Build and Release Management lab

Submitted by

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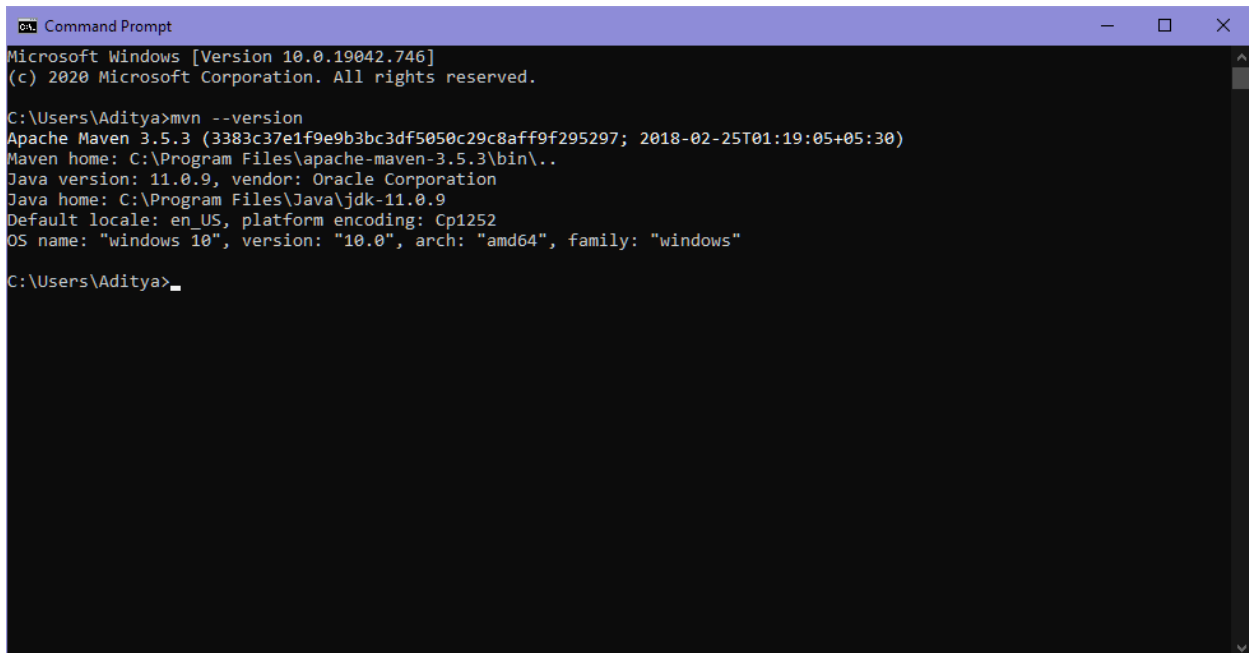
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LAB EXERCISE 6

Aim: Create a simple Maven Project using CLI.

Solution:

First, download Maven and follow the installation instructions. After that, type the following in a terminal or in a command prompt:

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


Creating a Project

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

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

```
[INFO] Using property: artifactId = my-app
Define value for property 'version' 1.0-SNAPSHOT: :
[INFO] Using property: package = com.mycompany.app
Confirm properties configuration:
groupId: com.mycompany.app
artifactId: my-app
version: 1.0-SNAPSHOT
package: com.mycompany.app
Y: : Y
[INFO] ------------------------------------------------------------
[INFO] Using following parameters for creating project from Archetype: maven-archetype-quickstart:1.4
[INFO] ------------------------------------------------------------
[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: package, Value: com.mycompany.app
[INFO] Parameter: groupId, Value: com.mycompany.app
[INFO] Parameter: artifactId, Value: my-app
[INFO] Parameter: version, Value: 1.0-SNAPSHOT
[INFO] Project created from Archetype in dir: C:\Users\Aditya\eclipse-workspace\new-app\my-app
[INFO] ------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------
[INFO] Total time: 01:05 min
[INFO] Finished at: 2021-03-18T10:35:14+05:30
[INFO] ------------------------------------------------------------
←[0m←[0m
C:\Users\Aditya\eclipse-workspace\new-app>
```

Build the Project

```
1. mvn package
```

The command line will print out various actions, and end with the following:

```
Command Prompt                                                          —  □  ✕
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-providers/2.22.1/suref ^
ire-providers-2.22.1.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-providers/2.22.1/surefi
re-providers-2.22.1.pom (2.5 kB at 5.7 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-junit4/2.22.1/surefire
-junit4-2.22.1.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-junit4/2.22.1/surefire-
junit4-2.22.1.jar (85 kB at 124 kB/s)
[INFO]
[INFO] -------------------------------------------------------
[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: 0.058 s - in com.mycompany.app.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ my-app ---
[INFO] Building jar: C:\Users\Aditya\eclipse-workspace\new-app\my-app\target\my-app-1.0-SNAPSHOT.jar
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time: 7.733 s
[INFO] Finished at: 2021-03-18T10:36:38+05:30
[INFO] ------------------------------------------------------------------------

C:\Users\Aditya\eclipse-workspace\new-app\my-app>_
```

Unlike the first command executed (*archetype:generate*) you may notice the second is simply a
single word - *package*. Rather than a *goal*, this is a *phase*. A phase is a step in the build lifecycle,
which is an ordered sequence of phases. When a phase is given, Maven will execute every phase
in the sequence up to and including the one defined. For example, if we execute the *compile*
phase, the phases that actually get executed are:

1. validate

2. generate-sources

3. process-sources
4. generate-resources

5. process-resources

6. compile

You may test the newly compiled and packaged JAR with the following command:

```
1.    java -cp target/my-app-1.0-SNAPSHOT.jar com.mycompany.app.App
```

Which will print the quintessential

```
junit4-2.22.1.jar (85 kB at 124 kB/s)
[INFO]
[INFO] -------------------------------------------------------
[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: 0.058 s - in com.mycompany.app.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO]
[INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ my-app ---
[INFO] Building jar: C:\Users\Aditya\eclipse-workspace\new-app\my-app\target\my-app-1.0-SNAPSHOT.jar
[INFO] -------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] -------------------------------------------------------
[INFO] Total time: 7.733 s
[INFO] Finished at: 2021-03-18T10:36:38+05:30
[INFO] -------------------------------------------------------

C:\Users\Aditya\eclipse-workspace\new-app\my-app>1.java -cp target/my-app-1.0-SNAPSHOT.jar com.mycompany.app.App
'1.java' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Aditya\eclipse-workspace\new-app\my-app>java -cp target/my-app-1.0-SNAPSHOT.jar com.mycompany.app.App
Hello World!

C:\Users\Aditya\eclipse-workspace\new-app\my-app>_
```