Running Tests with Maven

**1:** Writing a code to demonstrate Maven-surefire-plugin

Below is the Surefile Plugin. This Plugin (code below) needs to be added to the Page Object Model “POM” file in xml format.

* Add the below Surefile to POM

<build>

<plugins>

<plugin>

<groupId>org.apache.maven.plugins</groupId>

<artifactId>maven-surefire-plugin</artifactId>

<version>2.22.0</version>

</plugin>

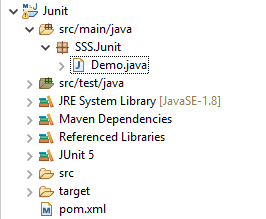
</plugins>

</build>

**2:** Explaining the structure of a Maven project

* Below is a simple Java project which will guide us on how to run the unit test classes in the Maven project. This is the directory structure for creating a Maven project which essentially includes the Junit test cases, JRE system library, maven dependencies, Junit 5 library, and the POM XML file.

**Directory Structure**



**3:** Demonstrating Maven + JUnit5 examples

* Below is the sample POM file with all the dependencies and other annotations:

<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/xsd/maven-4.0.0.xsd"*>

<modelVersion>4.0.0</modelVersion>

<artifactId>junit-jupiter-params</artifactId>

<version>0.0.1-SNAPSHOT</version>

<packaging>jar</packaging>

<name>Junit</name>

<url>http://maven.apache.org</url>

<properties>

<maven.compiler.source>1.9</maven.compiler.source>

<maven.compiler.target>1.9</maven.compiler.target>

</properties>

<build>

<plugins>

<plugin>

<groupId>org.apache.maven.plugins</groupId>

<artifactId>maven-surefire-plugin</artifactId>

<version>2.22.0</version>

</plugin>

</plugins>

</build>

<dependencies>

<dependency>

<groupId>junit</groupId>

<artifactId>junit</artifactId>

<version>3.8.1</version>

<scope>test</scope>

</dependency>

<!-- https://mvnrepository.com/artifact/org.junit.jupiter/junit-jupiter-api -->

<dependency>

<groupId>org.junit.jupiter</groupId>

<artifactId>junit-jupiter-api</artifactId>

<version>5.2.0</version>

<scope>test</scope>

</dependency>

<!-- https://mvnrepository.com/artifact/org.junit.jupiter/junit-jupiter-engine -->

<dependency>

<groupId>org.junit.jupiter</groupId>

<artifactId>junit-jupiter-engine</artifactId>

<version>5.2.0</version>

<scope>test</scope>

</dependency>

<dependency>

<groupId>org.junit.jupiter</groupId>

<artifactId>junit-jupiter-params</artifactId>

<version>5.0.0</version>

<scope>test</scope>

</dependency>

</dependencies>

<groupId>org.junit.jupiter</groupId>

</project>

**4:** Demonstrating Java Classes to run the Maven Script

* We have already created a complete Maven project structure above with Java source code. Now we will create different Java classes in the *./src/main/*java/packages/class(s). It also created an example test class in *./src/test/*. In the root folder, there is a *pom.xml* file.

**4.1: MagicBuilder.java**

MagicBuilder.java

**package** SSS.Junit;  
public class MagicBuilder {

public static int getLucky() {

return 7;

}

}

Textbuild.java

**package** SSS.Junit;  
  
public class Textbuild {

public static String getHelloWorld(){

return "hello world";

}

public static int getNumber10(){

return 10;

}

}

**4.2 Test class for MagicBuilder**

TestMagicBuilder.java

**package** SSS.Junit;  
  
import org.junit.jupiter.api.Test;

import static org.junit.jupiter.api.Assertions.assertEquals;

public class TestMagicBuilder {

@Test

public void testLucky() {

assertEquals(7, MagicBuilder.getLucky());

}

}

**4.3: Test class for Textbuild**

pom.xml

**package** SSS.Junit;  
  
import org.junit.jupiter.api.Test;

import static org.junit.jupiter.api.Assertions.assertEquals;

public class Msgbuild {

@Test

public void testHelloWorld() {

assertEquals("hello world", Textbuild.getHelloWorld());

}

@Test

public void testNumber10() {

assertEquals(10, Textbuild.getNumber10());

}

}

## **5:** Executing Maven Test

* While we run the POM and class files with Maven, the below results will be generated at the console:

**Run all test classes**

$ mvn test

[INFO] -------------------------------------------------------

[INFO] T E S T S

[INFO] -------------------------------------------------------

[INFO] Running SSS.Junit.TestMagicBuilder

[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.004 s - in SSS.Junit.TestMagicBuilder

[INFO] Running SSS.Junit.Msgbuild

[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.001 s - in SSS.Junit.Msgbuild

[INFO]

**Run a single test class Msgbuild**

Terminal

$ mvn -Dtest=Msgbuild test

[INFO] -------------------------------------------------------

[INFO] T E S T S

[INFO] -------------------------------------------------------

[INFO] Running SSS.Junit.Msgbuild

[INFO] Tests run: 2, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.004 s - in SSS.Junit.Msgbuild

[INFO]

**Run a single test method testHelloWorld() from the test class Msgbuild**

Terminal

$ mvn -Dtest=Msgbuild#testHelloWorld test

[INFO] -------------------------------------------------------

[INFO] T E S T S

[INFO] -------------------------------------------------------

[INFO] Running SSS.Junit.Msgbuild

[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.004 s - in SSS.Junit.Msgbuild

[INFO]