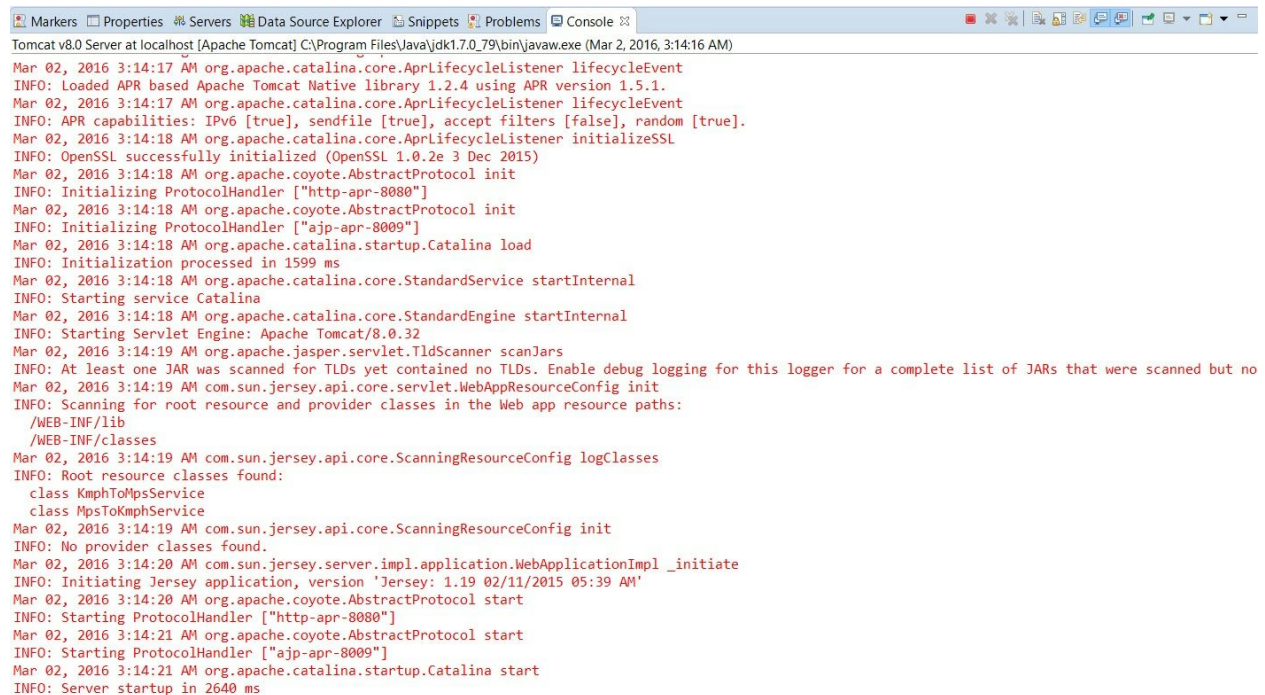


LAB ASSIGNMENT - 6

1. Creating a web proxy server to integrate data from REST services for speed conversion i.e from metre/sec to km/hr and from km/hr to meter/sec

-> Create a dynamic web project and create two classes with the code for the conversion of speed units

-> Convert the project to Maven project and build the project. After the build gets success run on the server

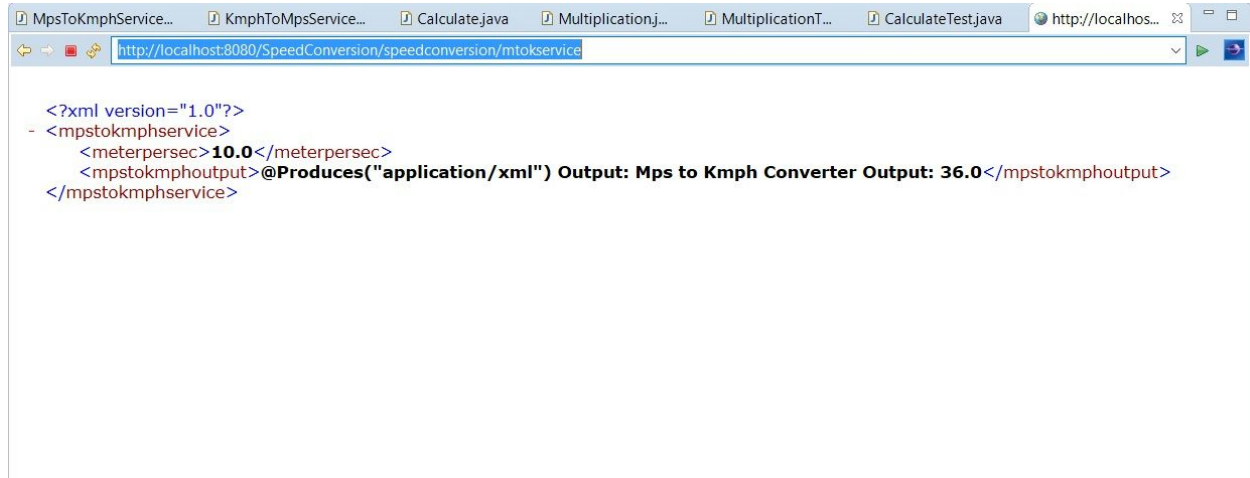


The screenshot shows the console output of an IDE, likely Eclipse, displaying the startup logs of an Apache Tomcat v8.0 server. The logs are timestamped and show the progression of the server starting up, including loading the APR library, initializing SSL, and starting the Catalina service. The logs also show the scanning of root resource classes and the initiation of the Jersey application.

```
Tomcat v8.0 Server at localhost [Apache Tomcat] C:\Program Files\Java\jdk1.7.0_79\bin\javaw.exe (Mar 2, 2016, 3:14:16 AM)
Mar 02, 2016 3:14:17 AM org.apache.catalina.core.AprLifecycleListener lifecycleEvent
INFO: Loaded APR based Apache Tomcat Native library 1.2.4 using APR version 1.5.1.
Mar 02, 2016 3:14:17 AM org.apache.catalina.core.AprLifecycleListener lifecycleEvent
INFO: APR capabilities: IPv6 [true], sendfile [true], accept filters [false], random [true].
Mar 02, 2016 3:14:18 AM org.apache.catalina.core.AprLifecycleListener initializeSSL
INFO: OpenSSL successfully initialized (OpenSSL 1.0.2e 3 Dec 2015)
Mar 02, 2016 3:14:18 AM org.apache.coyote.AbstractProtocol init
INFO: Initializing ProtocolHandler ["http-apr-8080"]
Mar 02, 2016 3:14:18 AM org.apache.coyote.AbstractProtocol init
INFO: Initializing ProtocolHandler ["ajp-apr-8009"]
Mar 02, 2016 3:14:18 AM org.apache.catalina.startup.Catalina load
INFO: Initialization processed in 1599 ms
Mar 02, 2016 3:14:18 AM org.apache.catalina.core.StandardService startInternal
INFO: Starting service Catalina
Mar 02, 2016 3:14:18 AM org.apache.catalina.core.StandardEngine startInternal
INFO: Starting Servlet Engine: Apache Tomcat/8.0.32
Mar 02, 2016 3:14:19 AM org.apache.jasper.servlet.TldScanner scanJars
INFO: At least one JAR was scanned for TLDs yet contained no TLDs. Enable debug logging for this logger for a complete list of JARs that were scanned but no
Mar 02, 2016 3:14:19 AM com.sun.jersey.api.core.servlet.WebAppResourceConfig init
INFO: Scanning for root resource and provider classes in the Web app resource paths:
/WEB-INF/lib
/WEB-INF/classes
Mar 02, 2016 3:14:19 AM com.sun.jersey.api.core.ScanningResourceConfig logClasses
INFO: Root resource classes found:
class KmPhToMpsService
class MpsToKmPhService
Mar 02, 2016 3:14:19 AM com.sun.jersey.api.core.ScanningResourceConfig init
INFO: No provider classes found.
Mar 02, 2016 3:14:20 AM com.sun.jersey.server.impl.application.WebApplicationImpl _initiate
INFO: Initiating Jersey application, version 'Jersey: 1.19 02/11/2015 05:39 AM'
Mar 02, 2016 3:14:20 AM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["http-apr-8080"]
Mar 02, 2016 3:14:21 AM org.apache.coyote.AbstractProtocol start
INFO: Starting ProtocolHandler ["ajp-apr-8009"]
Mar 02, 2016 3:14:21 AM org.apache.catalina.startup.Catalina start
INFO: Server startup in 2640 ms
```


-> A server window gets opened and now specify the path assigned in the code then the output will be published on to the server

Output for meterpersec to kmperhour conversion :



```
<?xml version="1.0"?>
- <mpstokmphservice>
  <meterpersec>10.0</meterpersec>
  <mpstokmphoutput>@Produces("application/xml") Output: Mps to Kmph Converter Output: 36.0</mpstokmphoutput>
</mpstokmphservice>
```

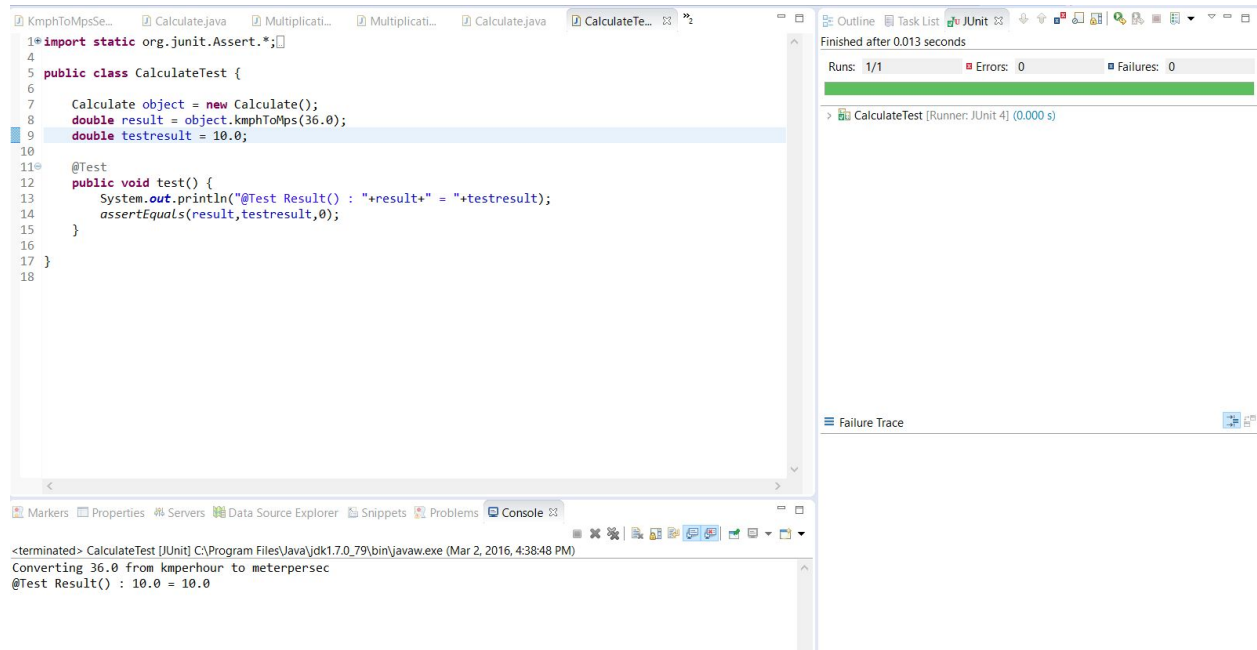
Output for kmperhour to meterpersec conversion :



```
<?xml version="1.0"?>
- <kmphptompservice>
  <kmperhour>36.0</kmperhour>
  <kmphptompsoutput>@Produces("application/xml") Output: Kmph to Mps Converter Output: 10.0</kmphptompsoutput>
</kmphptompservice>
```

2. Create a class Calculate with the conversion function and create a new JUnit test case on the Calculate class.

Test case 1 (success) :



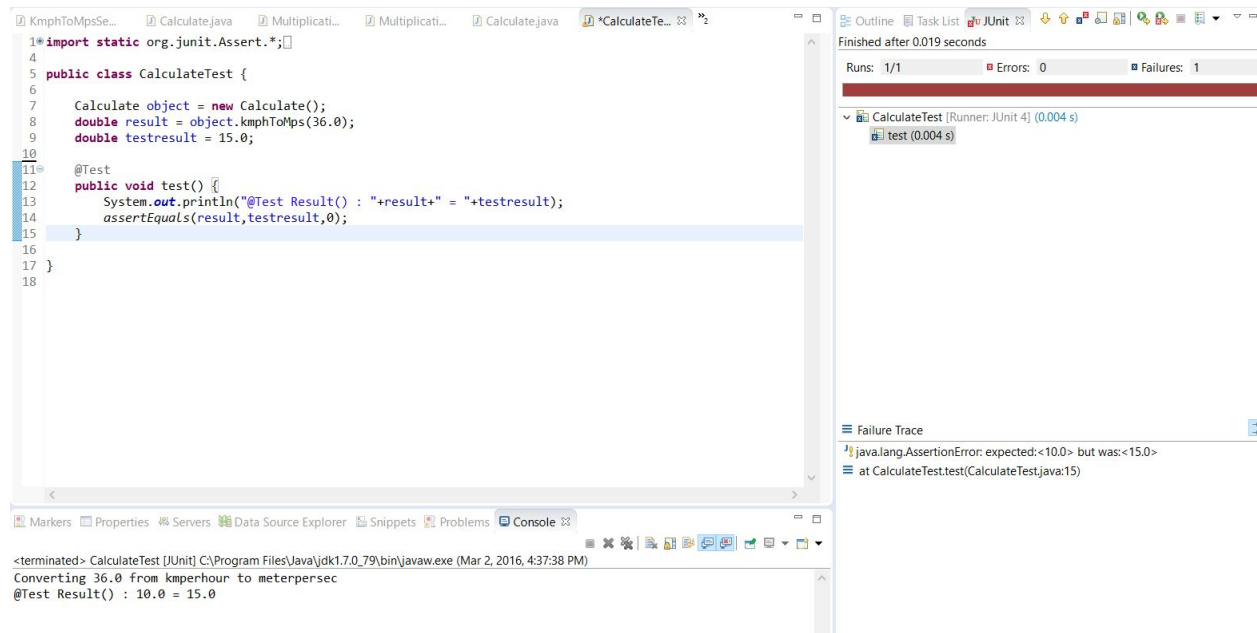
The screenshot shows an IDE with the following components:

- Editor:** Contains the `CalculateTest` class with the following code:

```
1 *import static org.junit.Assert.*;
4
5 public class CalculateTest {
6
7     Calculate object = new Calculate();
8     double result = object.kmphToMps(36.0);
9     double testresult = 10.0;
10
11     @Test
12     public void test() {
13         System.out.println("@Test Result() : "+result+" = "+testresult);
14         assertEquals(result,testresult,0);
15     }
16
17 }
18
```
- JUnit Runner:** Shows "Finished after 0.013 seconds". Summary: Runs: 1/1, Errors: 0, Failures: 0. A green progress bar indicates success.
- Console:** Displays the output:

```
<terminated> CalculateTest [JUnit] C:\Program Files\Java\jdk1.7.0_79\bin\javaw.exe (Mar 2, 2016, 4:38:48 PM)
Converting 36.0 from kmperhour to meterpersec
@Test Result() : 10.0 = 10.0
```

Test case 2 (failure) :



The screenshot shows the same IDE as before, but with a failed test run:

- Editor:** The `CalculateTest` class is modified. The `testresult` is now 15.0:

```
1 *import static org.junit.Assert.*;
4
5 public class CalculateTest {
6
7     Calculate object = new Calculate();
8     double result = object.kmphToMps(36.0);
9     double testresult = 15.0;
10
11     @Test
12     public void test() {
13         System.out.println("@Test Result() : "+result+" = "+testresult);
14         assertEquals(result,testresult,0);
15     }
16
17 }
18
```
- JUnit Runner:** Shows "Finished after 0.019 seconds". Summary: Runs: 1/1, Errors: 0, Failures: 1. A red progress bar indicates failure.
- Failure Trace:** Displays the error message:

```
java.lang.AssertionError: expected:<10.0> but was:<15.0>
    at CalculateTest.test(CalculateTest.java:15)
```
- Console:** Displays the output:

```
<terminated> CalculateTest [JUnit] C:\Program Files\Java\jdk1.7.0_79\bin\javaw.exe (Mar 2, 2016, 4:37:38 PM)
Converting 36.0 from kmperhour to meterpersec
@Test Result() : 10.0 = 15.0
```