

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

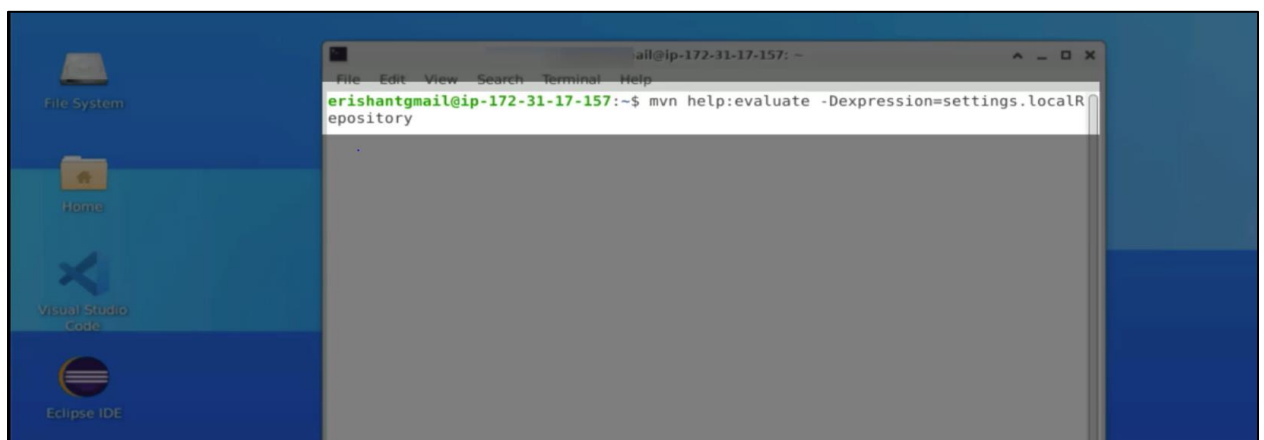
Prerequisites: None

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

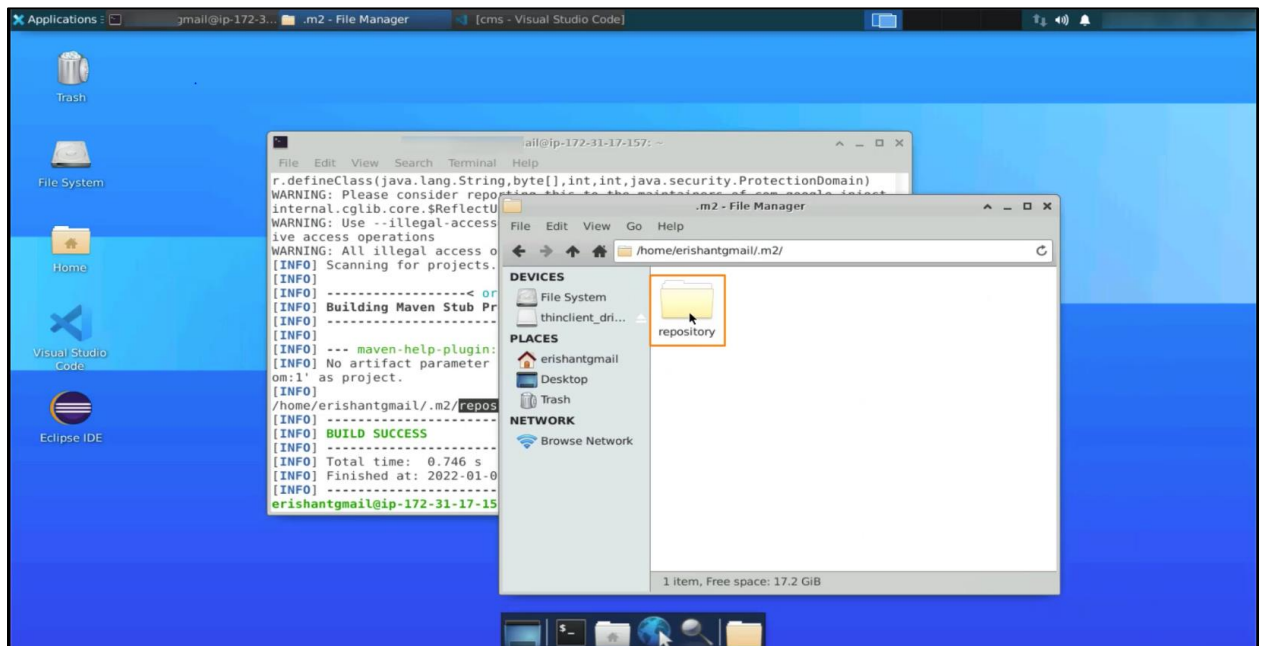
Step 1: Execute mvn command

- 1.1 Open the terminal and use the **mvn** help command to find the directory
mvn help:evaluate -Dexpression=settings.localRepository

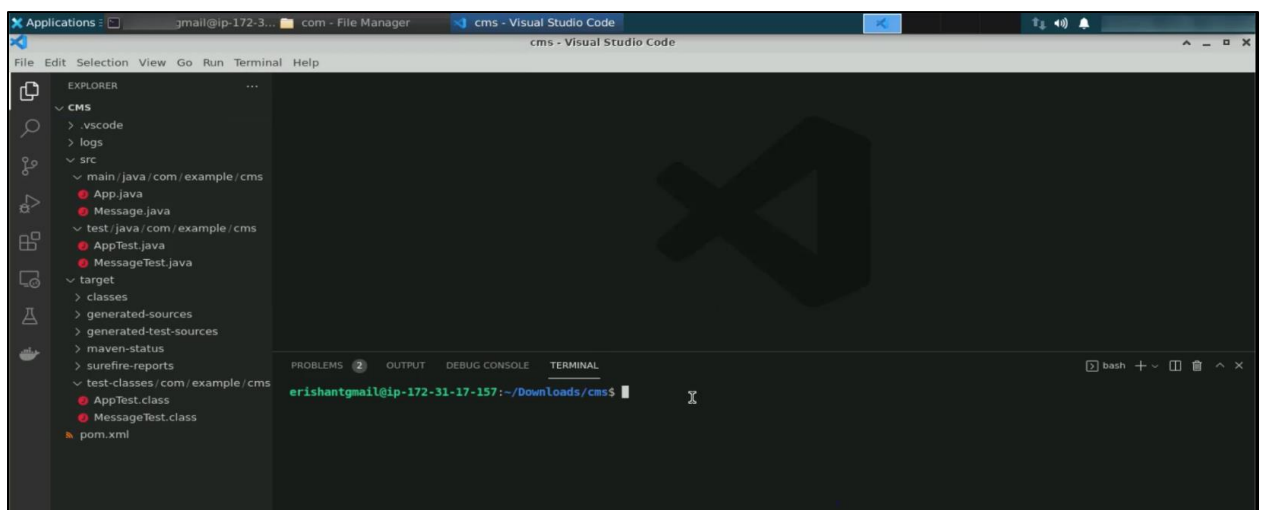


The command `mvn help:evaluate` is used to evaluate maven expressions. The option `-Dexpression=settings.localRepository` specifies that the expression to be evaluated is `settings.localRepository`, which returns the path to the local repository used by maven.

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

```
erishantgmail@ip-172-31-17-157:~/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] -----[ com.example.cms:cms ]-----
[INFO] Building cms 1.0-SNAPSHOT
[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/erishantgmail/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.

```
[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/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://wiki.apache.org/confluence/display/MAVEN/MojoFailureException
erishantgmail@ip-172-31-17-157:~/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 /**
13  * Rigorous Test :-))
14  */
15 @Test
16 public void testPromoCode()
17 {
18     assertEquals(Double.valueOf(0.55), App.getDiscount("BINGO"));
19 }
20
21 @Test
22 public void testMyPromoCode()
23 {
24     assertEquals(Double.valueOf(0.25), App.getDiscount("JUMBO"));
25 }

```

```

[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/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://wiki.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 /**
13  * Rigorous Test :-))
14  */
15 @Test
16 public void testPromoCode()
17 {
18     assertEquals(Double.valueOf(0.55), App.getDiscount("BINGO"));
19 }
20
21 @Test
22 public void testMyPromoCode()
23 {
24     assertEquals(Double.valueOf(0.25), App.getDiscount("JUMBO"));
25 }

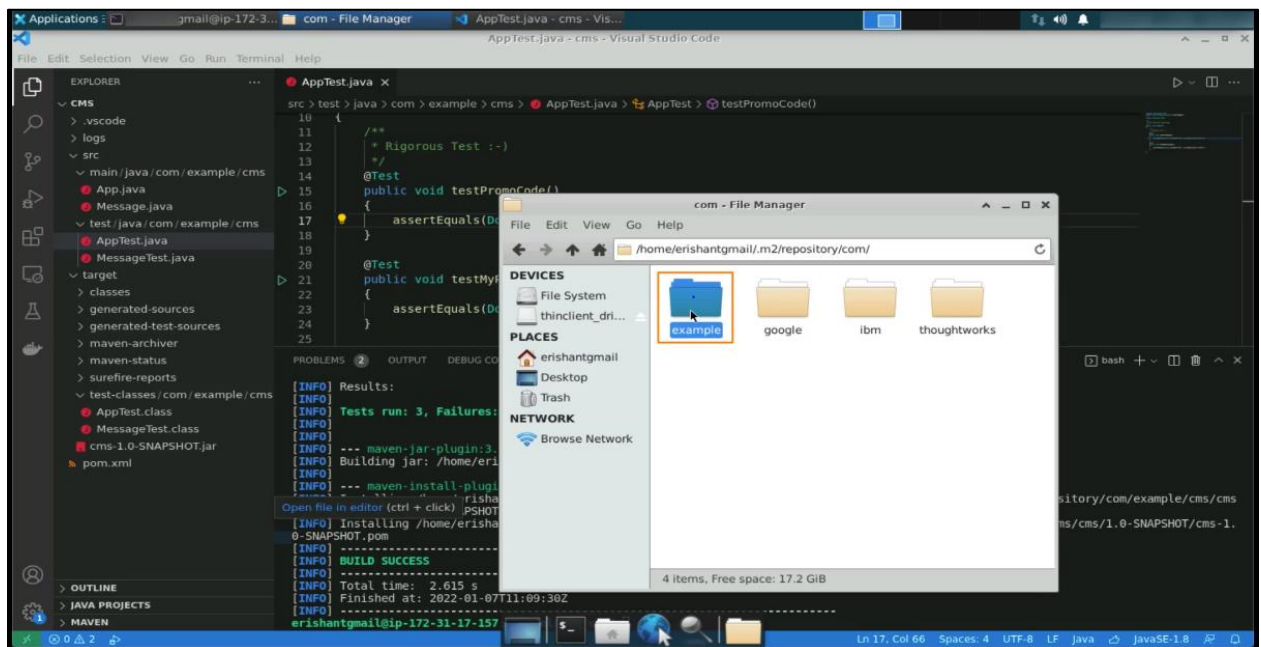
```

```

[INFO] Results:
[INFO]
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0
[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] --- maven-install-plugin:2.5.2:install (default-install) @ cms ---
[INFO] Installing /home/erishantgmail/Downloads/cms/target/cms-1.0-SNAPSHOT.jar to /home/erishantgmail/.m2/repository/com/example/cms/cms-1.0-SNAPSHOT.jar
[INFO] Installing /home/erishantgmail/Downloads/cms/pom.xml to /home/erishantgmail/.m2/repository/com/example/cms/cms-1.0-SNAPSHOT.pom
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 2.615 s
[INFO] Finished at: 2022-01-07T11:09:30Z
[INFO]
erishantgmail@ip-172-31-17-157:~/Downloads/cms$

```

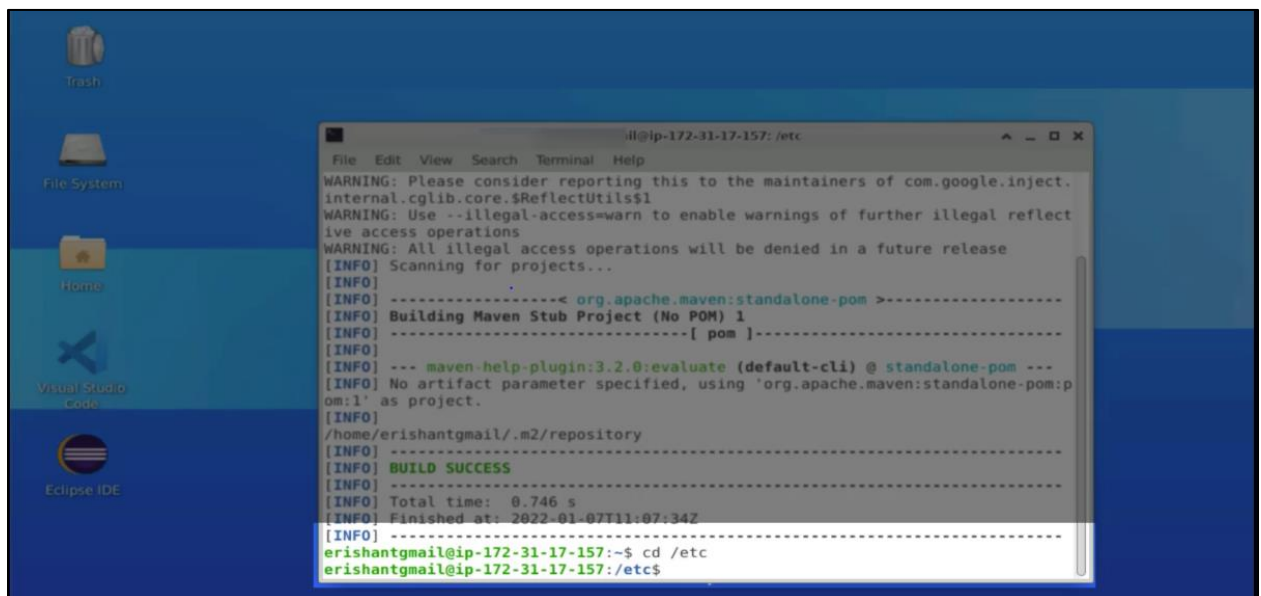
The **example** package is shown in the file manager after a successful build.



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

```

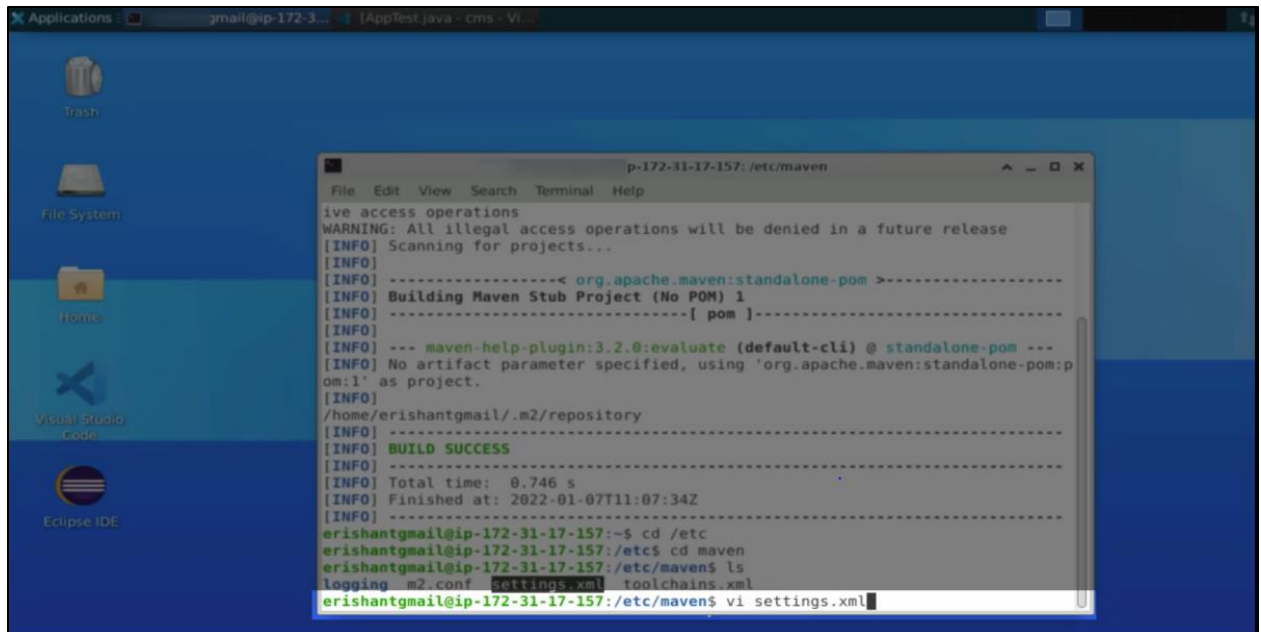
p-172-31-17-157: /etc/maven
File Edit View Search Terminal Help
ive access operations
WARNING: All illegal access operations will be denied in a future release
[INFO] Scanning for projects...
[INFO]
[INFO] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ 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]
[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.

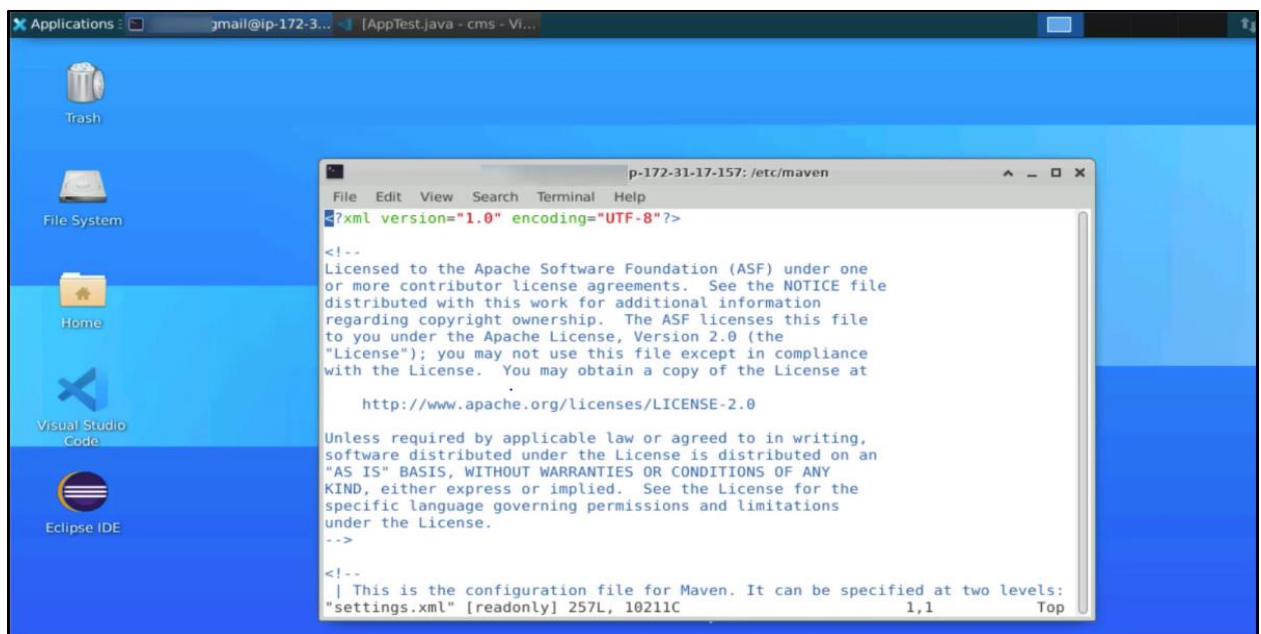
Step 4: Quitting the configuration

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



The screenshot shows a terminal window on a Linux desktop. The desktop has icons for Trash, File System, Home, Visual Studio Code, and Eclipse IDE. The terminal window title is 'p-172-31-17-157: /etc/maven'. It displays the output of a Maven build, including a warning about illegal access operations, scanning for projects, and building a Maven Stub Project. The build is successful. The user then navigates to the /etc directory and the /etc/maven directory, listing files which include m2.conf, settings.xml, and toolchains.xml. Finally, the user opens settings.xml in the vi editor.

```
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] -----< org.apache.maven:standalone-pom >-----
[INFO] Building Maven Stub Project (No POM) 1
[INFO] -----[ pom ]-----
[INFO] --- maven-help-plugin:3.2.0:evaluate (default-cli) @ standalone-pom ---
[INFO] No artifact parameter specified, using 'org.apache.maven:standalone-pom:pom:1' as project.
[INFO] /home/erishantgmail/.m2/repository
[INFO] BUILD SUCCESS
[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$ vi settings.xml
```



The screenshot shows the settings.xml file open in the vi editor. The file contains a license notice from the Apache Software Foundation (ASF) and information about the configuration file. The user is currently in the 'normal' mode of the vi editor, as indicated by the '~' symbol at the bottom right of the editor window.

```
p-172-31-17-157: /etc/maven
File Edit View Search Terminal Help
?xml version="1.0" encoding="UTF-8"?>

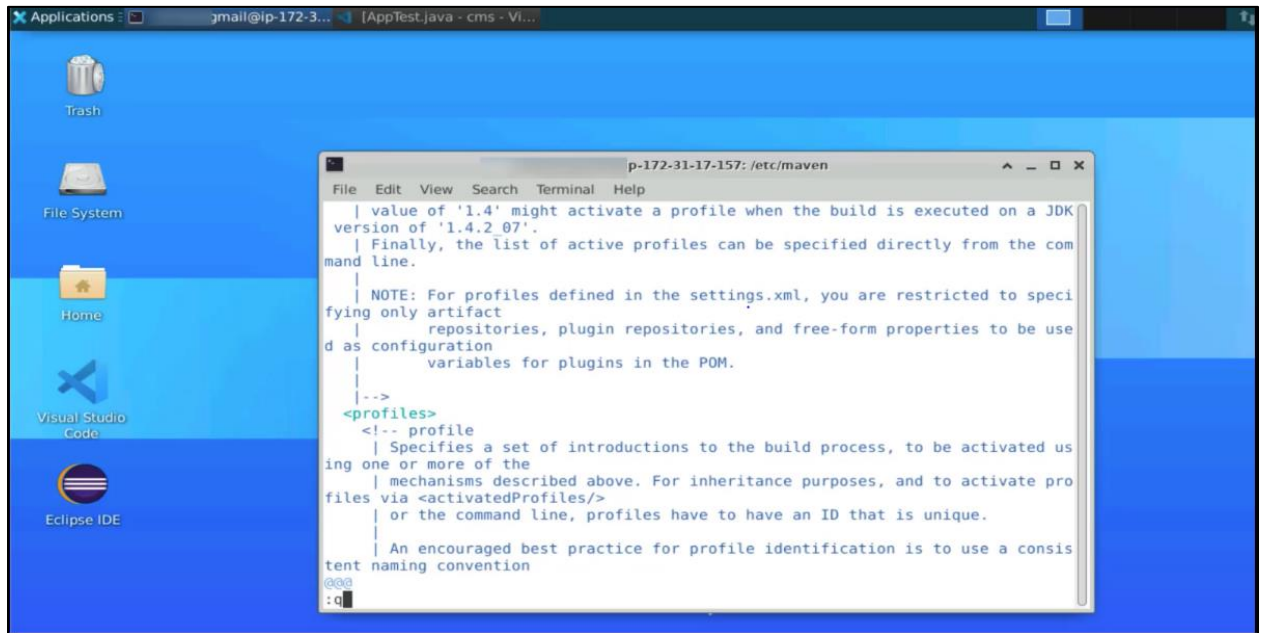
<!--
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or more contributor license agreements. See the NOTICE file
distributed with this work for additional information
regarding copyright ownership. The ASF licenses this file
to you under the Apache License, Version 2.0 (the
"License"); you may not use this file except in compliance
with the License. You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

Unless required by applicable law or agreed to in writing,
software distributed under the License is distributed on an
"AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY
KIND, either express or implied. See the License for the
specific language governing permissions and limitations
under the License.
-->

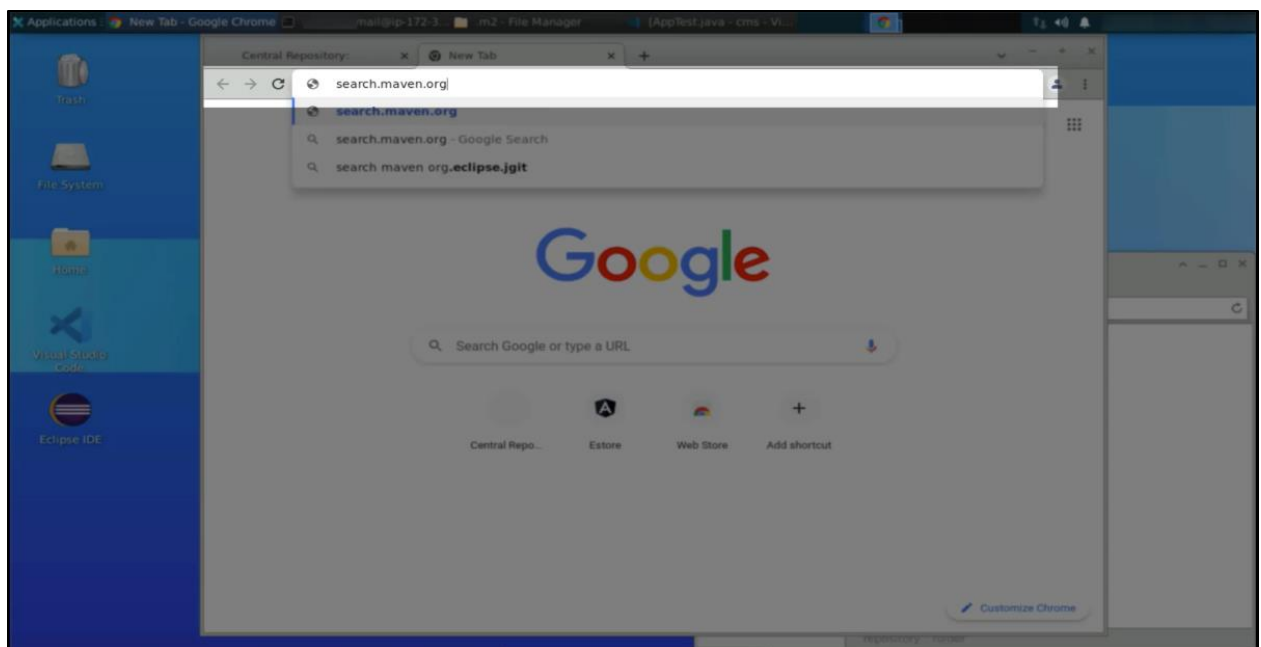
<!--
| This is the configuration file for Maven. It can be specified at two levels:
| "settings.xml" [readonly] 257L, 10211C
|
|_
1,1 Top
```

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

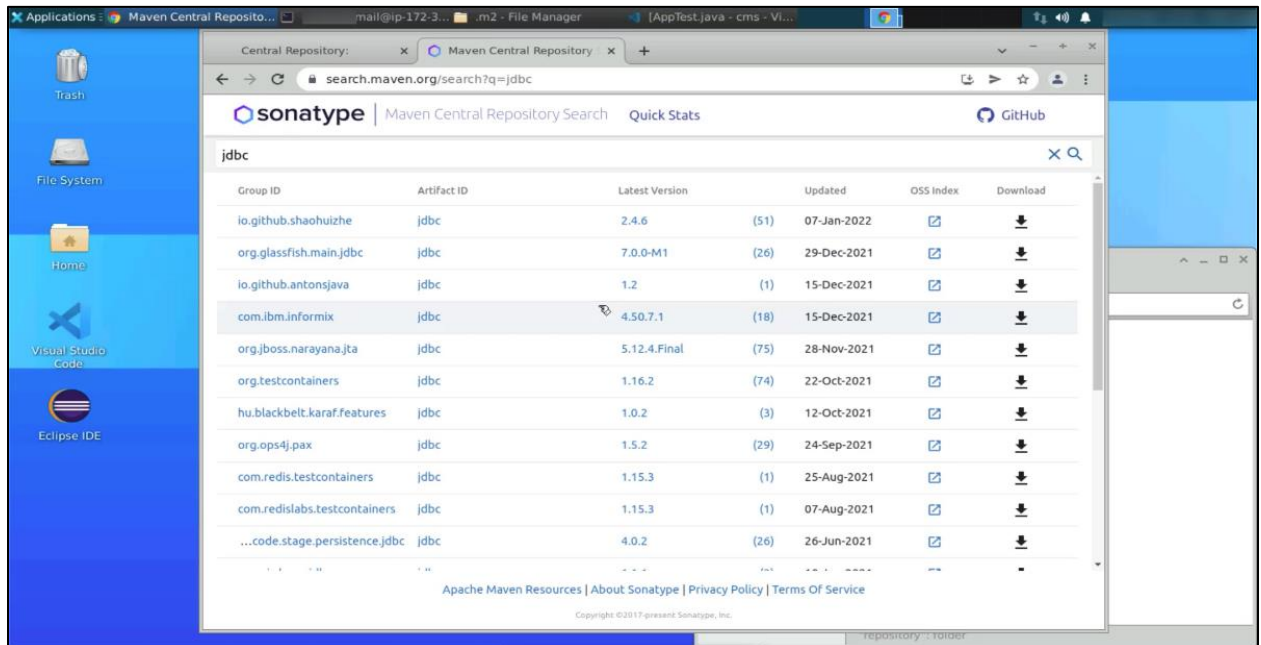


Step 5: Search for Super POM

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

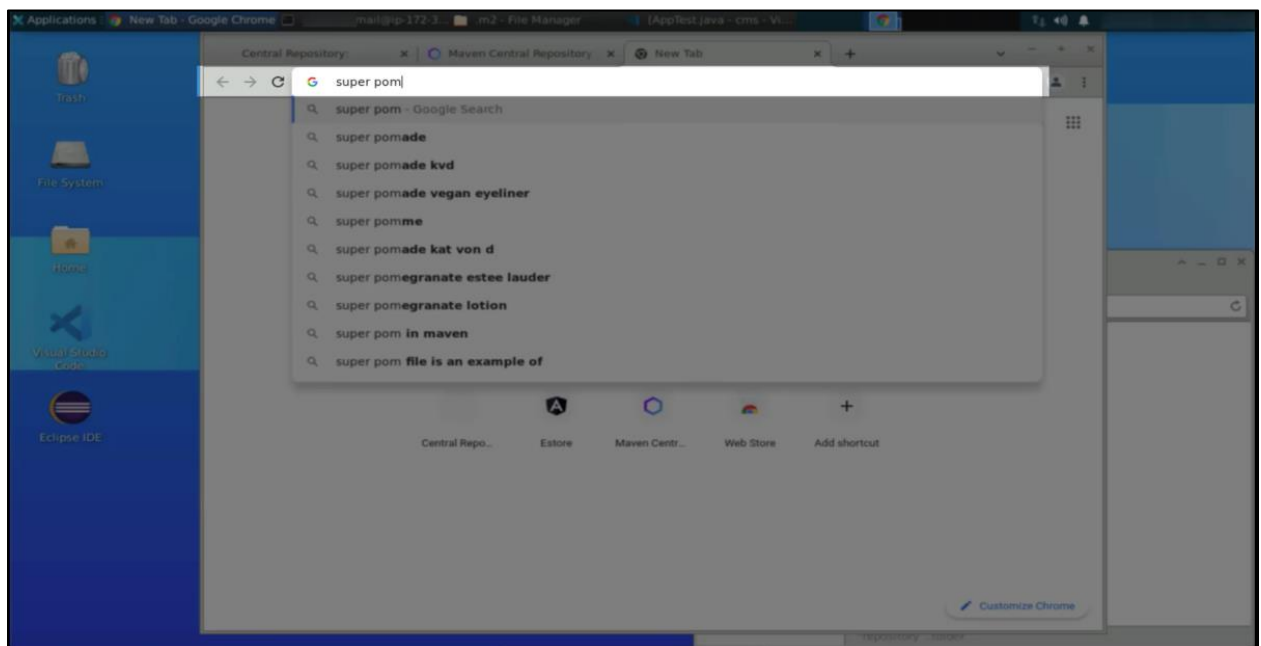


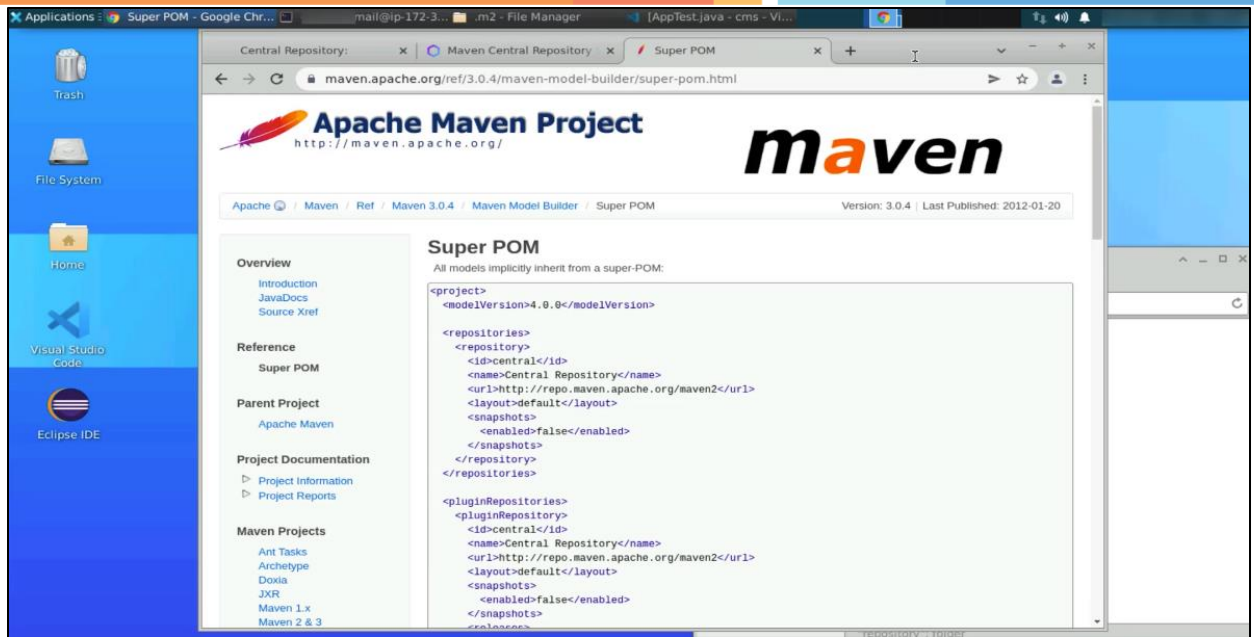
5.2 Search for the JDBC



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

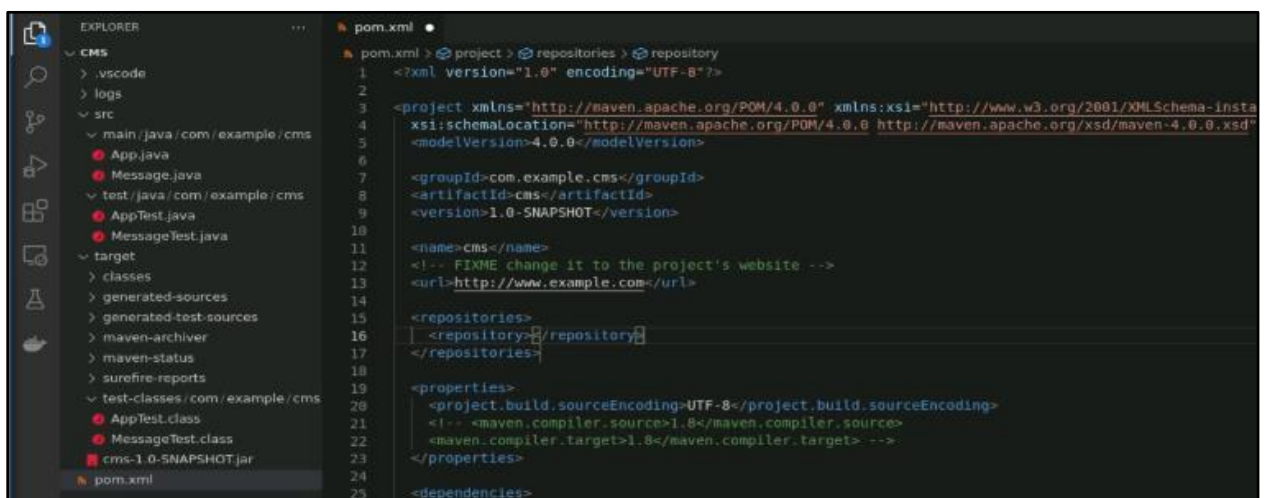




Step 6: Create command repository

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

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

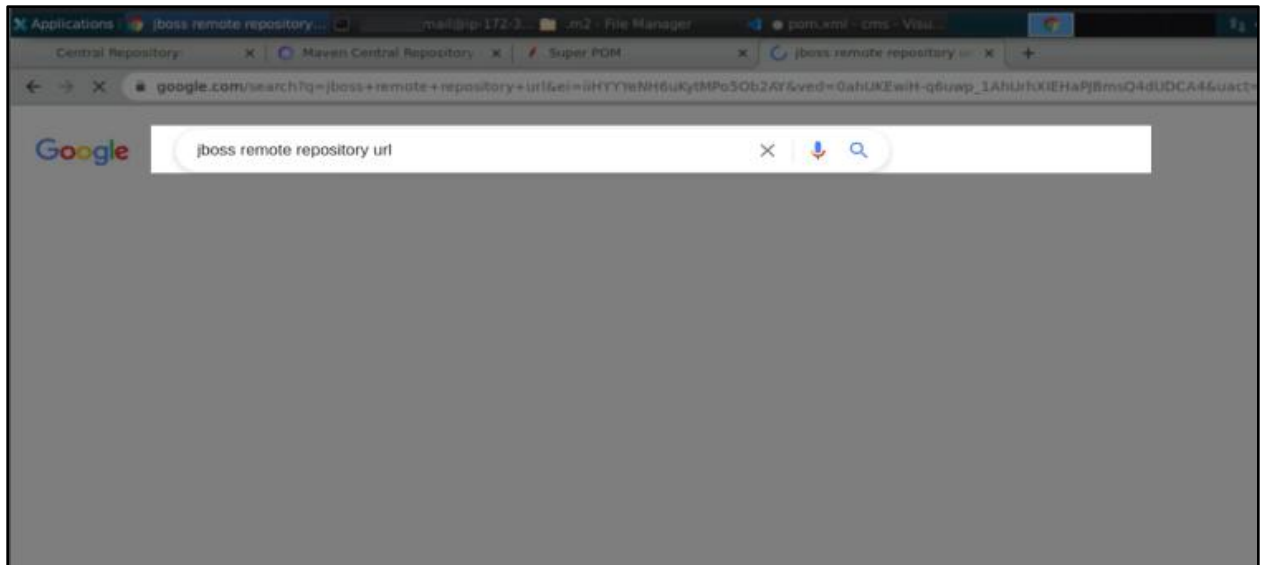


Note: Please refer to the previous demo on how to create the CMS project

Step 7: Add ID and URL

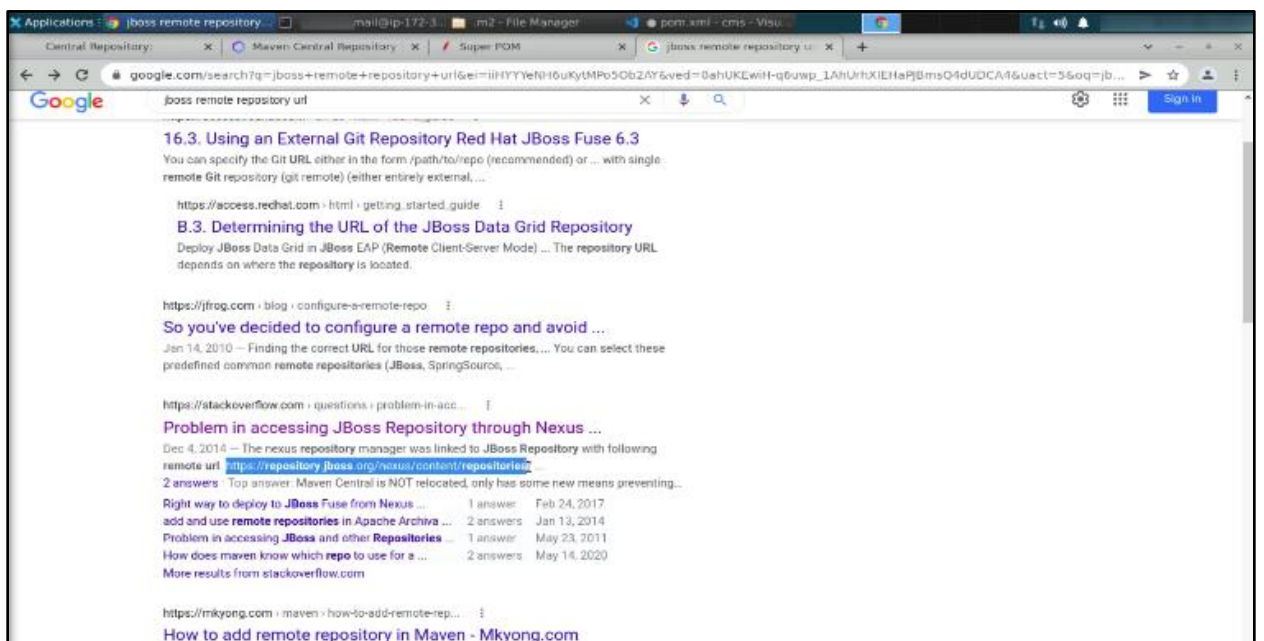
7.1 Go to the search box and type the following:

jboss remote repository url



7.2 Look for the remote URL

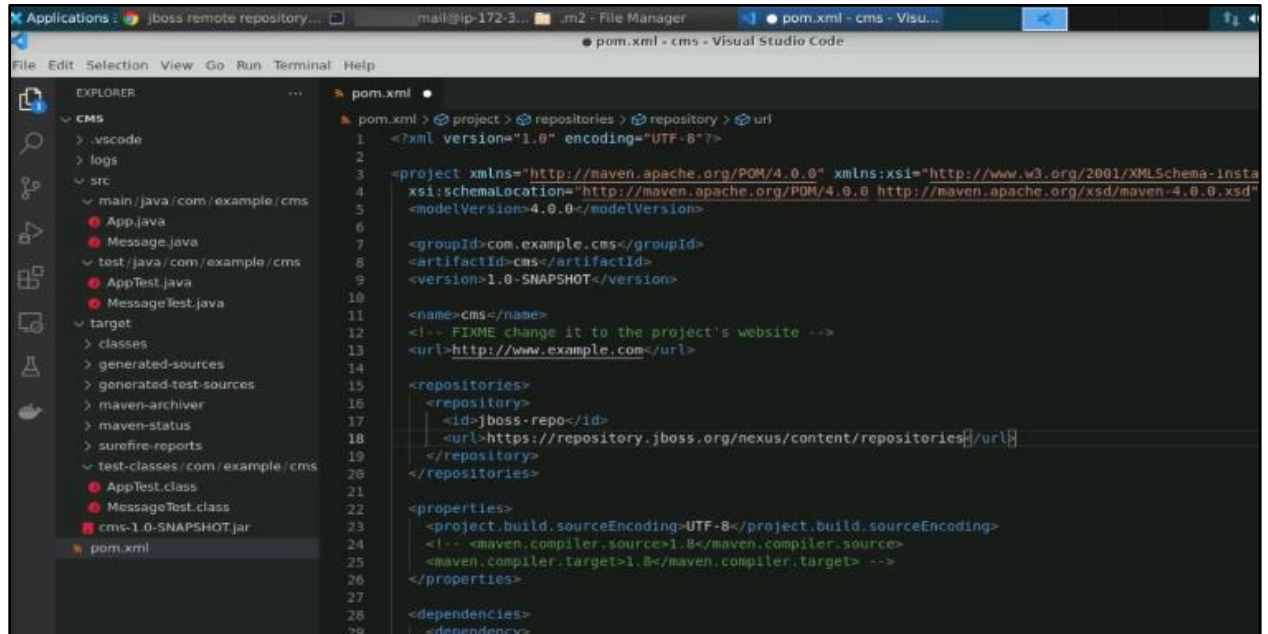
<https://repository.jboss.org/nexus/content/repositories/>



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

```
<id>jboss-repo</id>
```

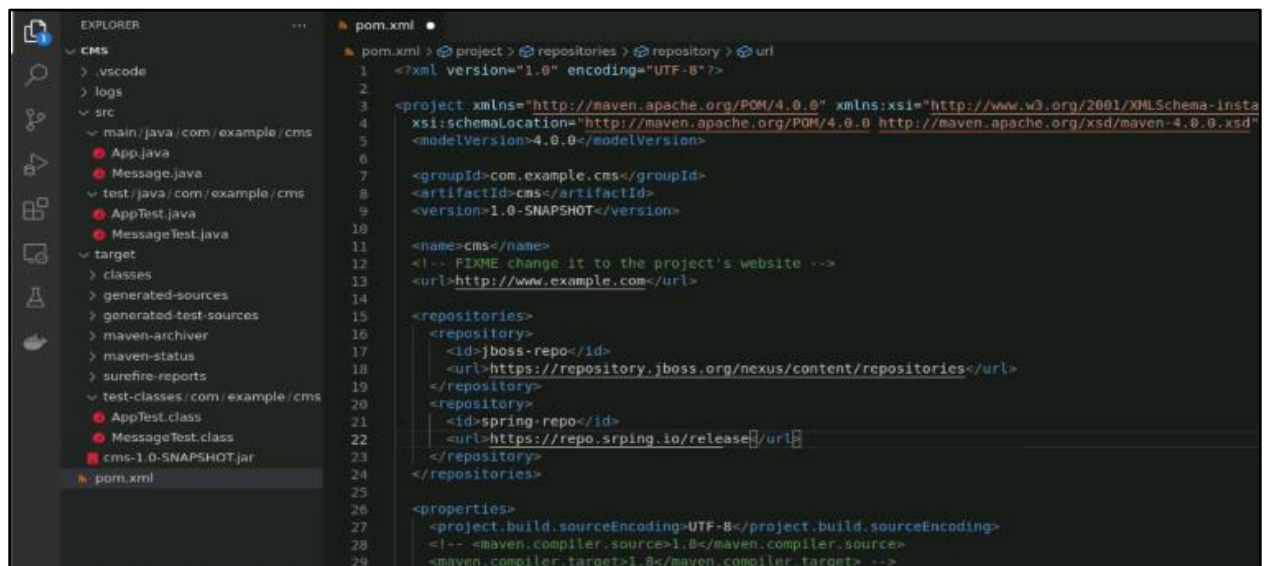
```
<url>https://repository.jboss.org/nexus/content/repositories</url>
```



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>
```



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.