

# BUILD AND RELEASE MANAGEMENT LAB FILE

## EXPERIMENT 6

### AIM :

Create a simple Maven Project using CLI.

### SOLUTION :

- Running the 'mvn --version' command to check the maven version and other details.

```
C:\Program Files\apache-maven-3.6.3-bin\apache-maven-3.6.3>mvn --version
Apache Maven 3.6.3 (cecedd343002696d0abb50b32b541b8a6ba2883f)
Maven home: C:\Program Files\apache-maven-3.6.3-bin\apache-maven-3.6.3\bin\..
Java version: 1.8.0_281, vendor: Oracle Corporation, runtime: C:\Program Files\Java\jdk1.8.0_281\jre
Default locale: en_IN, platform encoding: Cp1252
OS name: "windows 10", version: "10.0", arch: "amd64", family: "windows"

C:\Program Files\apache-maven-3.6.3-bin\apache-maven-3.6.3>
```

### LAB EXERCISE 6

- Creating a Maven project.

```
C:\Users\Himanshu\eclipse-workspace>mvn archetype:generate -DgroupId=com.mycompany.app -DartifactId=my-app
-DarchetypeVersion=1.4 -DinteractiveMode=false
[INFO] Scanning for projects...
[INFO] -----< org.apache.maven:standalone-pom>
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO] >>> maven-archetype-plugin:3.2.0:generate (default-cli) > generate-sources @ standalone-pom >>>
[INFO] <<< maven-archetype-plugin:3.2.0:generate (default-cli) < generate-sources @ standalone-pom <<<
[INFO] --- maven-archetype-plugin:3.2.0:generate (default-cli) @ standalone-pom ---
[INFO] Generating project in Batch mode
[INFO] Using following parameters for creating project from Archetype: maven-archetype-quickstart:1.4
[INFO] Parameter: groupId, Value: com.mycompany.app
[INFO] Parameter: artifactId, Value: my-app
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] Parameter: package, Value: com.mycompany.app
[INFO] Parameter: packageInPathFormat, Value: com/mycompany/app
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] Parameter: package, Value: com.mycompany.app
[INFO] Parameter: groupId, Value: com.mycompany.app
[INFO] Parameter: artifactId, Value: my-app
[INFO] Project created from Archetype in dir: C:\Users\Himanshu\eclipse-workspace\my-app
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 12.886 s
[INFO] Finished at: 2021-03-18T09:57:29+05:30
[INFO] -----
C:\Users\Himanshu\eclipse-workspace>
```

**Solution:**

First, download Maven and follow the installation instructions. After that, type

```
1. mvn --version
```

It should print out your installed version of Maven, for example:

```
1. Apache Maven 3.6.3 (cecedd343002696d0abb50b32b541b8a6ba2883f)
2. Maven home: D:\apache-maven-3.6.3\apache-maven\bin\..
3. Java version: 8.0.232.09-AdoptOpenJDK, runtime: C:\Program Files\Java\jdk-8.0.232.09-hotspot\jre
4. Default locale: en_US, platform encoding: Cp1252
5. OS name: "windows 10", version: "10.0", arch: "amd64", family: "windows"
```

**Creating a Project**

You will need somewhere for your project to reside, create a directory somewhere in that directory. On your command line, execute the following Maven goal

```
1. mvn archetype:generate -DgroupId=com.mycompany.app -DartifactId=my-app -DarchetypeVersion=1.4 -DinteractiveMode=false
```

If you have just installed Maven, it may take a while on the first run. This is because downloading the most recent artifacts (plugin jars and other files) into your local repository. You may also need to execute the command a couple of times before it succeeds, as the remote server may time out before your downloads are complete. Don't worry, there are ways to fix that.

You will notice that the *generate* goal created a directory with the same name as the artifactId. Change into that directory.

- ```

C:\Users\Himanshu\eclipse-workspace>cd my-app
C:\Users\Himanshu\eclipse-workspace\my-app>mvn package
[INFO] Scanning for projects...
[INFO] -----< com.mycompany.app:my-app >-----
[INFO] Building my-app 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/3.1.0/maven-resources-plugin-3.1.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/3.1.0/maven-resources-plugin-3.1.0.jar (7.1 kB at 4.0 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.8.1/maven-compiler-plugin-3.8.1.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.8.1/maven-compiler-plugin-3.8.1.jar (32 kB at 61 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-plugin/2.22.2/maven-surefire-plugin-2.22.2.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-plugin/2.22.2/maven-surefire-plugin-2.22.2.jar (12 kB at 28 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-jar-plugin/3.1.2/maven-jar-plugin-3.1.2.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-jar-plugin/3.1.2/maven-jar-plugin-3.1.2.jar (62 kB at 123 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-report-plugin/2.22.2/maven-surefire-report-plugin-2.22.2.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-report-plugin/2.22.2/maven-surefire-report-plugin-2.22.2.jar (149 kB at 6.0 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-report-plugin/2.22.2/maven-surefire-report-plugin-2.22.2.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-report-plugin/2.22.2/maven-surefire-report-plugin-2.22.2.jar (149 kB at 6.0 kB/s)
[INFO] 1
[INFO] T E S T S
[INFO] -----
[INFO] Running com.mycompany.app.AppTest
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.038 s
[INFO] Results:
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO] 2
[INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ my-app ---
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-jar-plugin/3.0.2/maven-jar-plugin-3.0.2.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-jar-plugin/3.0.2/maven-jar-plugin-3.0.2.jar (210 kB at 210 kB/s)
[INFO] Building jar: C:\Users\Himanshu\eclipse-workspace\my-app\target\my-app-1.0-SNAPSHOT.jar
[INFO] BUILD SUCCESS
[INFO] Total time: 34.700 s
[INFO] Finished at: 2021-03-18T09:59:16+05:30
[INFO] -----
C:\Users\Himanshu\eclipse-workspace\my-app>

```

- ```
C:\Users\Himanshu\eclipse-workspace\my-app> java -cp target/my-app-1.0-SNAPSHOT.jar com.mycompany.app.App
Hello World!
```
- In the following example, we have configured our Maven project to use version 11 of the `compiler-plugin` and target Java 11:

- ```
C:\Users\Himanshu\eclipse-workspace\my-app>mvn site
[INFO] Scanning for projects...
[INFO] -----< com.mycompany.app:my-app >-----
[INFO] Building my-app 1.0-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO] --- maven-site-plugin:3.7.1:site (default-site) @ my-app ---
[INFO] configuring report plugin org.apache.maven.plugins:maven-project-info-reports-plugin:3.0.0
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin-3.0.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin-3.0.0.pom (20 kB at 12 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin-3.0.0.jar (300 kB at 307 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-shade-plugin-3.0.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-shade-plugin-3.0.0.pom (7.6 kB at 18 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/commons-codec/commons-codec-1.9.pom
Downloaded from central: https://repo.maven.apache.org/maven2/commons-codec/commons-codec-1.9.pom (5.8 kB at 14 kB/s)
```



```

[INFO] Generating "About" report --- maven-project-info-reports-plugin:3.0.0:generate (default-cli)
[INFO] Generating "Plugin Management" report --- maven-project-info-reports-plugin:3.0.0:generate (default-cli)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar (1.1 kB at 4.0 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar (1.1 kB at 17 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar (1.1 kB at 17 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar (1.1 kB at 17 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar (1.1 kB at 17 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-project-info-reports-plugin/3.0.0/maven-project-info-reports-plugin-3.0.0.jar (1.1 kB at 17 kB/s)
[INFO] Generating "Plugins" report --- maven-project-info-reports-plugin:3.0.0:generate (default-cli)
[INFO] Generating "Summary" report --- maven-project-info-reports-plugin:3.0.0:generate (default-cli)
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 21.423 s
[INFO] Finished at: 2021-03-18T10:01:42+05:30
[INFO] -----
C:\Users\Himanshu\eclipse-workspace\my-app>

```

- POM.xml

pom - Notepad

File Edit Format View Help

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<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>
```

```
  <groupId>com.mycompany.app</groupId>
  <artifactId>my-app</artifactId>
  <version>1.0-SNAPSHOT</version>
```

```
  <name>my-app</name>
  <!-- FIXME change it to the project's website -->
  <url>http://www.example.com</url>
```














```
<properties>
  <project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>
  <maven.compiler.source>1.7</maven.compiler.source>
  <maven.compiler.target>1.7</maven.compiler.target>
</properties>
```

```
<dependencies>
  <dependency>
    <groupId>junit</groupId>
    <artifactId>junit</artifactId>
    <version>4.11</version>
    <scope>test</scope>
  </dependency>
</dependencies>
```

```
<build>
  <pluginManagement><!-- lock down plugins versions to avoid using Maven defaults (may be moved to parent pom) -->
    <plugins>
      <!-- clean lifecycle, see https://maven.apache.org/ref/current/maven-core/lifecycles.html#clean_Lifecycle -->
      <plugin>
        <artifactId>maven-clean-plugin</artifactId>
        <version>3.1.0</version>
      </plugin>
      <!-- default lifecycle, jar packaging: see https://maven.apache.org/ref/current/maven-core/default-bindings.html#Default_Bindings -->
      <plugin>
        <artifactId>maven-resources-plugin</artifactId>
        <version>3.0.2</version>
      </plugin>
    </plugins>
  </pluginManagement>
  <plugins>
    <!-- Add plugin here -->
  </plugins>
</build>
```

- Files and Folders in the ‘target’ folder of project.

Acer (C:) > Users > Himanshu > eclipse-workspace > my-app > target

|                                                                                 | Name                                                                                                     | Date modified    | Type                | Size |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------|---------------------|------|
|  |  classes                | 18-03-2021 09:59 | File folder         |      |
|  |  generated-sources      | 18-03-2021 09:59 | File folder         |      |
|  |  generated-test-sources | 18-03-2021 09:59 | File folder         |      |
|  |  maven-archiver         | 18-03-2021 09:59 | File folder         |      |
|                                                                                 |  maven-status           | 18-03-2021 09:59 | File folder         |      |
|                                                                                 |  site                   | 18-03-2021 10:01 | File folder         |      |
|                                                                                 |  surefire-reports       | 18-03-2021 09:59 | File folder         |      |
|                                                                                 |  test-classes           | 18-03-2021 09:59 | File folder         |      |
|                                                                                 |  my-app-1.0-SNAPSHOT    | 18-03-2021 09:59 | Executable Jar File | 3 KB |