

DevOps Lab - Mukesh T P

Exercise 5

Setting Up and Exploring Maven

a. Installing Maven on macOS Using Homebrew

Step 1: Install Homebrew (if not already installed)

1. Open Terminal and run the following command to install Homebrew (if you don't have it installed yet):

```
/bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```

2. Follow the on-screen instructions to complete the installation.

Step 2: Install Maven Using Homebrew

1. Once Homebrew is installed, use the following command to install Maven:

```
brew install maven
```

2. Homebrew will download and install Maven along with any dependencies.

Step 3: Verify the Installation

1. To confirm Maven is installed correctly, check the version by running:

```
mvn -v
```

```
PS C:\Users\naksh\Downloads\DevOps> mvn -v
Apache Maven 3.9.9 (8e8579a9e76f7d015ee5ec7bfcdc97d260186937)
Maven home: C:\Users\naksh\apache-maven-3.9.9
Java version: 18.0.2.1, vendor: Oracle Corporation, runtime: C:\Program Files\Java\jdk-18.0.2.1
Default locale: en_IN, platform encoding: UTF-8
OS name: "windows 11", version: "10.0", arch: "amd64", family: "windows"
```

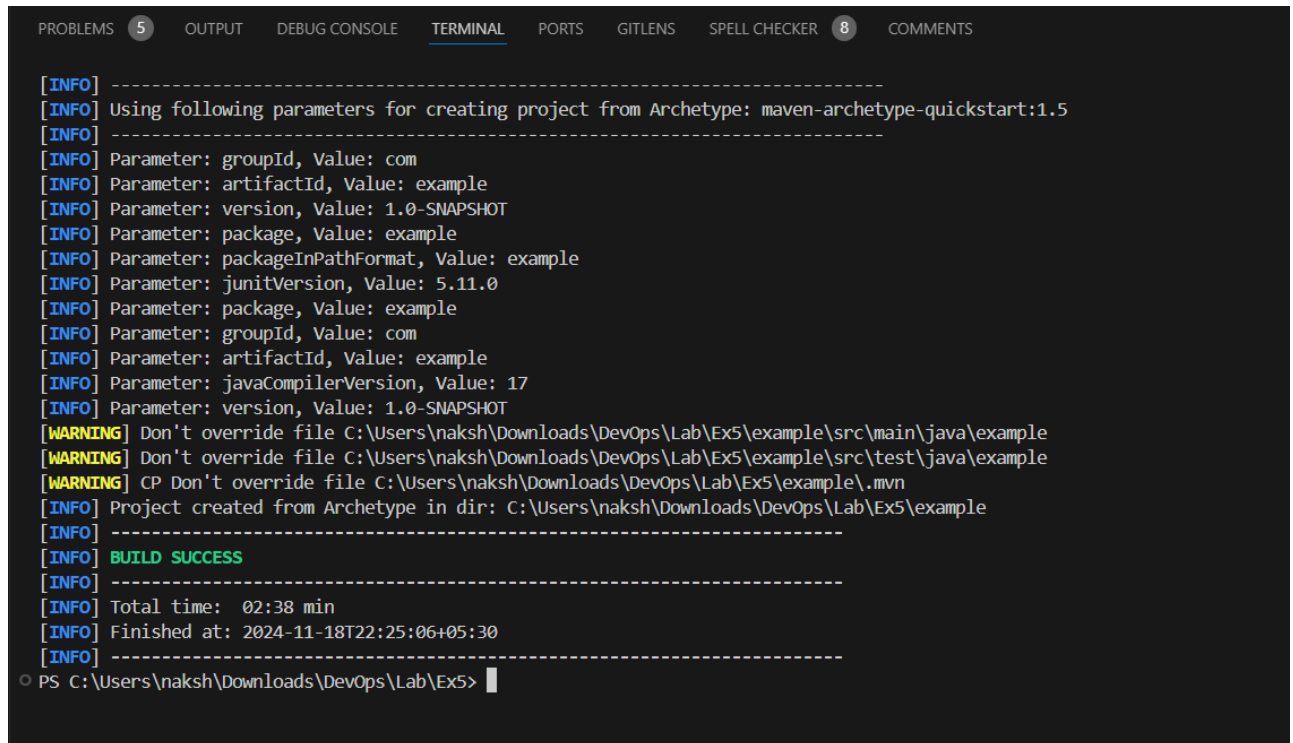
2. You should see Maven version details, Java version, and other environment information.

b. Creating and Building a Maven Project

Step 1: Generate a Maven Project

1. Use the following command to generate a new Maven project:

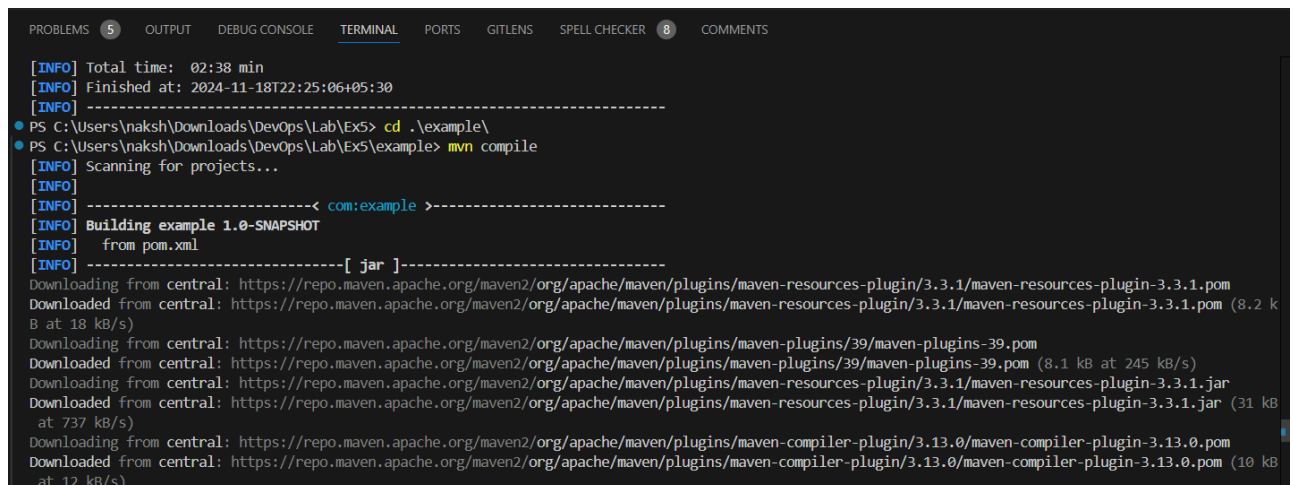
```
mvn archetype:generate -DgroupId=com.example -DartifactId=my-app -  
DarchetypeArtifactId=maven-archetype-quickstart -DinteractiveMode=false
```



```
PROBLEMS 5 OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS SPELL CHECKER 8 COMMENTS  
[INFO] -----  
[INFO] Using following parameters for creating project from Archetype: maven-archetype-quickstart:1.5  
[INFO] -----  
[INFO] Parameter: groupId, Value: com  
[INFO] Parameter: artifactId, Value: example  
[INFO] Parameter: version, Value: 1.0-SNAPSHOT  
[INFO] Parameter: package, Value: example  
[INFO] Parameter: packageInPathFormat, Value: example  
[INFO] Parameter: junitVersion, Value: 5.11.0  
[INFO] Parameter: package, Value: example  
[INFO] Parameter: groupId, Value: com  
[INFO] Parameter: artifactId, Value: example  
[INFO] Parameter: javaCompilerVersion, Value: 17  
[INFO] Parameter: version, Value: 1.0-SNAPSHOT  
[WARNING] Don't override file C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example\src\main\java\example  
[WARNING] Don't override file C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example\src\test\java\example  
[WARNING] CP Don't override file C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example\.\mvn  
[INFO] Project created from Archetype in dir: C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example  
[INFO] -----  
[INFO] BUILD SUCCESS  
[INFO] -----  
[INFO] Total time: 02:38 min  
[INFO] Finished at: 2024-11-18T22:25:06+05:30  
[INFO] -----  
PS C:\Users\naksh\Downloads\DevOps\Lab\Ex5>
```

2. Navigate to the newly created project directory:

```
cd my-app
```



```
PROBLEMS 5 OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS SPELL CHECKER 8 COMMENTS  
[INFO] Total time: 02:38 min  
[INFO] Finished at: 2024-11-18T22:25:06+05:30  
[INFO] -----  
PS C:\Users\naksh\Downloads\DevOps\Lab\Ex5> cd .\example\  
PS C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example> mvn compile  
[INFO] Scanning for projects...  
[INFO] -----< com.example >-----  
[INFO] Building example 1.0-SNAPSHOT  
[INFO] from pom.xml  
[INFO] -----[ jar ]-----  
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/3.3.1/maven-resources-plugin-3.3.1.pom  
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/3.3.1/maven-resources-plugin-3.3.1.pom (8.2 k  
B at 18 kB/s)  
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/39/maven-plugins-39.pom  
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/39/maven-plugins-39.pom (8.1 kB at 245 kB/s)  
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/3.3.1/maven-resources-plugin-3.3.1.jar  
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/3.3.1/maven-resources-plugin-3.3.1.jar (31 kB  
at 737 kB/s)  
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.13.0/maven-compiler-plugin-3.13.0.pom  
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.13.0/maven-compiler-plugin-3.13.0.pom (10 kB  
at 12 kB/s)
```

Step 2: Build the Maven Project

1. Use Maven to compile the project:

```
mvn compile
```

```

Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-xml/3.0.0/plexus-xml-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-compiler-manager/2.15.0/plexus-compiler-manager-2.15.0.jar (5.2 kB at 218 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-compiler-javac/2.15.0/plexus-compiler-javac-2.15.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-compiler-api/2.15.0/plexus-compiler-api-2.15.0.jar (29 kB at 632 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/4.0.0/plexus-utils-4.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-compiler-javac/2.15.0/plexus-compiler-javac-2.15.0.jar (26 kB at 467 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-utils/4.0.0/plexus-utils-4.0.0.jar (192 kB at 496 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/ow2/asm/asm/9.6/asm-9.6.jar (124 kB at 61 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/com/thoughtworks/qdox/qdox/2.0.3/qdox-2.0.3.jar (334 kB at 98 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-xml/3.0.0/plexus-xml-3.0.0.jar (93 kB at 9.3 kB/s)
[INFO] Recompiling the module because of changed source code.
[INFO] Compiling 1 source file with javac [debug release 17] to target\classes
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 27.740 s
[INFO] Finished at: 2024-11-18T22:27:32+05:30
[INFO] -----
PS C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example>

```

2. Run the project:

```
mvn exec:java -Dexec.mainClass="com.example.App"
```

c. Exploring Maven Commands

1. Clean the Project: Remove the `target` directory:

```
mvn clean
```

2. Package the Project: Build the project and create a JAR file:

```
mvn package
```

3. Install the Project: Install the JAR in the local Maven repository:

```
mvn install
```

```

Downloaded from central: https://repo.maven.apache.org/maven2/org/junit/platform/junit-platform-commons/1.11.0/junit-platform-commons-1.11.0.jar (141 kB at 385 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/junit/jupiter/junit-jupiter-params/5.11.0/junit-jupiter-params-5.11.0.jar (591 kB at 60 kB/s)
[INFO]
[INFO] --- resources:3.3.1:resources (default-resources) @ example ---
[INFO] skip non existing resourceDirectory C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example\src\main\resources
[INFO]
[INFO] --- compiler:3.13.0:compile (default-compile) @ example ---
[INFO] Nothing to compile - all classes are up to date.
[INFO]
[INFO] --- resources:3.3.1:testResources (default-testResources) @ example ---
[INFO] skip non existing resourceDirectory C:\Users\naksh\Downloads\DevOps\Lab\Ex5\example\src\test\resources
[INFO]
[INFO] --- compiler:3.13.0:testCompile (default-testCompile) @ example ---
[INFO] Recompiling the module because of changed dependency.
[INFO] Compiling 1 source file with javac [debug release 17] to target\test-classes
[INFO]
[INFO] --- surefire:3.3.0:test (default-test) @ example ---
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-api/3.3.0/surefire-api-3.3.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-api/3.3.0/surefire-api-3.3.0.pom (3.5 kB at 176 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire-logger-api/3.3.0/surefire-logger-api-3.3.0.pom

```