\n if (typeof internalWindow['SVGElement'] !== 'undefined') {\n
patchFilteredProperties(internalWindow['SVGElement'].prototype, eventNames, ignoreProperties);\n
patchFilteredProperties(Element.prototype, eventNames, ignoreProperties);\n
patchFilteredProperties(HTMLElement.prototype, eventNames, ignoreProperties);\n
patchFilteredProperties(HTMLMediaElement.prototype, mediaElementEventNames, ignoreProperties);\n
patchFilteredProperties(HTMLFrameSetElement.prototype, windowEventNames.concat(frameSetEventNames),
ignoreProperties);\n patchFilteredProperties(HTMLBodyElement.prototype,
windowEventNames.concat(frameSetEventNames), ignoreProperties);\n
patchFilteredProperties(HTMLFrameElement.prototype, frameEventNames, ignoreProperties);\n
patchFilteredProperties(HTMLIFrameElement.prototype, frameEventNames, ignoreProperties);\n var
HTMLMarqueeElement_1 = internalWindow['HTMLMarqueeElement'];\n if (HTMLMarqueeElement_1)
{\n patchFilteredProperties(HTMLMarqueeElement_1.prototype, marqueeEventNames,
ignoreProperties);\n }}\n var Worker_1 = internalWindow['Worker'];\n if (Worker_1) {\n
patchFilteredProperties(Worker_1.prototype, workerEventNames, ignoreProperties);\n }}\n
patchFilteredProperties(XMLHttpRequest.prototype, XMLHttpRequestEventNames, ignoreProperties);\n var
XMLHttpRequestEventTarget = _global['XMLHttpRequestEventTarget'];\n if (XMLHttpRequestEventTarget)

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{\n patchFilteredProperties(XMLHttpRequestEventTarget && XMLHttpRequestEventTarget.prototype,
XMLHttpRequestEventNames, ignoreProperties);\n }\n if (typeof IDBIndex !== 'undefined') {\n
patchFilteredProperties(IDBIndex.prototype, IDBIndexEventNames, ignoreProperties);\n
patchFilteredProperties(IDBRequest.prototype, IDBIndexEventNames, ignoreProperties);\n
patchFilteredProperties(IDBOpenDBRequest.prototype, IDBIndexEventNames, ignoreProperties);\n
patchFilteredProperties(IDBDatabase.prototype, IDBIndexEventNames, ignoreProperties);\n
patchFilteredProperties(IDBTransaction.prototype, IDBIndexEventNames, ignoreProperties);\n
patchFilteredProperties(IDBCursor.prototype, IDBIndexEventNames, ignoreProperties);\n }\n if
(supportsWebSocket) {\n patchFilteredProperties(WebSocket.prototype, websocketEventNames,
ignoreProperties);\n }\n }\n else {\n // Safari, Android browsers (Jelly Bean)\n
patchViaCapturingAllTheEvents();\n patchClass('XMLHttpRequest');\n if (supportsWebSocket) {\n
apply(api, _global);\n }\n }\n}\n\nfunction canPatchViaPropertyDescriptor() {\n if ((isBrowser || isMix) &&
!ObjectGetOwnPropertyDescriptor(HTMLElement.prototype, 'onclick') &&\n typeof Element !== 'undefined')
{\n // WebKit https://bugs.webkit.org/show_bug.cgi?id=134364\n // IDL interface attributes are not
configurable\n var desc = ObjectGetOwnPropertyDescriptor(Element.prototype, 'onclick');\n if (desc &&
!desc.configurable)\n return false;\n }\n var ON_READY_STATE_CHANGE = 'onreadystatechange';\n
var XMLHttpRequestPrototype = XMLHttpRequest.prototype;\n var xhrDesc =
ObjectGetOwnPropertyDescriptor(XMLHttpRequestPrototype, ON_READY_STATE_CHANGE);\n // add
enumerable and configurable here because in opera\n // by default
XMLHttpRequest.prototype.onreadystatechange is undefined\n // without adding enumerable and configurable
will cause onreadystatechange\n // non-configurable\n // and if XMLHttpRequest.prototype.onreadystatechange
is undefined,\n // we should set a real desc instead a fake one\n if (xhrDesc) {\n
ObjectDefineProperty(XMLHttpRequestPrototype, ON_READY_STATE_CHANGE, {\n enumerable:
true,\n configurable: true,\n get: function () {\n return true;\n }\n });\n var req
= new XMLHttpRequest();\n var result = !req.onreadystatechange;\n // restore original desc\n
ObjectDefineProperty(XMLHttpRequestPrototype, ON_READY_STATE_CHANGE, xhrDesc || {});\n return
result;\n }\n else {\n var SYMBOL_FAKE_ONREADYSTATECHANGE_1 = zoneSymbol('fake');\n
ObjectDefineProperty(XMLHttpRequestPrototype, ON_READY_STATE_CHANGE, {\n enumerable:
true,\n configurable: true,\n get: function () {\n return
this[SYMBOL_FAKE_ONREADYSTATECHANGE_1];\n },\n set: function (value) {\n
this[SYMBOL_FAKE_ONREADYSTATECHANGE_1] = value;\n }\n });\n var req = new
XMLHttpRequest();\n var detectFunc = function () { }; \n req.onreadystatechange = detectFunc;\n var
result = req[SYMBOL_FAKE_ONREADYSTATECHANGE_1] === detectFunc;\n req.onreadystatechange =
null;\n return result;\n }\n}\n\nvar unboundKey = zoneSymbol('unbound');\n// Whenever any eventListener
fires, we check the eventListener target and all parents\n// for `onwhatever` properties and replace them with zone-
bound functions\n// - Chrome (for now)\nfunction patchViaCapturingAllTheEvents() {\n var _loop_1 = function
(i) {\n var property = eventNames[i];\n var onproperty = 'on' + property;\n
self.addEventListener(property, function (event) {\n var elt = event.target, bound, source;\n if (elt) {\n
source = elt.constructor['name'] + '.' + onproperty;\n }\n else {\n source = 'unknown.'
+ onproperty;\n }\n while (elt) {\n if (elt[onproperty] && !elt[onproperty][unboundKey]) {\n
bound = wrapWithCurrentZone(elt[onproperty], source);\n bound[unboundKey] =
elt[onproperty];\n elt[onproperty] = bound;\n }\n elt = elt.parentElement;\n }\n
 }, true);\n }\n for (var i = 0; i < eventNames.length; i++) {\n _loop_1(i);\n }\n}\n\n/**\n * @license\n
* Copyright Google Inc. All Rights Reserved.\n * Use of this source code is governed by an MIT-style license
that can be\n * found in the LICENSE file at https://angular.io/license\n */\nfunction eventTargetPatch(_global, api)
{\n var WTF_ISSUE_555 =
'Anchor,Area,Audio,BR,Base,BaseFont,Body,Button,Canvas,Content,DList,Directory,Div,Embed,FieldSet,Font,For
m,Frame,FrameSet,HR,Head,Heading,Html,IFrame,Image,Input,Keygen,LI,Label,Legend,Link,Map,Marquee,Medi

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a,Menu,Meta,Meter,Mod,OList,Object,OptGroup,Option,Output,Paragraph,Pre,Progress,Quote,Script,Select,Source,
Span,Style,TableCaption,TableCell,TableCol,Table,TableRow,TableSection,TextArea,Title,Track,UList,Unknown,
Video';\n var NO_EVENT_TARGET =
'ApplicationCache,EventSource,FileReader,InputMethodContext,MediaController,MessagePort,Node,Performance,
SVGElementInstance,SharedWorker,TextTrack,TextTrackCue,TextTrackList,WebKitNamedFlow,Window,Worker,
WorkerGlobalScope,XMLHttpRequest,XMLHttpRequestEventTarget,XMLHttpRequestUpload,IDBRequest,IDBO
penDBRequest,IDBDatabase,IDBTransaction,IDBCursor,DBIndex,WebSocket'\n .split(',')\n var
EVENT_TARGET = 'EventTarget';\n var apis = [];\n var isWtf = _global['wtf'];\n var
WTF_ISSUE_555_ARRAY = WTF_ISSUE_555.split(',')\n if (isWtf) {\n // Workaround for:
https://github.com/google/tracing-framework/issues/555\n apis = WTF_ISSUE_555_ARRAY.map(function (v)
{ return 'HTML' + v + 'Element'; }).concat(NO_EVENT_TARGET);\n }\n else if (_global[EVENT_TARGET])
{\n apis.push(EVENT_TARGET);\n }\n else {\n // Note: EventTarget is not available in all browsers,\n
// if it's not available, we instead patch the APIs in the IDL that inherit from EventTarget\n apis =
NO_EVENT_TARGET;\n }\n var isDisableIECheck = _global['__Zone_disable_IE_check'] || false;\n var
isEnabledCrossContextCheck = _global['__Zone_enable_cross_context_check'] || false;\n var ieOrEdge =
isIEOrEdge();\n var ADD_EVENT_LISTENER_SOURCE = '.addEventListener';\n var
FUNCTION_WRAPPER = '[object FunctionWrapper]';\n var BROWSER_TOOLS = 'function
__BROWSERTOOLS_CONSOLE_SAFEFUNC() { [native code] }';\n // predefine all __zone_symbol__ +
eventName + true/false string\n for (var i = 0; i < eventNames.length; i++) {\n var eventName =
eventNames[i];\n var falseEventName = eventName + FALSE_STR;\n var trueEventName = eventName +
TRUE_STR;\n var symbol = ZONE_SYMBOL_PREFIX + falseEventName;\n var symbolCapture =
ZONE_SYMBOL_PREFIX + trueEventName;\n zoneSymbolEventNames$1[eventName] = {};\n
zoneSymbolEventNames$1[eventName][FALSE_STR] = symbol;\n
zoneSymbolEventNames$1[eventName][TRUE_STR] = symbolCapture;\n }\n // predefine all task.source
string\n for (var i = 0; i < WTF_ISSUE_555.length; i++) {\n var target = WTF_ISSUE_555_ARRAY[i];\n
var targets = globalSources[target] = {};\n for (var j = 0; j < eventNames.length; j++) {\n var eventName
= eventNames[j];\n targets[eventName] = target + ADD_EVENT_LISTENER_SOURCE + eventName;\n
 }\n }\n var checkIEAndCrossContext = function (nativeDelegate, delegate, target, args) {\n if
(!isDisableIECheck && ieOrEdge) {\n if (isEnabledCrossContextCheck) {\n try {\n var
testString = delegate.toString();\n if ((testString === FUNCTION_WRAPPER || testString ==
BROWSER_TOOLS)) {\n nativeDelegate.apply(target, args);\n return false;\n
 }\n catch (error) {\n nativeDelegate.apply(target, args);\n return
false;\n }\n } else {\n var testString = delegate.toString();\n if
((testString === FUNCTION_WRAPPER || testString == BROWSER_TOOLS)) {\n
 nativeDelegate.apply(target, args);\n return false;\n }\n } else if
(isEnabledCrossContextCheck) {\n try {\n delegate.toString();\n } catch (error) {\n
 nativeDelegate.apply(target, args);\n return false;\n }\n } return true;\n
 }\n }\n var
apiTypes = [];\n for (var i = 0; i < apis.length; i++) {\n var type = _global[apis[i]];\n apiTypes.push(type
&& type.prototype);\n }\n // vh is validateHandler to check event handler\n // is valid or not(for security
check)\n patchEventTarget(_global, apiTypes, { vh: checkIEAndCrossContext });\n api.patchEventTarget =
patchEventTarget;\n return true;\n }\n \nfunction patchEvent(global, api) {\n patchEventPrototype(global,
api);\n }\n \n/**\n * @license\n * Copyright Google Inc. All Rights Reserved.\n * Use of this source code is
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*/\nfunction registerElementPatch(_global) {\n if ((!isBrowser && !isMix) || !(('registerElement' in
_global.document))) {\n return;\n }\n var _registerElement = document.registerElement;\n var callbacks =
['createdCallback', 'attachedCallback', 'detachedCallback', 'attributeChangedCallback'];\n
document.registerElement = function (name, opts) {\n if (opts && opts.prototype) {\n
callbacks.forEach(function (callback) {\n var source = 'Document.registerElement::' + callback;\n

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oriRemoveListener =
XMLHttpRequestEventTargetPrototype[ZONE_SYMBOL_REMOVE_EVENT_LISTENER];\n }\n }\n
 var READY_STATE_CHANGE = 'readystatechange';\n var SCHEDULED = 'scheduled';\n function
scheduleTask(task) {\n XMLHttpRequest[XHR_SCHEDULED] = false;\n var data = task.data;\n
 var target = data.target;\n // remove existing event listener\n var listener =
target[XHR_LISTENER];\n if (!oriAddListener) {\n oriAddListener =
target[ZONE_SYMBOL_ADD_EVENT_LISTENER];\n oriRemoveListener =
target[ZONE_SYMBOL_REMOVE_EVENT_LISTENER];\n }\n if (listener) {\n
oriRemoveListener.call(target, READY_STATE_CHANGE, listener);\n }\n var newListener =
target[XHR_LISTENER] = function () {\n if (target.readyState === target.DONE) {\n //
sometimes on some browsers XMLHttpRequest will fire onreadystatechange with\n // readyState=4
multiple times, so we need to check task state here\n if (!data.aborted &&
XMLHttpRequest[XHR_SCHEDULED] && task.state === SCHEDULED) {\n task.invoke();\n
 }\n }\n }; \n oriAddListener.call(target, READY_STATE_CHANGE, newListener);\n
 var storedTask = target[XHR_TASK];\n if (!storedTask) {\n target[XHR_TASK] = task;\n
 }\n sendNative.apply(target, data.args);\n XMLHttpRequest[XHR_SCHEDULED] = true;\n
return task;\n }\n function placeholderCallback() { }\n function clearTask(task) {\n var data =
task.data;\n // Note - ideally, we would call data.target.removeEventListener here, but it's too late\n //
to prevent it from firing. So instead, we store info for the event listener.\n data.aborted = true;\n return
abortNative.apply(data.target, data.args);\n }\n var openNative = patchMethod(XMLHttpRequestPrototype,
'open', function () { return function (self, args) {\n self[XHR_SYNC] = args[2] === false;\n
self[XHR_URL] = args[1];\n return openNative.apply(self, args);\n }; });\n var
XMLHTTPREQUEST_SOURCE = 'XMLHttpRequest.send';\n var sendNative =
patchMethod(XMLHttpRequestPrototype, 'send', function () { return function (self, args) {\n if
(self[XHR_SYNC]) {\n // if the XHR is sync there is no task to schedule, just execute the code.\n
return sendNative.apply(self, args);\n }\n else {\n var options = {\n target: self,\n
 url: self[XHR_URL],\n isPeriodic: false,\n delay: null,\n args: args,\n
 aborted: false\n };\n return
scheduleMacroTaskWithCurrentZone(XMLHTTPREQUEST_SOURCE, placeholderCallback, options,
scheduleTask, clearTask);\n }\n }; });\n var abortNative = patchMethod(XMLHttpRequestPrototype,
'abort', function () { return function (self) {\n var task = findPendingTask(self);\n if (task && typeof
task.type === 'string') {\n // If the XHR has already completed, do nothing.\n // If the XHR has
already been aborted, do nothing.\n // Fix #569, call abort multiple times before done will cause\n
// macroTask task count be negative number\n if (task.cancelFn === null || (task.data && task.data.aborted))
{\n return;\n }\n task.zone.cancelTask(task);\n }\n // Otherwise, we are
trying to abort an XHR which has not yet been sent, so there is no\n // task\n // to cancel. Do nothing.\n
 }; });\n }\n});\n\nZone.__load_patch('geolocation', function (global) {\n // GEO_LOCATION\n if
(global['navigator'] && global['navigator'].geolocation) {\n patchPrototype(global['navigator'].geolocation,
['getCurrentPosition', 'watchPosition']);\n }\n});\n\nZone.__load_patch('PromiseRejectionEvent', function (global,
Zone) {\n // handle unhandled promise rejection\n function findPromiseRejectionHandler(evtName) {\n
return function (e) {\n var eventTasks = findEventTasks(global, evtName);\n
eventTasks.forEach(function (eventTask) {\n // windows has added unhandledrejection event listener\n
 // trigger the event listener\n var PromiseRejectionEvent = global['PromiseRejectionEvent'];\n
 if (PromiseRejectionEvent) {\n var evt = new PromiseRejectionEvent(evtName, { promise: e.promise,
reason: e.rejection });\n eventTask.invoke(evt);\n }\n });\n }\n if
(global['PromiseRejectionEvent']) {\n Zone[zoneSymbol('unhandledPromiseRejectionHandler')] =\n
findPromiseRejectionHandler('unhandledrejection');\n Zone[zoneSymbol('rejectionHandledHandler')] =\n
findPromiseRejectionHandler('rejectionhandled');\n }\n});\n\n/>\n\n**\n * @license\n * Copyright Google Inc. All

```



\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/fileselectors/FileInfo.java  
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\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/AbstractPlexusIoArchiveResourceCollection.java  
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\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/ContentSupplier.java  
\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/attributes/SymlinkUtils.java  
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\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/EncodingSupported.java  
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\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/resources/proxy/ResourceInvocationHandler.java  
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\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/attributes/AttributeUtils.java  
\* /opt/cola/permits/1045557791\_1684948190.4011142/0/plexus-io-3-0-1-sources-jar/org/codehaus/plexus/components/io/functions/FileSupplier.java

# 1.162 hamcrest 1.3

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# 1.167 xz-java 1.5

## 1.167.1 Available under license :

No license file was found, but licenses were detected in source scan.

```
/*
 * DeltaOutputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/DeltaOutputStream.java
```

No license file was found, but licenses were detected in source scan.

```
/**
 * XZ data compression support.
 *
 * <h4>Introduction</h4>
 * <p>
 * This aims to be a complete implementation of XZ data compression
```

```

* in pure Java. Features:
*
* Full support for the .xz file format specification version 1.0.4
* Single-threaded streamed compression and decompression
* Single-threaded decompression with limited random access support
* Raw streams (no .xz headers) for advanced users, including LZMA2
* with preset dictionary
*
* <p>
* Threading is planned but it is unknown when it will be implemented.
* <p>
* For the latest source code, see the
* home page of XZ for Java.
*
* <h4>Getting started</h4>
* <p>
* Start by reading the documentation of { @link org.tukaani.xz.XZOutputStream}
* and { @link org.tukaani.xz.XZInputStream}.
* If you use XZ inside another file format or protocol,
* see also { @link org.tukaani.xz.SingleXZInputStream}.
*
* <h4>Licensing</h4>
* <p>
* XZ for Java has been put into the public domain, thus you can do
* whatever you want with it. All the files in the package have been
* written by Lasse Collin and/or Igor Pavlov.
* <p>
* This software is provided "as is", without any warranty.
*/

```

Found in path(s):

```

* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/package-info.java
No license file was found, but licenses were detected in source scan.

```

```

/*

```

```

* LZDecoder
*
* Authors: Lasse Collin <lasse.collin@tukaani.org>
* Igor Pavlov <http://7-zip.org/>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/

```

Found in path(s):

```

* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/LZDecoder.java
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```

```
/*
 * SeekableFileInputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

`/opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SeekableFileInputStream.java`

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```
/*
 * XZOutputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

`/opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/XZOutputStream.java`

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```
/*
 * IndexBase
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

`/opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/index/IndexBase.java`

No license file was found, but licenses were detected in source scan.

```
/*
 * Util
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
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 */
```

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/common/Util.java

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/\*

\* PowerPCOptions

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

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\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/PowerPCOptions.java

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/\*

\* DeltaCoder

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/delta/DeltaCoder.java

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/DeltaCoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* BlockInfo

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

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\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/index/BlockInfo.java

No license file was found, but licenses were detected in source scan.

/\*

\* BCJOptions

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>



\*  
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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/BCJOptions.java  
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/\*

\* IndexRecord  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/index/IndexRecord.java  
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/\*

\* FilterOptions  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/FilterOptions.java  
No license file was found, but licenses were detected in source scan.

/\*

\* SimpleInputStream  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SimpleInputStream.java

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```
/*
* DeltaInputStream
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/DeltaInputStream.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* MemoryLimitException
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/MemoryLimitException.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Hash Chain match finder with 2-, 3-, and 4-byte hashing
*
* Authors: Lasse Collin <lasse.collin@tukaani.org>
* Igor Pavlov <http://7-zip.org/>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/HC4.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* XZFormatException
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
```

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/XZFormatException.java

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/\*

\* RangeDecoderFromBuffer

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-

jar/org/tukaani/xz/rangecoder/RangeDecoderFromBuffer.java

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/\*

\* LZMAEncoderNormal

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-

jar/org/tukaani/xz/lzma/LZMAEncoderNormal.java

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/\*

\* DecoderUtil

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/common/DecoderUtil.java

No license file was found, but licenses were detected in source scan.

```
/*
* FilterEncoder
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/FilterEncoder.java
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```

```
/*
* IA64Options
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/IA64Options.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* SingleXZInputStream
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
*/
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SingleXZInputStream.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* CRC32
*
* Author: Lasse Collin <lasse.collin@tukaani.org>
*
* This file has been put into the public domain.
* You can do whatever you want with this file.
```

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/check/CRC32.java  
No license file was found, but licenses were detected in source scan.

/\*

\* Optimum

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

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\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lzma/Optimum.java  
No license file was found, but licenses were detected in source scan.

/\*

\* LZMADecoder

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

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\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lzma/LZMADecoder.java  
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/\*

\* Check

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/check/Check.java  
No license file was found, but licenses were detected in source scan.

/\*

\* BCJCoder  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/BCJCoder.java  
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/\*

\* IndexIndicatorException  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/IndexIndicatorException.java  
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/\*

\* RangeDecoder  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/rangecoder/RangeDecoder.java  
No license file was found, but licenses were detected in source scan.

/\*

\* SPARCOptions  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SPARCOptions.java

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/\*

\* BCJ filter for x86 instructions

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/X86.java

No license file was found, but licenses were detected in source scan.

/\*

\* FilterCoder

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/FilterCoder.java

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/\*

\* IndexDecoder

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/index/IndexDecoder.java

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/\*

\* BlockOutputStream

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/BlockOutputStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* ARMOptions

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/ARMOptions.java

No license file was found, but licenses were detected in source scan.

/\*

\* FinishableOutputStream

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/FinishableOutputStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* LZMA2OutputStream

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMA2OutputStream.java



No license file was found, but licenses were detected in source scan.

```
/*
 * LZEncoder
 *
 * Authors: Lasse Collin <lasse.collin@tukaani.org>
 * Igor Pavlov <http://7-zip.org/>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

`/opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/LZEncoder.java`

No license file was found, but licenses were detected in source scan.

```
/*
 * RangeCoder
 *
 * Authors: Lasse Collin <lasse.collin@tukaani.org>
 * Igor Pavlov <http://7-zip.org/>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

`/opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/rangecoder/RangeCoder.java`

No license file was found, but licenses were detected in source scan.

```
/*
 * LZMA2InputStream
 *
 * Authors: Lasse Collin <lasse.collin@tukaani.org>
 * Igor Pavlov <http://7-zip.org/>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

`/opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMA2InputStream.java`

No license file was found, but licenses were detected in source scan.

```
/*
 * UncompressedLZMA2OutputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
```

\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/UncompressedLZMA2OutputStream.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* BCJ filter for SPARC instructions  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/SPARC.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* IndexHash  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/index/IndexHash.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* DeltaDecoder  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/DeltaDecoder.java

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/delta/DeltaDecoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* UnsupportedOperationException

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-

jar/org/tukaani/xz/UnsupportedOptionsException.java

No license file was found, but licenses were detected in source scan.

/\*

\* LZMACoder

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lzma/LZMACoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* None

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/check/None.java

No license file was found, but licenses were detected in source scan.

/\*

\* XZIOException

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/XZIOException.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* X86Options  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/X86Options.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* BlockInputStream  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/BlockInputStream.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* State  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lzma/State.java

No license file was found, but licenses were detected in source scan.

```
/*
 * BCJEncoder
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/BCJEncoder.java

No license file was found, but licenses were detected in source scan.

```
/*
 * FilterDecoder
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/FilterDecoder.java

No license file was found, but licenses were detected in source scan.

```
/*
 * CRC32Hash
 *
 * Authors: Lasse Collin <lasse.collin@tukaani.org>
 * Igor Pavlov <http://7-zip.org/>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/CRC32Hash.java

No license file was found, but licenses were detected in source scan.

```
/*
 * 2-, 3-, and 4-byte hashing
 *
 * Authors: Lasse Collin <lasse.collin@tukaani.org>
 * Igor Pavlov <http://7-zip.org/>
 *
 */
```

\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/Hash234.java

No license file was found, but licenses were detected in source scan.

/\*

\* XZInputStream

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/XZInputStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* LZMA2Encoder

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMA2Encoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* LZMA2Decoder

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMA2Decoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* LZMA2Coder  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMA2Coder.java  
No license file was found, but licenses were detected in source scan.

/\*

\* LZMAEncoderFast  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lzma/LZMAEncoderFast.java  
No license file was found, but licenses were detected in source scan.

/\*

\* EncoderUtil  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/common/EncoderUtil.java  
No license file was found, but licenses were detected in source scan.

/\*

\* BCJ filter for little endian ARM instructions  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/SimpleFilter.java

No license file was found, but licenses were detected in source scan.

/\*

\* XZ

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/XZ.java

No license file was found, but licenses were detected in source scan.

/\*

\* DeltaOptions

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/DeltaOptions.java

No license file was found, but licenses were detected in source scan.

/\*

\* SeekableXZInputStream

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SeekableXZInputStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* BCJ filter for little endian ARM-Thumb instructions

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>



\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/ARMThumb.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* LZMAInputStream  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMAInputStream.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* SimpleOutputStream  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SimpleOutputStream.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* LZMA2Options  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/LZMA2Options.java

No license file was found, but licenses were detected in source scan.

```
/*
 * FinishableWrapperOutputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-
jar/org/tukaani/xz/FinishableWrapperOutputStream.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * IndexEncoder
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/index/IndexEncoder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * BCJDecoder
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/BCJDecoder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * CountingInputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
```

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/CountingInputStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* Matches

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/Matches.java

No license file was found, but licenses were detected in source scan.

/\*

\* BCJ filter for Itanium (IA-64) instructions

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/IA64.java

No license file was found, but licenses were detected in source scan.

/\*

\* BCJ filter for big endian PowerPC instructions

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/PowerPC.java

No license file was found, but licenses were detected in source scan.

```
/*
 * LZMAEncoder
 *
 * Authors: Lasse Collin <lasse.collin@tukaani.org>
 * Igor Pavlov <http://7-zip.org/>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lzma/LZMAEncoder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * RawCoder
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/RawCoder.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * CorruptedInputException
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 * You can do whatever you want with this file.
 */
```

Found in path(s):

```
* /opt/cola/permits/1021437194_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/CorruptedInputException.java
```

No license file was found, but licenses were detected in source scan.

```
/*
 * CountingOutputStream
 *
 * Author: Lasse Collin <lasse.collin@tukaani.org>
 *
 * This file has been put into the public domain.
 */
```

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/CountingOutputStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* RangeEncoder

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/rangecoder/RangeEncoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* ARMThumbOptions

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/ARMThumbOptions.java

No license file was found, but licenses were detected in source scan.

/\*

\* SHA256

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/check/SHA256.java

No license file was found, but licenses were detected in source scan.

/\*

\* CRC64  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/check/CRC64.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* SeekableInputStream  
\*  
\* Author: Lasse Collin <lasse.collin@tukaani.org>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/SeekableInputStream.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* Binary Tree match finder with 2-, 3-, and 4-byte hashing  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/lz/BT4.java  
No license file was found, but licenses were detected in source scan.

/\*  
\* RangeDecoderFromStream  
\*  
\* Authors: Lasse Collin <lasse.collin@tukaani.org>  
\* Igor Pavlov <<http://7-zip.org/>>  
\*  
\* This file has been put into the public domain.  
\* You can do whatever you want with this file.  
\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/rangecoder/RangeDecoderFromStream.java

No license file was found, but licenses were detected in source scan.

/\*

\* StreamFlags

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/common/StreamFlags.java

No license file was found, but licenses were detected in source scan.

/\*

\* DeltaEncoder

\*

\* Author: Lasse Collin <lasse.collin@tukaani.org>

\*

\* This file has been put into the public domain.

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\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/DeltaEncoder.java

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/delta/DeltaEncoder.java

No license file was found, but licenses were detected in source scan.

/\*

\* BCJ filter for little endian ARM instructions

\*

\* Authors: Lasse Collin <lasse.collin@tukaani.org>

\* Igor Pavlov <<http://7-zip.org/>>

\*

\* This file has been put into the public domain.

\* You can do whatever you want with this file.

\*/

Found in path(s):

\* /opt/cola/permits/1021437194\_1611277404.24/0/xz-1-5-sources-jar/org/tukaani/xz/simple/ARM.java

# 1.168 scala-uri 0.4.14

## 1.168.1 Available under license :

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# 1.169 j2objc-annotations 1.3

## 1.169.1 Available under license :

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```
/*
 * Licensed under the Apache License, Version 2.0 (the "License");
 * you may not use this file except in compliance with the License.
 * You may obtain a copy of the License at
 *
 * http://www.apache.org/licenses/LICENSE-2.0
 *
 * Unless required by applicable law or agreed to in writing, software
 * distributed under the License is distributed on an "AS IS" BASIS,
 * WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
 * See the License for the specific language governing permissions and
 * limitations under the License.
 */
```

Found in path(s):

```
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-jar/com/google/j2objc/annotations/RetainedWith.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-jar/com/google/j2objc/annotations/Property.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-jar/com/google/j2objc/annotations/LoopTranslation.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
```



```
jar/com/google/j2objc/annotations/ObjectiveCName.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
jar/com/google/j2objc/annotations/ReflectionSupport.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
jar/com/google/j2objc/annotations/RetainedLocalRef.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
jar/com/google/j2objc/annotations/J2ObjCIncompatible.java
No license file was found, but licenses were detected in source scan.
```

```
/*
* Copyright 2012 Google Inc. All Rights Reserved.
*
* Licensed under the Apache License, Version 2.0 (the "License");
* you may not use this file except in compliance with the License.
* You may obtain a copy of the License at
*
* http://www.apache.org/licenses/LICENSE-2.0
*
* Unless required by applicable law or agreed to in writing, software
* distributed under the License is distributed on an "AS IS" BASIS,
* WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
* See the License for the specific language governing permissions and
* limitations under the License.
*/
```

Found in path(s):

```
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
jar/com/google/j2objc/annotations/Weak.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
jar/com/google/j2objc/annotations/AutoreleasePool.java
* /opt/cola/permits/1131003150_1612875443.99/0/j2objc-annotations-1-3-sources-3-
jar/com/google/j2objc/annotations/WeakOuter.java
```

## 1.170 angular 1.2.28

### 1.170.1 Available under license :

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```
packaged angular
```

This repo is for distribution on `npm` and `bower`. The source for this module is in the [main AngularJS repo](<https://github.com/angular/angular.js>).

Please file issues and pull requests against that repo.

```
Install
```

You can install this package either with `npm` or with `bower`.

```
npm
```

```
```shell  
npm install angular  
```
```

Then add a ``<script>`` to your `index.html`:

```
```html  
<script src="/node_modules/angular/angular.js"></script>  
```
```

Note that this package is not in CommonJS format, so doing `require('angular')` will return `undefined`. If you're using [Browserify](https://github.com/substack/node-browserify), you can use [exposify](https://github.com/thlorenz/exposify) to have `require('angular')` return the `angular` global.

```
bower
```

```
```shell  
bower install angular  
```
```

Then add a ``<script>`` to your `index.html`:

```
```html  
<script src="/bower_components/angular/angular.js"></script>  
```
```

```
Documentation
```

Documentation is available on the [AngularJS docs site](http://docs.angularjs.org/).

```
License
```

The MIT License

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Found in path(s):

\* /opt/cola/permits/1685982475\_1684868876.2755835/0/angular-1-2-28-tgz/package/README.md

No license file was found, but licenses were detected in source scan.

/\*

AngularJS v1.2.28

(c) 2010-2014 Google, Inc. <http://angularjs.org>

License: MIT

\*/

Found in path(s):

\* /opt/cola/permits/1685982475\_1684868876.2755835/0/angular-1-2-28-tgz/package/angular.min.js

No license file was found, but licenses were detected in source scan.

/\*\*

\* @license AngularJS v1.2.28

\* (c) 2010-2014 Google, Inc. <http://angularjs.org>

\* License: MIT

\*/

/\*\*

\* @ngdoc service

\* @name \$sce

\* @kind function

\*

\* @description

\*

\* ` \$sce ` is a service that provides Strict Contextual Escaping services to AngularJS.

\*

\* # Strict Contextual Escaping

\*

\* Strict Contextual Escaping (SCE) is a mode in which AngularJS requires bindings in certain

\* contexts to result in a value that is marked as safe to use for that context. One example of

\* such a context is binding arbitrary html controlled by the user via `ng-bind-html`. We refer

\* to these contexts as privileged or SCE contexts.

\*

\* As of version 1.2, Angular ships with SCE enabled by default.

\*

\* Note: When enabled (the default), IE8 in quirks mode is not supported. In this mode, IE8 allows  
\* one to execute arbitrary javascript by the use of the expression() syntax. Refer  
\* <<http://blogs.msdn.com/b/ie/archive/2008/10/16/ending-expressions.aspx>> to learn more about them.  
\* You can ensure your document is in standards mode and not quirks mode by adding `<!doctype html`  
\* to the top of your HTML document.

\*

\* SCE assists in writing code in way that (a) is secure by default and (b) makes auditing for  
\* security vulnerabilities such as XSS, clickjacking, etc. a lot easier.

\*

\* Here's an example of a binding in a privileged context:

\*

\* ```

```
* <input ng-model="userHtml">
* <div ng-bind-html="userHtml"></div>
```

\* ```

\*

\* Notice that `ng-bind-html` is bound to `userHtml` controlled by the user. With SCE  
\* disabled, this application allows the user to render arbitrary HTML into the DIV.  
\* In a more realistic example, one may be rendering user comments, blog articles, etc. via  
\* bindings. (HTML is just one example of a context where rendering user controlled input creates  
\* security vulnerabilities.)

\*

\* For the case of HTML, you might use a library, either on the client side, or on the server side,  
\* to sanitize unsafe HTML before binding to the value and rendering it in the document.

\*

\* How would you ensure that every place that used these types of bindings was bound to a value that  
\* was sanitized by your library (or returned as safe for rendering by your server?) How can you  
\* ensure that you didn't accidentally delete the line that sanitized the value, or renamed some  
\* properties/fields and forgot to update the binding to the sanitized value?

\*

\* To be secure by default, you want to ensure that any such bindings are disallowed unless you can  
\* determine that something explicitly says it's safe to use a value for binding in that  
\* context. You can then audit your code (a simple grep would do) to ensure that this is only done  
\* for those values that you can easily tell are safe - because they were received from your server,  
\* sanitized by your library, etc. You can organize your codebase to help with this - perhaps  
\* allowing only the files in a specific directory to do this. Ensuring that the internal API  
\* exposed by that code doesn't markup arbitrary values as safe then becomes a more manageable task.

\*

\* In the case of AngularJS' SCE service, one uses { @link ng.\$sce#trustAs \$sce.trustAs }  
\* (and shorthand methods such as { @link ng.\$sce#trustAsHtml \$sce.trustAsHtml }, etc.) to  
\* obtain values that will be accepted by SCE / privileged contexts.

\*

\*

\* ## How does it work?

\*

\* In privileged contexts, directives and code will bind to the result of { @link ng.\$sce#getTrusted  
\* \$sce.getTrusted(context, value) } rather than to the value directly. Directives use { @link  
\* ng.\$sce#parse \$sce.parseAs } rather than `parse` to watch attribute bindings, which performs the

```

* { @link ng.$sce#getTrusted $sce.getTrusted } behind the scenes on non-constant literals.
*
* As an example, { @link ng.directive:ngBindHtml ngBindHtml } uses { @link
* ng.$sce#parseAsHtml $sce.parseAsHtml(binding expression) }. Here's the actual code (slightly
* simplified):
*
* ```
* var ngBindHtmlDirective = ['$sce', function($sce) {
* return function(scope, element, attr) {
* scope.$watch($sce.parseAsHtml(attr.ngBindHtml), function(value) {
* element.html(value || "");
* });
* };
* }];
* ```
*
* ## Impact on loading templates
*
* This applies both to the { @link ng.directive:ngInclude `ng-include` } directive as well as
* `templateUrl`'s specified by { @link guide/directive directives }.
*
* By default, Angular only loads templates from the same domain and protocol as the application
* document. This is done by calling { @link ng.$sce#getTrustedResourceUrl
* $sce.getTrustedResourceUrl } on the template URL. To load templates from other domains and/or
* protocols, you may either either { @link ng.$sceDelegateProvider#resourceUrlWhitelist whitelist
* them } or { @link ng.$sce#trustAsResourceUrl wrap it } into a trusted value.
*
* *Please note*:
*
* The browser's
* [Same Origin Policy](https://code.google.com/p/browsersec/wiki/Part2#Same-origin_policy_for_XMLHttpRequest)
* and [Cross-Origin Resource Sharing (CORS)](http://www.w3.org/TR/cors/)
* policy apply in addition to this and may further restrict whether the template is successfully
* loaded. This means that without the right CORS policy, loading templates from a different domain
* won't work on all browsers. Also, loading templates from `file://` URL does not work on some
* browsers.
*
* ## This feels like too much overhead for the developer?
*
* It's important to remember that SCE only applies to interpolation expressions.
*
* If your expressions are constant literals, they're automatically trusted and you don't need to
* call ` $sce.trustAs ` on them (remember to include the `ngSanitize` module) (e.g.
* `

Open Source Used In Appdynamics_JS_Agent 23.8.0 2317


```

\* The included { @link ng.\$sceDelegate \$sceDelegate } comes with sane defaults to allow you to load templates in `ng-include` from your application's domain without having to even know about SCE. It blocks loading templates from other domains or loading templates over http from an https served document. You can change these by setting your own custom { @link ng.\$sceDelegateProvider#resourceUrlWhitelist whitelists } and { @link ng.\$sceDelegateProvider#resourceUrlBlacklist blacklists } for matching such URLs.

\* This significantly reduces the overhead. It is far easier to pay the small overhead and have an application that's secure and can be audited to verify that with much more ease than bolting security onto an application later.

\* <a name="contexts"></a>

\* ## What trusted context types are supported?

| Context              | Notes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| `\$sce.HTML`         | For HTML that's safe to source into the application. The { @link ng.directive:ngBindHtml ngBindHtml } directive uses this context for bindings. If an unsafe value is encountered and the { @link ngSanitize \$sanitize } module is present this will sanitize the value instead of throwing an error.                                                                                                                                                                                       |
| `\$sce.CSS`          | For CSS that's safe to source into the application. Currently unused. Feel free to use it in your own directives.                                                                                                                                                                                                                                                                                                                                                                            |
| `\$sce.URL`          | For URLs that are safe to follow as links. Currently unused ( `<a href=` and `<img src=` sanitize their urls and don't constitute an SCE context.                                                                                                                                                                                                                                                                                                                                            |
| `\$sce.RESOURCE_URL` | For URLs that are not only safe to follow as links, but whose contents are also safe to include in your application. Examples include `ng-include`, `src` / `ngSrc` bindings for tags other than `IMG` (e.g. `IFRAME`, `OBJECT`, etc.) <br><br>Note that `\$sce.RESOURCE_URL` makes a stronger statement about the URL than `\$sce.URL` does and therefore contexts requiring values trusted for `\$sce.RESOURCE_URL` can be used anywhere that values trusted for `\$sce.URL` are required. |
| `\$sce.JS`           | For JavaScript that is safe to execute in your application's context. Currently unused. Feel free to use it in your own directives.                                                                                                                                                                                                                                                                                                                                                          |

\* ## Format of items in { @link ng.\$sceDelegateProvider#resourceUrlWhitelist resourceUrlWhitelist }/{ @link ng.\$sceDelegateProvider#resourceUrlBlacklist Blacklist } <a name="resourceUrlPatternItem"></a>

\* Each element in these arrays must be one of the following:

\* - **'self'**

\* - The special **string**, **'self'**, can be used to match against all URLs of the **same domain** as the application document using the **same protocol**.

\* - **String** (except the special value **'self'**)

\* - The string is matched against the full **normalized / absolute URL** of the resource being tested (substring matches are not good enough.)

\* - There are exactly **two wildcard sequences** - **'\*'** and **'\*\*'**. All other characters match themselves.

\* - **'\*'**: matches zero or more occurrences of any character other than one of the following 6 characters: **':'**, **"/**, **','**, **'?'**, **'&'** and **'|'**. It's a useful wildcard for use in a whitelist.

\* - **'\*\*'**: matches zero or more occurrences of **any** character. As such, it's not

\* not appropriate to use in for a scheme, domain, etc. as it would match too much. (e.g.  
 \* `http://*.example.com/` would match `http://evil.com/?ignore=.example.com/` and that might  
 \* not have been the intention.) Its usage at the very end of the path is ok. (e.g.  
 \* `http://foo.example.com/templates/`).

\* - **RegExp** (\*see caveat below\*)

\* - **Caveat**: While regular expressions are powerful and offer great flexibility, their syntax  
 \* (and all the inevitable escaping) makes them *harder to maintain*. It's easy to  
 \* accidentally introduce a bug when one updates a complex expression (imho, all regexes should  
 \* have good test coverage.). For instance, the use of ``` in the regex is correct only in a  
 \* small number of cases. A ``` character in the regex used when matching the scheme or a  
 \* subdomain could be matched against a ``` or literal ``` that was likely not intended. It  
 \* is highly recommended to use the string patterns and only fall back to regular expressions  
 \* if they as a last resort.

\* - The regular expression must be an instance of `RegExp` (i.e. not a string.) It is  
 \* matched against the *entire* *normalized / absolute URL* of the resource being tested  
 \* (even when the `RegExp` did not have the `^`` and `$`` codes.) In addition, any flags  
 \* present on the `RegExp` (such as `multiline`, `global`, `ignoreCase`) are ignored.

\* - If you are generating your JavaScript from some other templating engine (not  
 \* recommended, e.g. in issue [#4006](https://github.com/angular/angular.js/issues/4006)),  
 \* remember to escape your regular expression (and be aware that you might need more than  
 \* one level of escaping depending on your templating engine and the way you interpolated  
 \* the value.) Do make use of your platform's escaping mechanism as it might be good  
 \* enough before coding your own. e.g. Ruby has  
 \* `[Regexp.escape(str)]`(<http://www.ruby-doc.org/core-2.0.0/Regexp.html#method-c-escape>)  
 \* and Python has `[re.escape]`(<http://docs.python.org/library/re.html#re.escape>).  
 \* Javascript lacks a similar built in function for escaping. Take a look at Google  
 \* Closure library's `[goog.string.regExpEscape(s)]`(  
 \* [http://docs.closure-library.googlecode.com/git/closure\\_goog\\_string\\_string.js.source.html#line962](http://docs.closure-library.googlecode.com/git/closure_goog_string_string.js.source.html#line962)).

\*  
 \* Refer `{ @link ng.$sceDelegateProvider $sceDelegateProvider }` for an example.

\*  
 \* **## Show me an example using SCE.**

\*  
 \* `<example module="mySceApp" deps="angular-sanitize.js">`  
 \* `<file name="index.html">`  
 \* `<div ng-controller="myAppController as myCtrl">`  
 \* `<i ng-bind-html="myCtrl.explicitlyTrustedHtml" id="explicitlyTrustedHtml"></i><br><br>`  
 \* `<b>User comments</b><br>`  
 \* By default, HTML that isn't explicitly trusted (e.g. Alice's comment) is sanitized when  
 \* `$sanitize` is available. If `$sanitize` isn't available, this results in an error instead of an  
 \* exploit.  
 \* `<div class="well">`  
 \* `<div ng-repeat="userComment in myCtrl.userComments">`  
 \* `<b>{{ userComment.name }}</b>:`  
 \* `<span ng-bind-html="userComment.htmlComment" class="htmlComment"></span>`  
 \* `<br>`  
 \* `</div>`  
 \* `</div>`

```

* </div>
* </file>
*
* <file name="script.js">
* var mySceApp = angular.module('mySceApp', ['ngSanitize']);
*
* mySceApp.controller("myAppController", function myAppController($http, $templateCache, $sce) {
* var self = this;
* $http.get("test_data.json", {cache: $templateCache}).success(function(userComments) {
* self.userComments = userComments;
* });
* self.explicitlyTrustedHtml = $sce.trustAsHtml(
* '<span onmouseover="this.textContent="Explicitly trusted HTML bypasses ' +
* 'sanitization."">Hover over this text.');
* });
* </file>
*
* <file name="test_data.json">
* [
* { "name": "Alice",
* "htmlComment":
* "Is <i>anyone</i> reading this?"
* },
* { "name": "Bob",
* "htmlComment": "<i>Yes!</i> Am I the only other one?"
* }
*]
* </file>
*
* <file name="protractor.js" type="protractor">
* describe('SCE doc demo', function() {
* it('should sanitize untrusted values', function() {
* expect(element.all(by.css('.htmlComment')).first().getInnerHtml())
* .toBe('Is <i>anyone</i> reading this?');
* });
*
* it('should NOT sanitize explicitly trusted values', function() {
* expect(element(by.id('explicitlyTrustedHtml')).getInnerHtml()).toBe(
* '<span onmouseover="this.textContent="Explicitly trusted HTML bypasses ' +
* 'sanitization."">Hover over this text.');
* });
* });
* </file>
* </example>
*
*
*
* ## Can I disable SCE completely?

```



```

*
* Yes, you can. However, this is strongly discouraged. SCE gives you a lot of security benefits
* for little coding overhead. It will be much harder to take an SCE disabled application and
* either secure it on your own or enable SCE at a later stage. It might make sense to disable SCE
* for cases where you have a lot of existing code that was written before SCE was introduced and
* you're migrating them a module at a time.
*
* That said, here's how you can completely disable SCE:
*
* ```
* angular.module('myAppWithSceDisabledmyApp', []).config(function($sceProvider) {
* // Completely disable SCE. For demonstration purposes only!
* // Do not use in new projects.
* $sceProvider.enabled(false);
* });
* ```
*
*/

```

Found in path(s):

```

* /opt/cola/permits/1685982475_1684868876.2755835/0/angular-1-2-28-tgz/package/angular.js

```

# 1.171 closure-compiler-rhino v20140407

## 1.171.1 Available under license :

No license file was found, but licenses were detected in source scan.

```

/* This Source Code Form is subject to the terms of the Mozilla Public
* License, v. 2.0. If a copy of the MPL was not distributed with this
* file, You can obtain one at http://mozilla.org/MPL/2.0/. */

```

Found in path(s):

```

* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/optimizer/OptFunctionNode.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/SecureCaller.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/commonjs/module/Require.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/annotations/JSConstructor.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/annotations/JSGetter.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/commonjs/module/provider/SoftCachingModuleScriptProvider.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/DefiningClassLoader.java
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-

```

jar/org/mozilla/javascript/commonjs/module/provider/ParsedContentType.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/StrongCachingModuleScriptProvider.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/annotations/JFunction.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/PolicySecurityController.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/ModuleScript.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/RhinoSecurityManager.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/optimizer/OptTransformer.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/ModuleSourceProviderBase.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/DefaultUrlConnectionExpiryCalculator.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/RequireBuilder.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/annotations/JStaticFunction.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/UrlModuleSourceProvider.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/CachingModuleScriptProviderBase.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/optimizer/Optimizer.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/MultiModuleScriptProvider.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ScriptStackElement.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/ModuleSourceProvider.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/UrlConnectionSecurityDomainProvider.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/ModuleScope.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/optimizer/Block.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/optimizer/OptRuntime.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/ModuleScriptProvider.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/annotations/JSetter.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/commonjs/module/provider/ModuleSource.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-

jar/org/mozilla/javascript/commonjs/module/provider/URLConnectionExpiryCalculator.java

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```
/* -*- Mode: java; tab-width: 4; indent-tabs-mode: 1; c-basic-offset: 4 -*-
```

```
*
```

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```

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```

```
* file, You can obtain one at http://mozilla.org/MPL/2.0/. */
```

Found in path(s):

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/IdScriptableObject.java
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/NativeMath.java
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/NativeJSON.java
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/json/JsonParser.java
```

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```

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```

```
jar/org/mozilla/javascript/v8dtoa/CachedPowers.java
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/v8dtoa/DiyFp.java
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/v8dtoa/DoubleHelper.java
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
```

```
jar/org/mozilla/javascript/v8dtoa/FastDtoa.java
```

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USING IDSWITCH GENERATOR TOOL

Usage:

```
java org.mozilla.javascript.tools.idswitch.Main <SINGLE-JAVA-SOURCE>
```

The main purpose of this utility is to generate Java code to map strings to some ids that can be used, for example, in a switch statement.

The utility scans the input file for lines with the following structure:

```
// #string_id_map#
... <DEFINITION AREA>
// #generated#
...<GENERATED AREA>
// #/generated#
... <DEFINITION AREA>
// #/string_id_map#
```

Then every line in <DEFINITION AREA> is scanned for the pattern:

```
^[\t]*Id_([0-9a-zA-Z_]+)[\t]*=.*$
```

Each such patterns adds a mapping from string \$1 to Id\_\ $\backslash$ \$ or if the line also contains the pattern

```
//\s*#string=\s*(\[^\#\]+\)\s*#, then it adds map of $1 in this pattern to Id_\ \backslash $
```

After that lines in <GENERATED AREA> are replaced by a code block that sets variable "id" to Id\_<name> if variable "s" equals <name> (or value defined by //string=...# construction in the line with Id\_<name>) or 0 otherwise.

If the new code for <GENERATED AREA> is identical to old one, the file is not touched otherwise

<GENERATED AREA> is overwritten by the new code and a time stamp is appended after #generated#.

For example, if file x.java contains:

```
// #string_id_map#

private int getId(String s) {
 int id;
// #generated# Initial version
// #/generated#
 return id;
}

private static final int
 Id_x = 1,
 Id_y = 2,
 Id_hello = 3, // #string = Hello, World! #
 Id_symbols = 4, // #string=<<*Symbols*>>#
 Id_nice = 5,
 Id_for = 6,
 Id_bar = 7;
```

```
// #/string_id_map#

....

private double getFieldValue(String s) {

// #string_id_map#
final int
 Id_field1 = 1,
 Id_field2 = 2,
 Id_field3 = 3,
 Id_one_more_field = 4; // #string = ONE%MORE%FIELD#

 int id;
// #generated# Initial version
// #/generated#
// #/string_id_map#
 switch (id) {
 case Id_field1: return field1;
 case Id_field2: return field2;
 case Id_field3: return field3;
 case Id_one_more_field: return one_more_field;
 }
 throw new RuntimeException("No such field");
}
}
```

then invocation

```
java org.mozilla.javascript.tools.idswitch.Main x.java
```

would replace that by a code fragment similar to:

```
// #string_id_map#

private int getId(String s) {
 int id;
// #generated# Last update: 2001-05-25 18:00:24 GMT+02:00
 L0: { id = 0; String X = null; int c;
 L: switch (s.length()) {
 case 1: c=s.charAt(0);
 if (c=='x') { id=Id_x; break L0; }
 else if (c=='y') { id=Id_y; break L0; }
 break L;
 case 3: c=s.charAt(0);
 if (c=='b') { if (s.charAt(2)=='r' && s.charAt(1)=='a') {id=Id_bar; break L0;} }
 else if (c=='f') { if (s.charAt(2)=='r' && s.charAt(1)=='o') {id=Id_for; break L0;} }
 break L;
 }
 }
}
```

```

 case 4: X="nice";id=Id_nice; break L;
 case 13: c=s.charAt(0);
 if (c=='<') { X="<<*Symbols*>>";id=Id_symbols; }
 else if (c=='H') { X="Hello, World!";id=Id_hello; }
 break L;
 }
 if (X!=null && X!=s && !X.equals(s)) id = 0;
 }
}
// #generated#
return id;
}

private static final int
 Id_x = 1,
 Id_y = 2,
 Id_hello = 3, // #string = Hello, World! #
 Id_symbols = 4, // #string=<<*Symbols*>>#
 Id_nice = 5,
 Id_for = 6,
 Id_bar = 7;

// #/string_id_map#

....

private double getFieldValue(String s) {

// #string_id_map#
final int
 Id_field1 = 1,
 Id_field2 = 2,
 Id_field3 = 3,
 Id_one_more_field = 4; // #string = ONE%MORE%FIELD#

 int id;
// #generated# Last update: 2001-05-25 16:48:50 GMT+02:00
 L0: { id = 0; String X = null; int c;
 int s_length = s.length();
 if (s_length==6) {
 c=s.charAt(5);
 if (c=='1') { X="field1";id=Id_field1; }
 else if (c=='2') { X="field2";id=Id_field2; }
 else if (c=='3') { X="field3";id=Id_field3; }
 }
 else if (s_length==14) { X="ONE%MORE%FIELD";id=Id_one_more_field; }
 if (X!=null && X!=s && !X.equals(s)) id = 0;
 }
}
// #generated#

```

```
// #/string_id_map#
switch (id) {
 case Id_field1: return field1;
 case Id_field2: return field2;
 case Id_field3: return field3;
 case Id_one_more_field: return one_more_field;
}
throw new RuntimeException("No such field");
}
```

Found in path(s):

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/tools/idswitch/README
```

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```

Found in path(s):

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/build.xml
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/commonjs/module/provider/package.html
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/tools/debugger/build.xml
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/commonjs/module/package.html
```

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// throws a special exception. This ensures execution of all pending
```

Found in path(s):

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/NativeGenerator.java
```

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* file, You can obtain one at http://mozilla.org/MPL/2.0/. */
/*
```

```
* During the great date rewrite of 1.3, we tried to track the
```

```
* evolving ECMA standard, which then had a definition of
* getYear which always subtracted 1900. Which we
* implemented, not realizing that it was incompatible with
* the old behavior... now, rather than thrash the behavior
* yet again, we've decided to leave it with the - 1900
* behavior and point people to the getFullYear method. But
* we try to protect existing scripts that have specified a
* version...
*/
```

Found in path(s):

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/ContextFactory.java
```

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Found in path(s):

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/resources/Messages.properties
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/resources/Messages_fr.properties
```

```
* /opt/cola/permits/1685982655_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-
jar/org/mozilla/javascript/tools/resources/Messages.properties
```

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```
/* -*- Mode: java; tab-width: 8; indent-tabs-mode: nil; c-basic-offset: 4 -*-
```

```
*
```

```
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```

```
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```

```
* file, You can obtain one at http://mozilla.org/MPL/2.0/. */
```

```
/**
```

```
* This interface defines a protocol for the reporting of
```

```
* errors during JavaScript translation in IDE-mode.
```

```
* If the {@link org.mozilla.javascript.Parser}'s error reporter is
```

```
* set to an instance of this interface, then this interface's
```

```
* {@link #warning} and {@link #error} methods are called instead
```

```
* of the {@link org.mozilla.javascript.ErrorReporter} versions. <p>
```

```
*
```

```
* These methods take a source char offset and a length. The
```

```
* rationale is that in interactive IDE-type environments, the source
```

```
* is available and the IDE will want to indicate where the error
```

```
* occurred and how much code participates in it. The start and length
```

```
* are generally chosen to fit within a single line, for readability,
```

```
* but the client is free to use the AST to determine the affected
```

```
* node(s) from the start position and change the error or warning's
```

```
* display bounds.<p>
```

```
*
```



\*/

Found in path(s):

\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/ast/IdeErrorReporter.java

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\*

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\*\*\*\*\*

\*

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\*

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\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/DToA.java

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Found in path(s):

\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/ast/ThrowStatement.java

\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/ast/TryStatement.java

\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-

jar/org/mozilla/javascript/BaseFunction.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/classfile/ByteCode.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ContinuationPending.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/Kit.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/CompilerEnvirons.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/debug/DebuggableScript.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/NodeVisitor.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/Icode.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/UniqueTag.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/ScriptNode.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/NativeJavaArray.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/NativeJavaTopPackage.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/ErrorNode.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/JavaScriptException.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/FunctionCall.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/regexp/NativeRegExp.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/Script.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/Callable.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/NativeJavaObject.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/AstRoot.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/NativeWith.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/ConditionalExpression.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/ErrorCollector.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ClassShutter.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-

jar/org/mozilla/classfile/ClassFileWriter.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/ArrayComprehensionLoop.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/NativeBoolean.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/ParseProblem.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/optimizer/ClassCompiler.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/Context.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/TopLevel.java  
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\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/GeneratorExpression.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/xml/XMLObject.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/XMLLiteral.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/InterpreterData.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/ast/Yield.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-  
jar/org/mozilla/javascript/RegExpProxy.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-



jar/org/mozilla/javascript/InterfaceAdapter.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/LazilyLoadedCtor.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/Synchronizer.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/ast/NumberLiteral.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/debug/DebuggableObject.java  
\* /opt/cola/permits/1685982655\_1684869290.66224/0/closure-compiler-rhino-v20140407-sources-1-jar/org/mozilla/javascript/VMBridge.java

# 1.172 apache-commons-pool 2.4.2

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# 1.173 selenium-opera-driver 3.3.1

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```
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jar/org/openqa/selenium/opera/OperaOptions.java
* /opt/cola/permits/1685982325_1684868995.4294147/0/selenium-opera-driver-3-3-1-sources-
jar/org/openqa/selenium/opera/OperaDriverService.java
* /opt/cola/permits/1685982325_1684868995.4294147/0/selenium-opera-driver-3-3-1-sources-
jar/org/openqa/selenium/opera/OperaDriver.java
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```
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/w3c_event3.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/w3c_css3d.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/webgl.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/google.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/webkit_notifications.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/fileapi.js
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*/
/**
* https://w3c.github.io/longtasks/#taskattributiontiming
* @constructor
* @extends {PerformanceEntry}
*/
/** @type {!Array<!TaskAttributionTiming>} */
```

Found in path(s):

```
*/opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-
zip/browser/w3c_navigation_timing.js
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zip/browser/w3c_midi.js
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zip/browser/w3c\_anim\_timing.js

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zip/browser/intersection\_observer.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/webkit\_usercontent.js

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zip/browser/w3c\_screen\_orientation.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_dom4.js

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zip/browser/webkit\_dom.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/gecko\_xml.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/ie\_event.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_selectors.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/gecko\_dom.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/ie\_dom.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/html5.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_dom1.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/gecko\_event.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_dom2.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_css.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_range.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_event.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/webkit\_css.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/flash.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/window.js
- \* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_dom3.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/ie\_css.js  
\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_xml.js  
\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/gecko\_css.js  
\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/es3.js  
\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/deprecated.js

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zip/browser/intl.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/v8.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_device\_sensor\_event.js

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zip/browser/page\_visibility.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_permissions.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/streamsapi.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/url.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_pointerlock.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_webcrypto.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/whatwg\_encoding.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_batterystatus.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_requestidlecallback.js

\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_touch\_event.js

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```
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/es5.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/browser/w3c_geolocation.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/browser/iphone.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/browser/webkit_event.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/browser/w3c_elementtraversal.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/browser/webstorage.js
* /opt/cola/permits/1685982253_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-zip/browser/ie_vml.js
```

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zip/browser/mediakeys.js

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zip/browser/w3c\_indexeddb.js

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zip/browser/es6\_proxy.js

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\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/mediasource.js  
\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_eventsource.js  
\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/w3c\_rtc.js

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\* /opt/cola/permits/1685982253\_1684882396.5132768/0/closure-compiler-externs-v20180204-jar/externs-  
zip/browser/web\_app\_manifest.js

## 1.175 google-guava 14.0.1-rc1



## 1.175.1 Available under license :

Doug Lea

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## 1.176 jsinterop-annotations 1.0.0

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```

Found in path(s):

```
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsOverlay.java
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsMethod.java
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsFunction.java
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsProperty.java
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsPackage.java
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsIgnore.java
```

```
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsType.java
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsConstructor.java
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```
* /opt/cola/permits/1112386333_1607077189.95/0/jsinterop-annotations-1-0-0-sources-1-
jar/jsinterop/annotations/JsOptional.java
```

## 1.177 asm-debug-all 5.0.2

## 1.178 slf4j-api-module 1.7.25

## 1.179 dom4j-flexible-xml-framework-for-java

### 1.6.1

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File: ConcurrentReaderHashMap
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History:

| Date      | Who | What                               |
|-----------|-----|------------------------------------|
| 28oct1999 | dl  | Created                            |
| 14dec1999 | dl  | jmm snapshot                       |
| 19apr2000 | dl  | use barrierLock                    |
| 12jan2001 | dl  | public release                     |
| 17nov2001 | dl  | Minor tunings                      |
| 20may2002 | dl  | BarrierLock can now be serialized. |
| 09dec2002 | dl  | Fix interference checks.           |

\*/

Found in path(s):

\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/tree/ConcurrentReaderHashMap.java  
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 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-  
 jar/org/dom4j/tree/FlyweightComment.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/io/JAXPHelper.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/bean/BeanAttributeList.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/tree/DefaultNamespace.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/dom/DOMText.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/util/UserDataElement.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-  
 jar/org/dom4j/dom/DOMAttributeNodeMap.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/rule/NullAction.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-  
 jar/org/dom4j/tree/DefaultProcessingInstruction.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/ElementHandler.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/dom/DOMComment.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-  
 jar/org/dom4j/swing/XMLTableModel.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/util/NodeComparator.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/IllegalAddException.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/jaxb/JAXBReader.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/io/STAXEventReader.java  
 \* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-  
 jar/org/dom4j/tree/DefaultDocumentType.java



\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/swing/XMLTableColumnDefinition.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/rule/pattern/NodeTypePattern.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/tree/FlyweightEntity.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/io/DocumentInputSource.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/Text.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/io/SAXModifier.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/tree/ContentListFacade.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/dom/DOMProcessingInstruction.java  
\* /opt/cola/permits/1010092607\_1614875665.1/0/dom4j-1-6-1-sources-3-jar/org/dom4j/dom/DOMDocumentType.java  
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## 1.180 snappy 0.4

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* /opt/cola/permits/1685982559_1684869122.2200658/0/cssparser-0-9-21-sources-jar/META-INF/maven/net.sourceforge.cssparser/cssparser/pom.xml
```

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```
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```

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- \*/

Found in path(s):

- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/ExceptionResource.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/SelectorListImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/dom/CounterImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/selectors/SelectorFactoryImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/selectors/OneOfAttributeConditionImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/selectors/GeneralAdjacentSelectorImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/dom/CSSStyleRuleImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/dom/RGBColorImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/util/ThrowCssExceptionHandler.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/sac/DocumentHandlerExt.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/selectors/LangConditionImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/userdata/UserDataConstants.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/format/CSSFormatable.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/dom/CSSStyleSheetListImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/SACParser.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/selectors/ElementSelectorImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/util/Output.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/selectors/PseudoClassConditionImpl.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/ParserUtils.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/AbstractSACParser.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-jar/com/steadystate/css/parser/HandlerBase.java
- \* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-

jar/com/steadystate/css/parser/LocatorImpl.java  
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jar/com/steadystate/css/parser/selectors/PseudoElementSelectorImpl.java  
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jar/com/steadystate/css/dom/CSSOMObjectImpl.java  
\* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-  
jar/com/steadystate/css/dom/CSSStyleSheetImpl.java  
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jar/com/steadystate/css/dom/CSSMediaRuleImpl.java  
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jar/com/steadystate/css/dom/Property.java  
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jar/com/steadystate/css/dom/CSSRuleListImpl.java  
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jar/com/steadystate/css/parser/selectors/ConditionalSelectorImpl.java  
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jar/com/steadystate/css/parser/selectors/SubstringAttributeConditionImpl.java  
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jar/com/steadystate/css/dom/CSSUnknownRuleImpl.java  
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jar/com/steadystate/css/parser/selectors/AttributeConditionImpl.java  
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jar/com/steadystate/css/format/CSSFormat.java  
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jar/com/steadystate/css/parser/selectors/DirectAdjacentSelectorImpl.java  
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jar/com/steadystate/css/dom/CSSValueImpl.java  
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\* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-  
jar/com/steadystate/css/parser/LexicalUnitImpl.java  
\* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-  
jar/com/steadystate/css/parser/selectors/SuffixAttributeConditionImpl.java  
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jar/com/steadystate/css/dom/CSSImportRuleImpl.java  
\* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-  
jar/com/steadystate/css/parser/selectors/ClassConditionImpl.java  
\* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-  
jar/com/steadystate/css/parser/selectors/BeginHyphenAttributeConditionImpl.java  
\* /opt/cola/permits/1685982559\_1684869122.2200658/0/cssparser-0-9-21-sources-  
jar/com/steadystate/css/parser/Locatable.java

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