

Lesson 01 Demo 06

Working with Repositories

Objective: To work with repositories and search for the Super POM file in the local repository

Tools Required: Visual Studio Code and Maven

Prerequisites: None

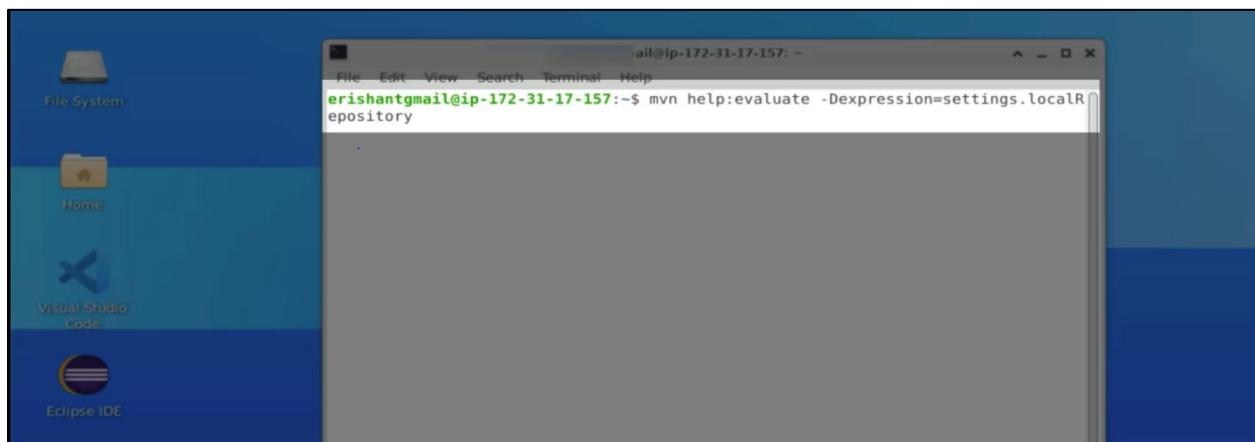
Steps to be followed:

1. Execute mvn command
2. Create a package in the file manager
3. List down files in the directory
4. Quit the configuration
5. Search for Super POM
6. Create command repository
7. Add ID and URL

Step 1: Execute mvn command

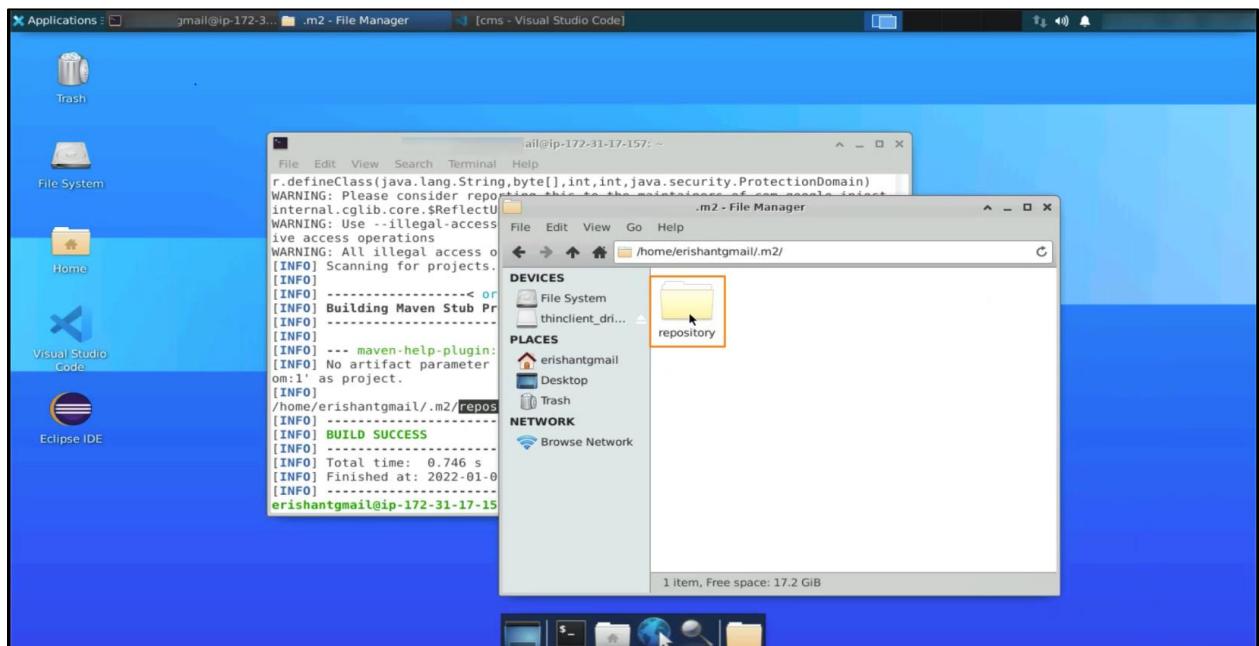
1.1 Open the terminal and use the **mvn** help command to find the directory

```
mvn help:evaluate -Dexpression=settings.localRepository
```

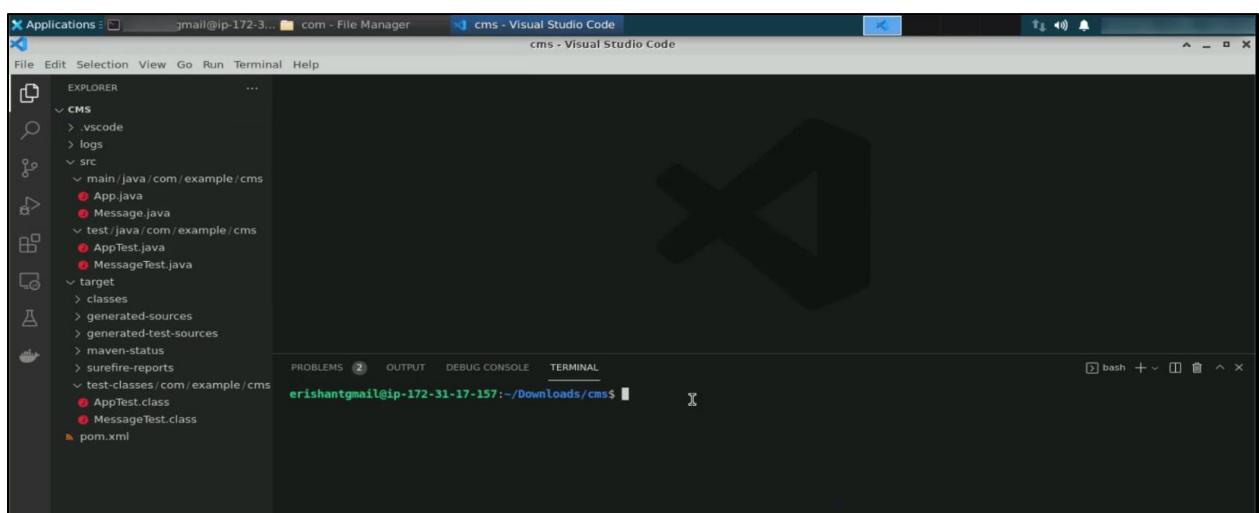


The command **mvn help:evaluate** is used to evaluate maven expressions. The option **-Dexpression=settings.localRepository** specifies that the expression to be evaluated is **settings.localRepository**, which returns the path to the local repository used by maven.

1.2 Navigate to the local **repository** from where the dependencies will be sent



1.3 Open the Visual Studio Code and open the terminal window



1.4 Build the CMS project by using the following command:

mvn install

The screenshot shows the VS Code interface with a Java project named 'CMS'. The Explorer sidebar shows files like App.java, Message.java, AppTest.java, MessageTest.java, pom.xml, and various test and target folders. The terminal window shows the command 'mvn install' being run, which outputs several warning messages about illegal reflective access and then proceeds to build the project. The build process includes steps for resources, compilation, and jar creation.

```

erishant@gmail:~/Downloads/cms$ mvn install
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by com.google.inject.internal.cglib.core.ReflectUtils$1 (file:/usr/share/maven/lib/guice.jar) to method java.lang.ClassLoader.defineClass(java.lang.String,byte[],int,int,java.security.ProtectionDomain)
WARNING: Please consider reporting this to the maintainers of com.google.inject.internal.cglib.core.ReflectUtils$1
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Scanning for projects...
[INFO] ...
[INFO] ...
[INFO] Building cms 1.0-SNAPSHOT
[INFO] ...
[INFO] ...
[INFO] --- maven-resources-plugin:3.0.2:resources (default-resources) @ cms ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non-existing resourceDirectory /home/erishant@gmail/Downloads/cms/src/main/resources
[INFO] ...
[INFO] --- maven-compiler-plugin:3.8.0:compile (default-compile) @ cms ...

```

Note: Please refer to the previous demo on how to create the CMS project

The **mvn install** command is used to build and install a maven project into the local repository. This command compiles the source code, creates the JAR or WAR files, and installs them in the local repository, so that other projects become dependent on them.

The screenshot shows the VS Code interface with the same 'CMS' project. The terminal output indicates a 'BUILD FAILURE' because of test failures. It provides details about the failed test goal and suggests looking at the surefire-reports for individual results. It also offers help links and instructions for debugging.

```

[INFO]
[INFO] BUILD FAILURE
[INFO]
[INFO] Total time: 3.760 s
[INFO] Finished at: 2022-01-07T11:08:44Z
[INFO]
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.22.1:test (default-test) on project cms: There are test failures.
[ERROR]
[ERROR] Please refer to /home/erishant@gmail/Downloads/cms/target/surefire-reports for the individual test results.
[ERROR] Please refer to dump files (if any exist) [date].dump, [date]-jvmRun[N].dump and [date].dumpstream.
[ERROR] > [Help 1]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException
erishant@gmail:~/Downloads/cms$ 

```

One of the test cases failed as the promo code in the Java file is incorrect.

Step 2: Create a package in the file manager

2.1 Change the promo code to BINGO in the AppTest.java file

```

src > test > java > com > example > cms > AppTest.java > AppTest > testPromoCode()
10 {
11     /**
12      * Rigorous Test :-)
13      */
14     @Test
15     public void testPromoCode()
16     {
17         assertEquals(Double.valueOf(0.55), App.getDiscount("BINGO"));
18     }
19
20     @Test
21     public void testMyPromoCode()
22     {
23         assertEquals(Double.valueOf(0.25), App.getDiscount("JUMBO"));
24     }
25

```

[INFO] [INFO] BUILD FAILURE
[INFO] Total time: 3.760 s
[INFO] Finished at: 2022-01-07T11:08:44Z
[INFO] [INFO] [ERROR] Failed to execute goal org.apache.maven.plugins:maven-surefire-plugin:2.22.1:test (default-test) on project cms: There are test failures.
[ERROR] Please refer to /home/erishantgmail/Downloads/cms/target/surefire-reports for the individual test results.
[ERROR] Please refer to dump files (if any exist) [date].dump, [date]-jvmRun[N].dump and [date].dumpstream.
[ERROR] -> [Help 1]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException
erishantgmail@ip-172-31-17-157:~/Downloads/cms\$

2.2 Execute mvn install again to run the build

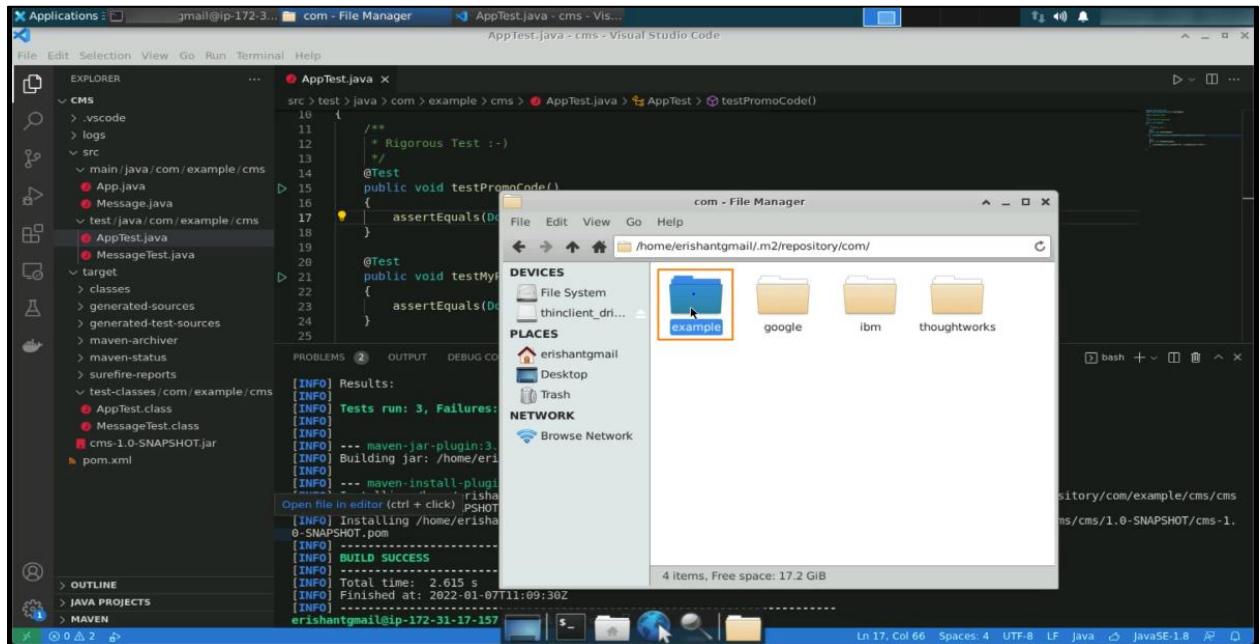
```

src > test > java > com > example > cms > AppTest.java > AppTest > testPromoCode()
10 {
11     /**
12      * Rigorous Test :-)
13      */
14     @Test
15     public void testPromoCode()
16     {
17         assertEquals(Double.valueOf(0.55), App.getDiscount("BINGO"));
18     }
19
20     @Test
21     public void testMyPromoCode()
22     {
23         assertEquals(Double.valueOf(0.25), App.getDiscount("JUMBO"));
24     }
25

```

[INFO] Results:
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0
[INFO] [INFO] [INFO] --- maven-jar-plugin:3.0.2:jar (default-jar) @ cms ---
[INFO] Building jar: /home/erishantgmail/Downloads/cms/target/cms-1.0-SNAPSHOT.jar
[INFO] [INFO] [INFO] --- maven-install-plugin:2.5.2:install (default-install) @ cms ---
[INFO] Installing /home/erishantgmail/Downloads/cms/target/cms-1.0-SNAPSHOT.jar
[INFO] [INFO] [INFO] [INFO] BUILD SUCCESS
[INFO] [INFO] [INFO] [INFO] Total time: 2.615 s
[INFO] [INFO] Finished at: 2022-01-07T11:09:30Z
[INFO] [INFO] [INFO] [INFO] erishantgmail@ip-172-31-17-157:~/Downloads/cms\$

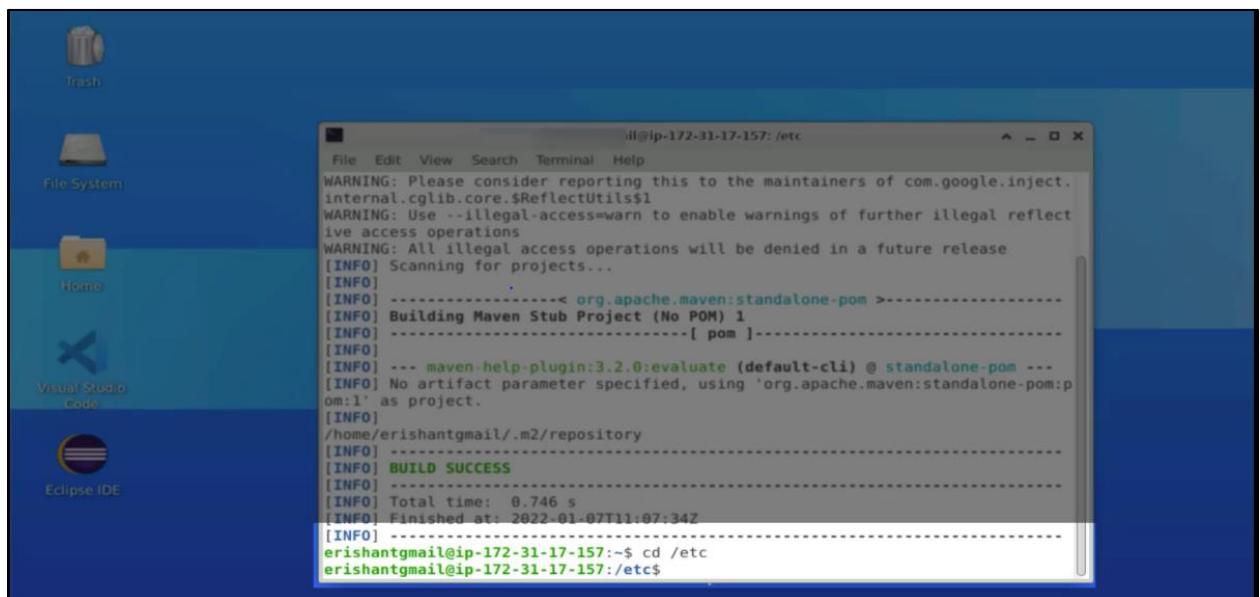
The **example** package is shown in the file manager after a successful build.



Step 3: List down files in the directory

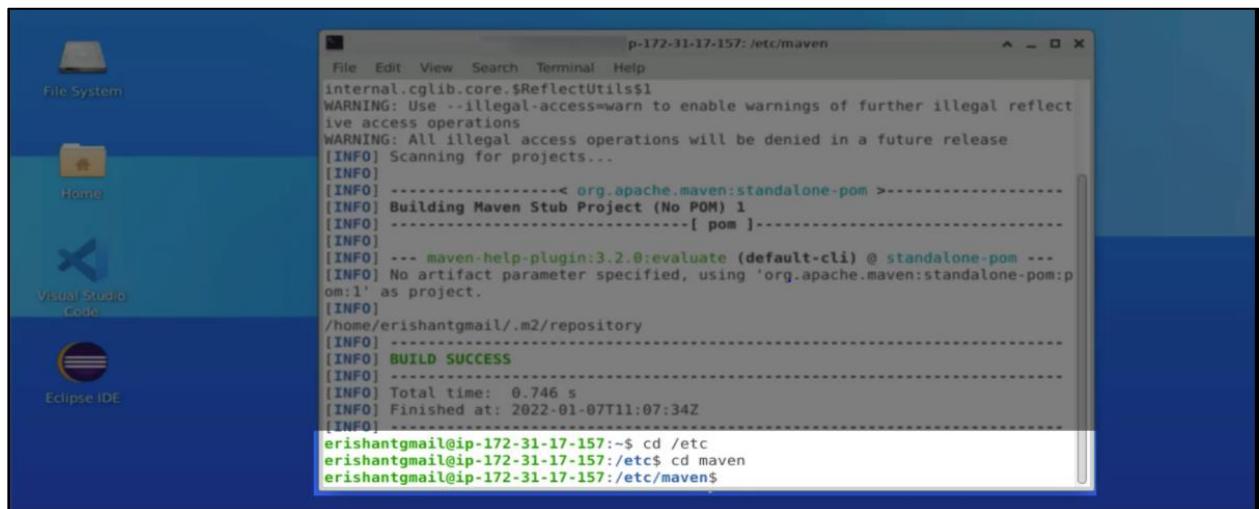
3.1 Use the **cd** command to navigate to the **etc** directory

```
cd /etc
```



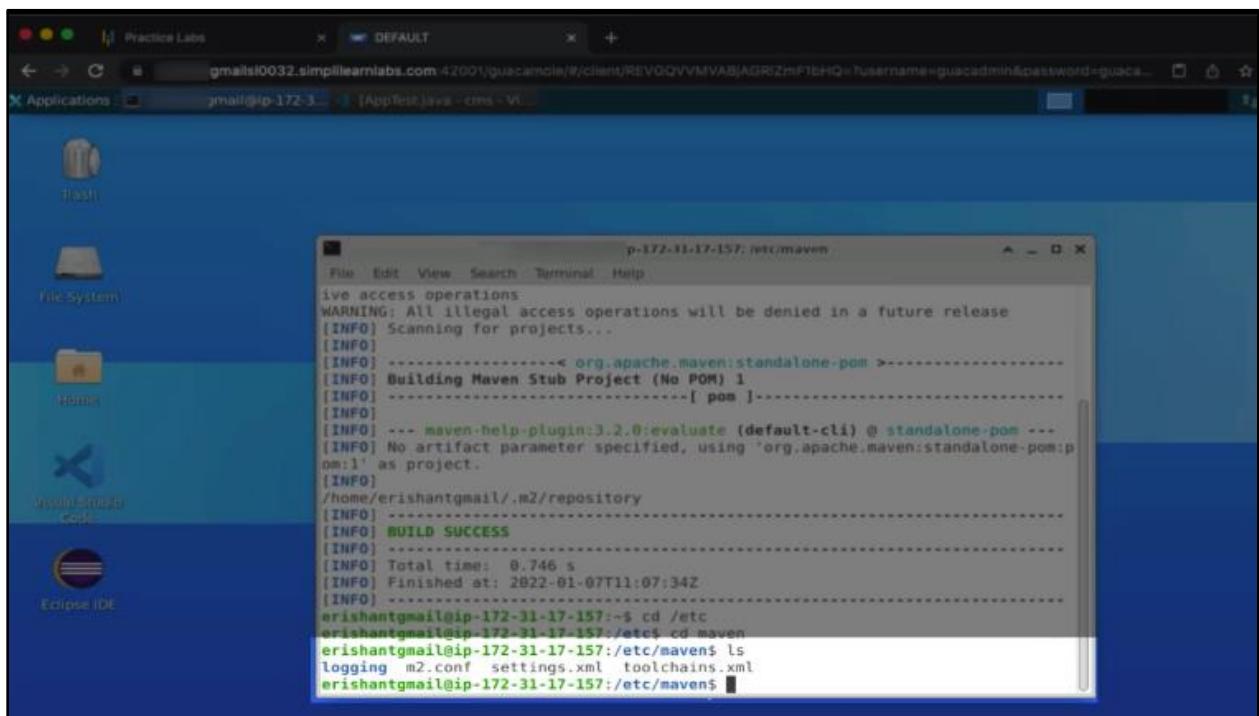
3.2 Use the **cd** command again to navigate to the **Maven** directory

```
cd maven
```



```
p-172-31-17-157: /etc/maven
File Edit View Search Terminal Help
internal.cglib.core.$ReflectUtils$1
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflect
ive access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Scanning for projects...
[INFO]
[INFO] ... < org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO]
[INFO] --- maven-help-plugin:3.2.0:evaluate (default-cli) @ standalone-pom ---
[INFO] No artifact parameter specified, using 'org.apache.maven:standalone-pom:p
om:1' as project.
[INFO]
/home/erishantgmail/.m2/repository
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 0.746 s
[INFO] Finished at: 2022-01-07T11:07:34Z
[INFO]
erishantgmail@ip-172-31-17-157:~$ cd /etc
erishantgmail@ip-172-31-17-157:/etc$ cd maven
erishantgmail@ip-172-31-17-157:/etc/maven$
```

3.3 List the files in the maven directory using the **ls** command



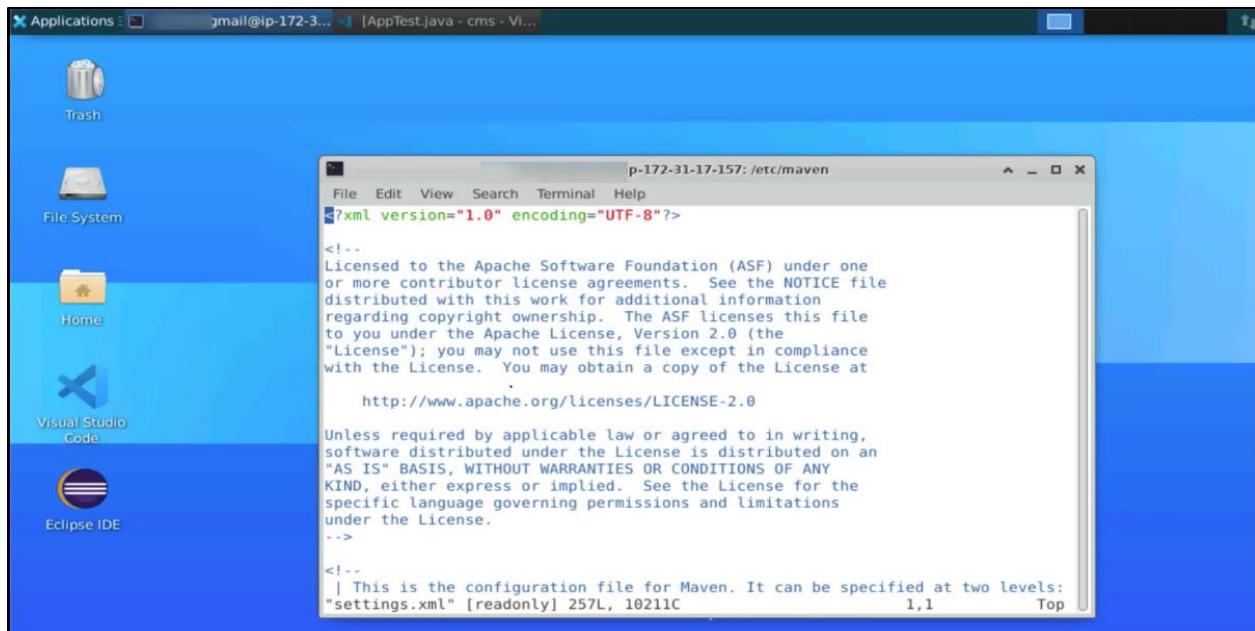
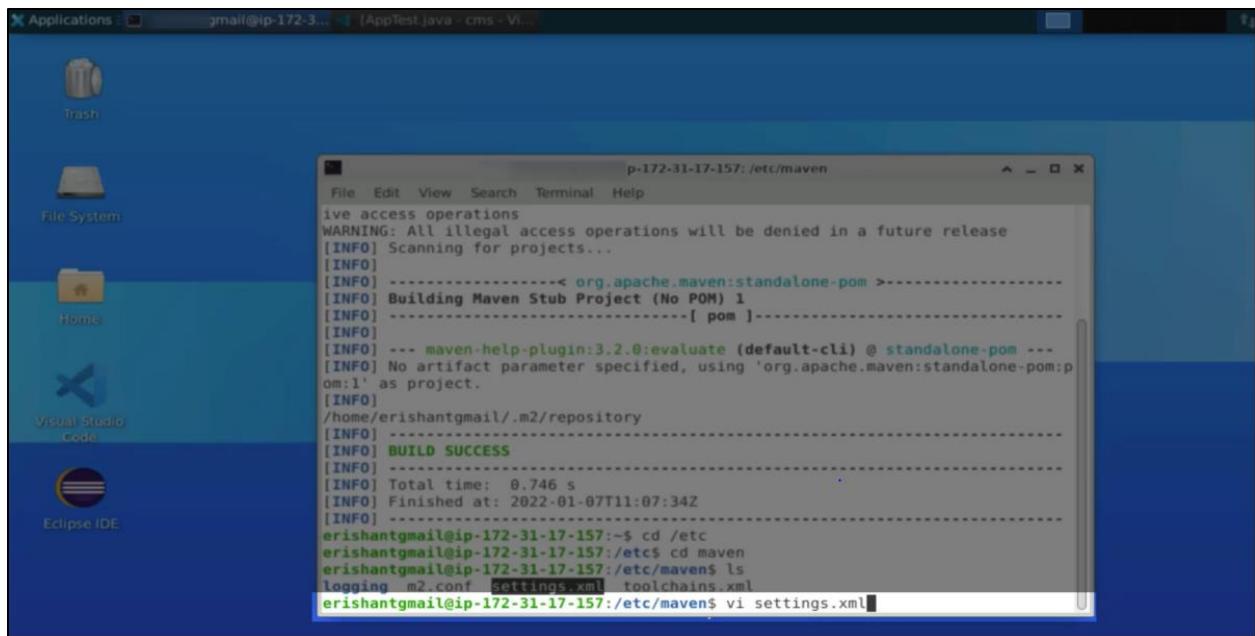
```
p-172-31-17-157: /etc/maven
File Edit View Search Terminal Help
ive access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Scanning for projects...
[INFO]
[INFO] ... < org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO]
[INFO] --- maven-help-plugin:3.2.0:evaluate (default-cli) @ standalone-pom ---
[INFO] No artifact parameter specified, using 'org.apache.maven:standalone-pom:p
om:1' as project.
[INFO]
/home/erishantgmail/.m2/repository
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 0.746 s
[INFO] Finished at: 2022-01-07T11:07:34Z
[INFO]
erishantgmail@ip-172-31-17-157:~$ cd /etc
erishantgmail@ip-172-31-17-157:/etc$ cd maven
erishantgmail@ip-172-31-17-157:/etc/maven$ ls
logging m2.conf settings.xml toolchains.xml
erishantgmail@ip-172-31-17-157:/etc/maven$
```

You can find the **settings.xml** file.

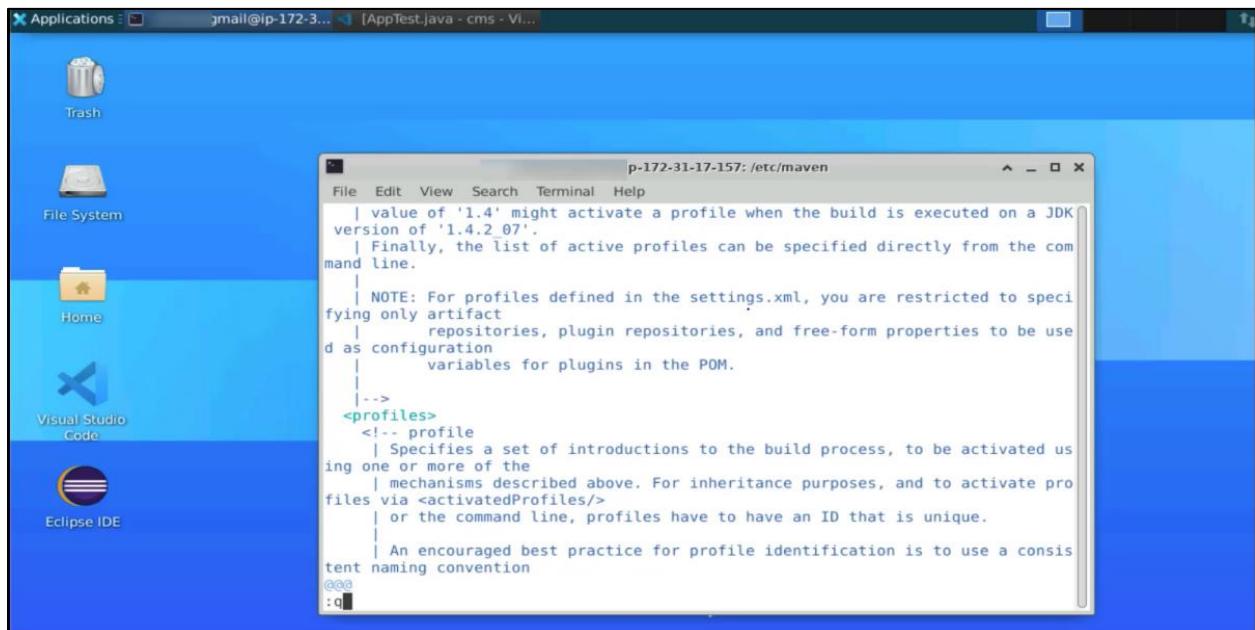
Step 4: Quitting the configuration

4.1 Open the **settings.xml** file using vi editor from the terminal

vi settings.xml



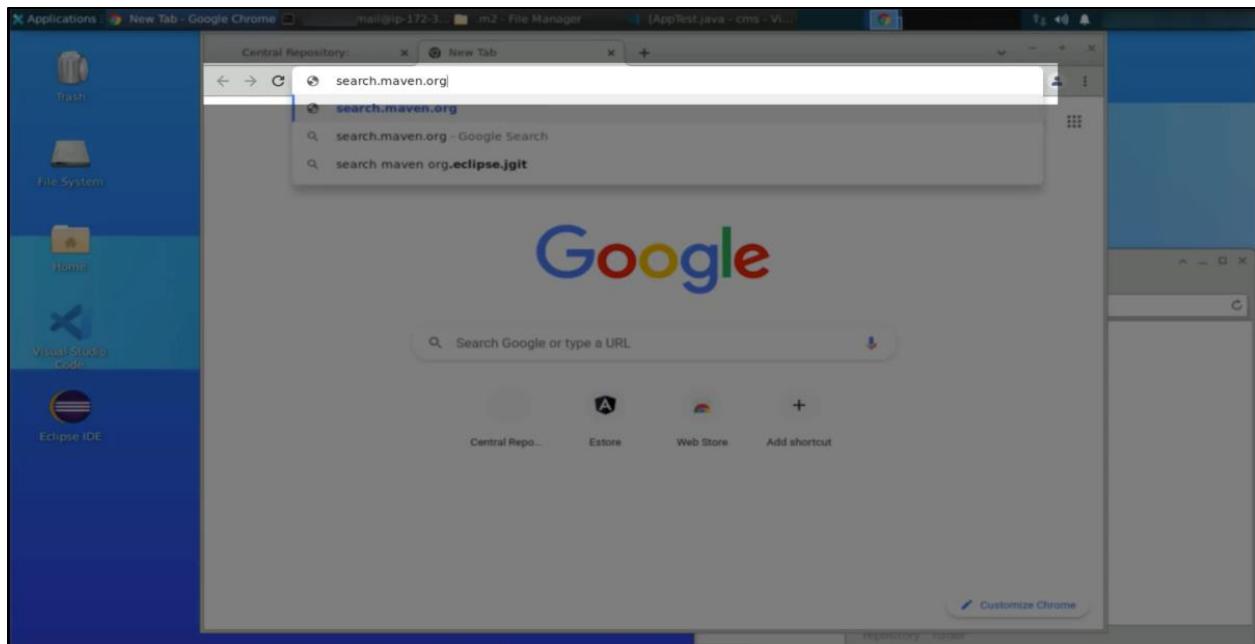
4.2 To perform the configuration in the local repository, type :q



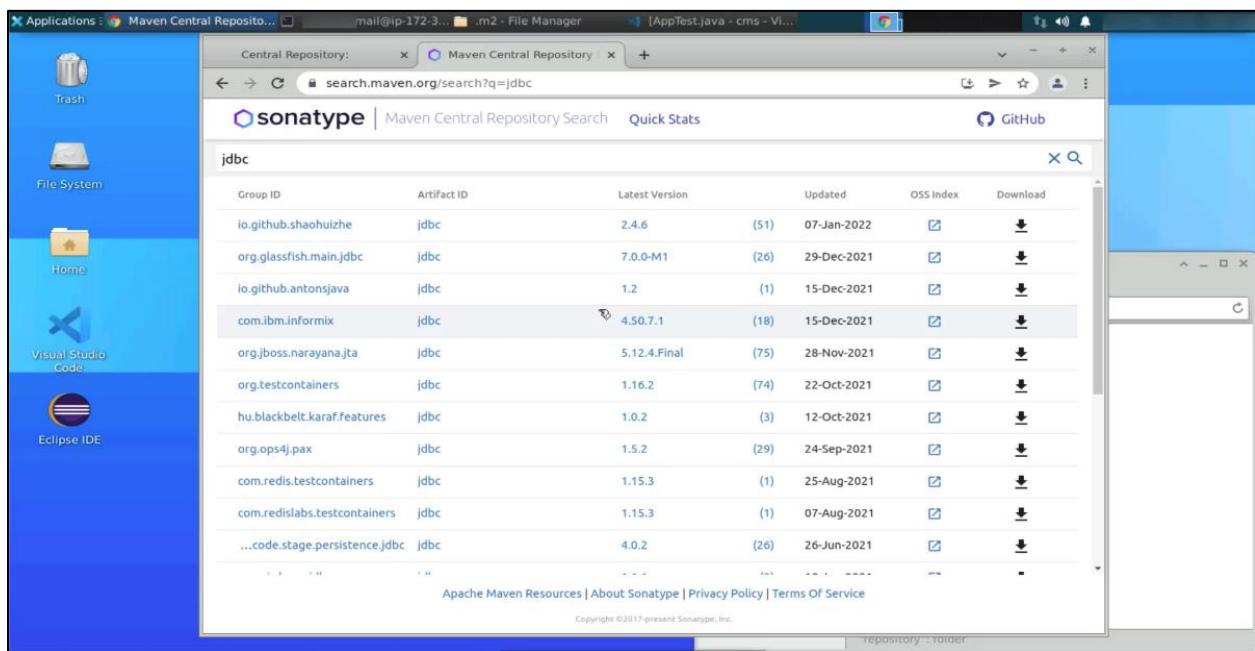
```
p-172-31-17-157: /etc/maven
File Edit View Search Terminal Help
| value of '1.4' might activate a profile when the build is executed on a JDK
| version of '1.4.2_07'.
| Finally, the list of active profiles can be specified directly from the com
mand line.
|
| NOTE: For profiles defined in the settings.xml, you are restricted to speci
fying only artifact
| repositories, plugin repositories, and free-form properties to be use
d as configuration
|
| variables for plugins in the POM.
|
| ...
<profiles>
  <!-- profile
  | Specifies a set of introductions to the build process, to be activated us
ing one or more of the
  | mechanisms described above. For inheritance purposes, and to activate pro
files via <activatedProfiles/>
  | or the command line, profiles have to have an ID that is unique.
  |
  | An encouraged best practice for profile identification is to use a consis
tent naming convention
@00
:q
```

Step 5: Search for Super POM

5.1 To search the data from the central repository, open the browser and go to the url:
search.maven.org

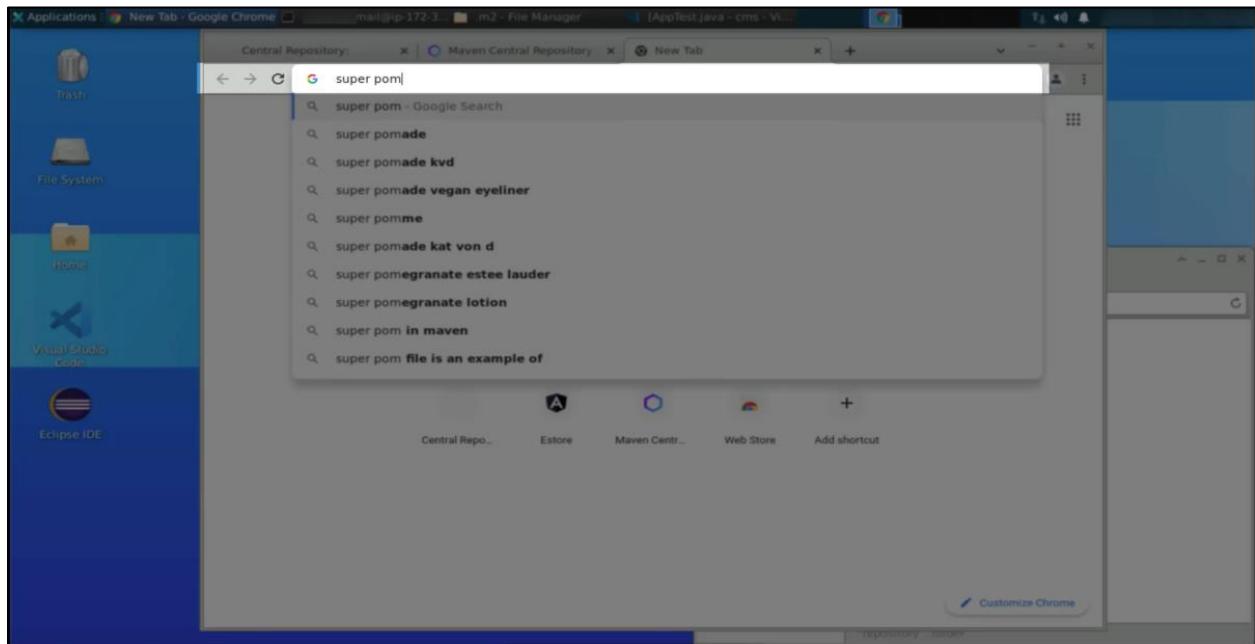


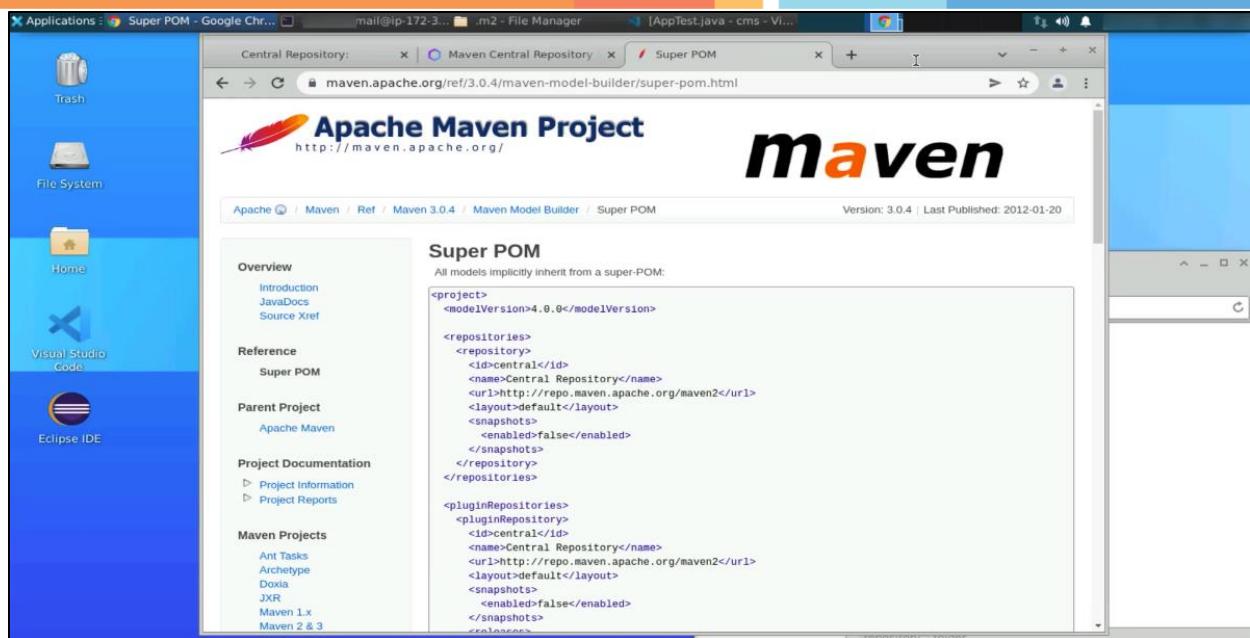
5.2 Search for the JDBC



All the packages in the released version can be seen.

5.3 Type **super pom** in the search box to check for the central repository configuration





Step 6: Create command repository

6.1 Create a repositories tag in the pom.xml file of CMS project

```

<repositories>
  <repository></repository>
</repositories>

```

```

<repositories>
  <repository></repository>
</repositories>

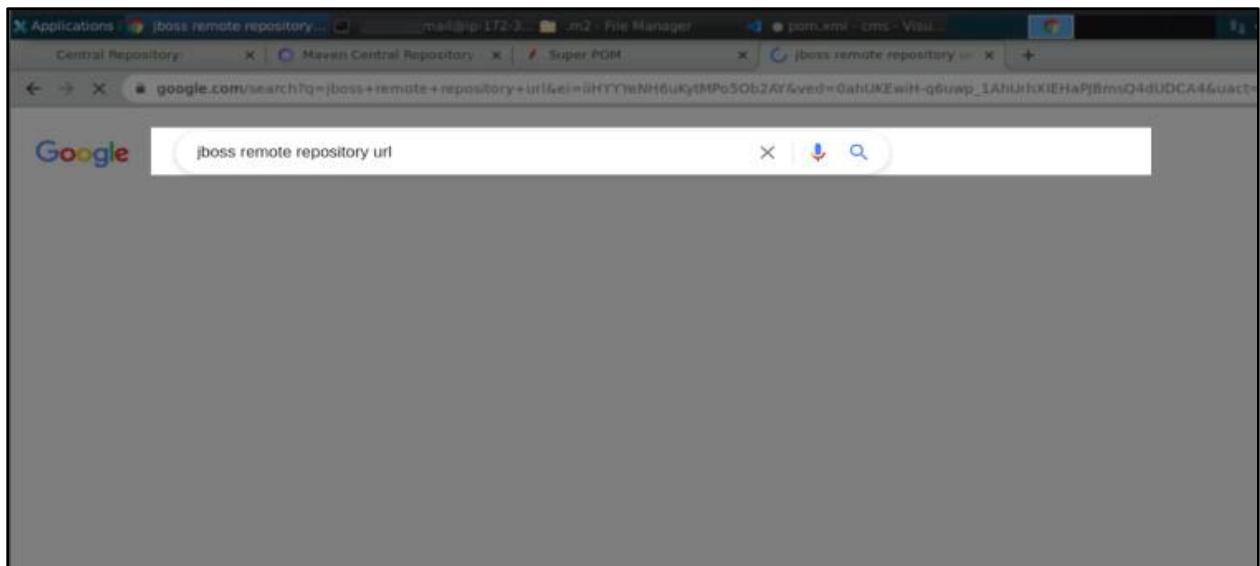
```

Note: Please refer to the previous demo on how to create the CMS project

Step 7: Add ID and URL

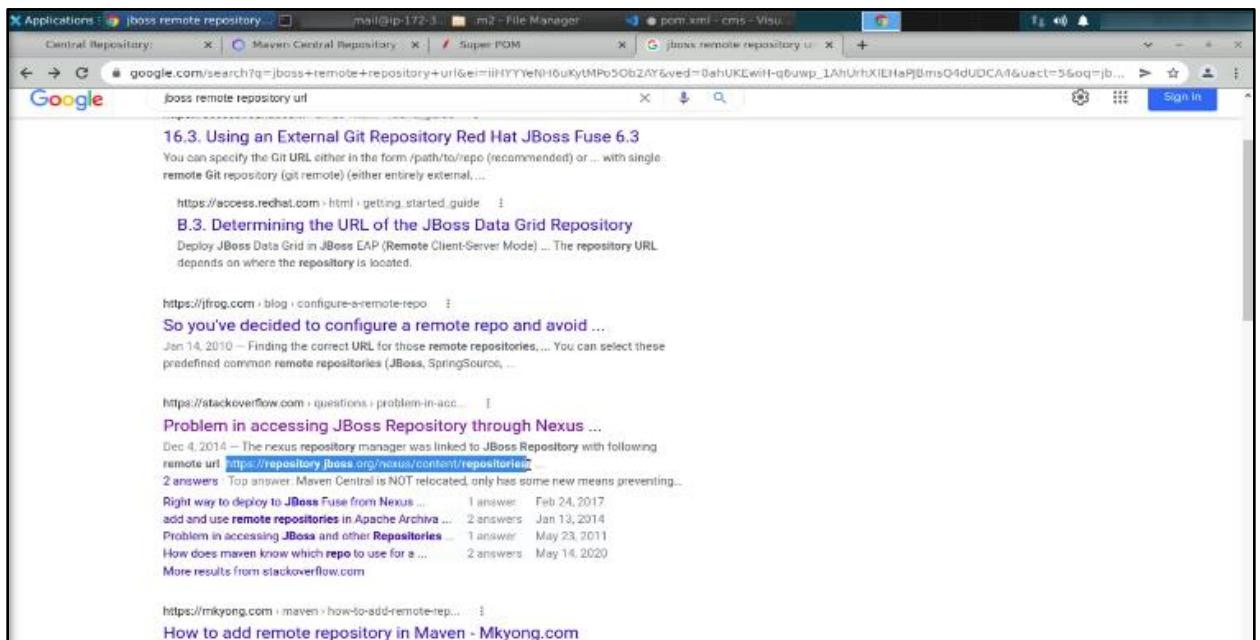
7.1 Go to the search box and type the following:

jboss remote repository url



7.2 Look for the remote URL

<https://repository.jboss.org/nexus/content/repositories/>



7.3 Go back to the **pom.xml** file and add the following code in the **repository** tag:

```
<id>jboss-repo</id>
<url>https://repository.jboss.org/nexus/content/repositories</url>
```

```


File Edit Selection View Go Run Terminal Help



EXPLORER pom.xml



```

<id>jboss-repo</id>
<url>https://repository.jboss.org/nexus/content/repositories</url>
```


```

7.4 Add one more ID and URL for another repository called **spring-repo**

```
<id>spring-repo</id>
<url>https://repo.spring.io/release</url>
```

```


File Edit Selection View Go Run Terminal Help



EXPLORER pom.xml



```

<id>jboss-repo</id>
<url>https://repository.jboss.org/nexus/content/repositories</url>
```



```

<id>spring-repo</id>
<url>https://repo.spring.io/release</url>
```


```

This is how we can link the local repository in the project. The users can configure their repository (as required) through the repository tag, known as the remote repository.

By following these steps, you have successfully executed the mvn command, created a package, listed directory files, quit the configuration, searched for the Super POM, created a command repository, and added the ID and URL.