

Assignment 1

Tasks to do:

- Create a maven project
- Push maven project to GitHub
- Create Jenkinsfile in the project
- Configure Maven, Jenkins server and Nexus Server

Prerequisites (installed software):

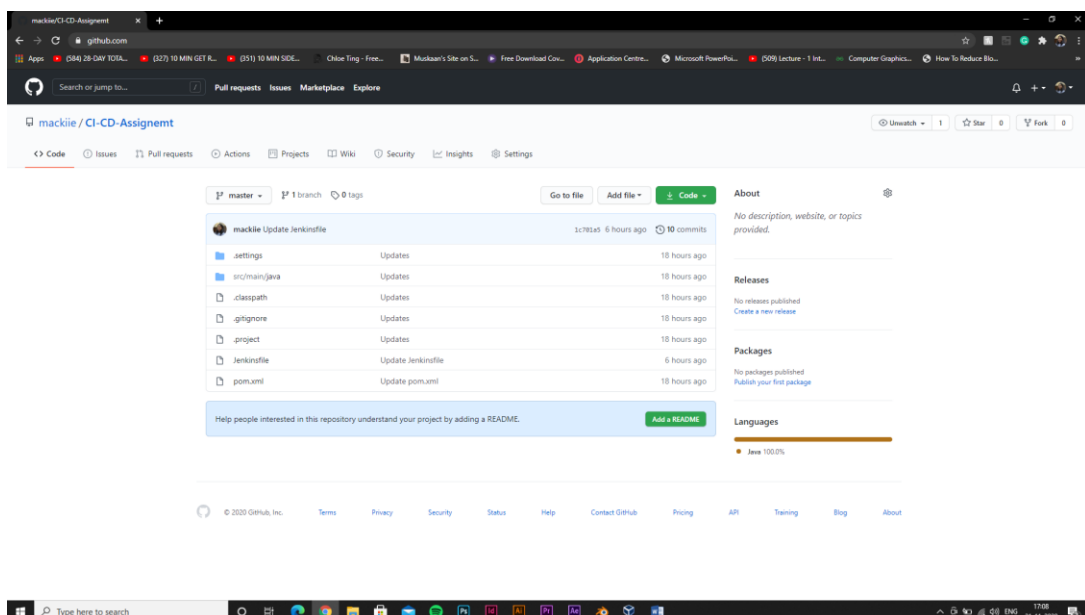
- Java (java 11)
- Maven
- Jenkins
- Sonatype Nexus

Solution:

Step 1:

Upload a maven project on GitHub and create a Jenkinsfile in it

The Jenkinsfile will be used by Jenkins to create and run the pipeline



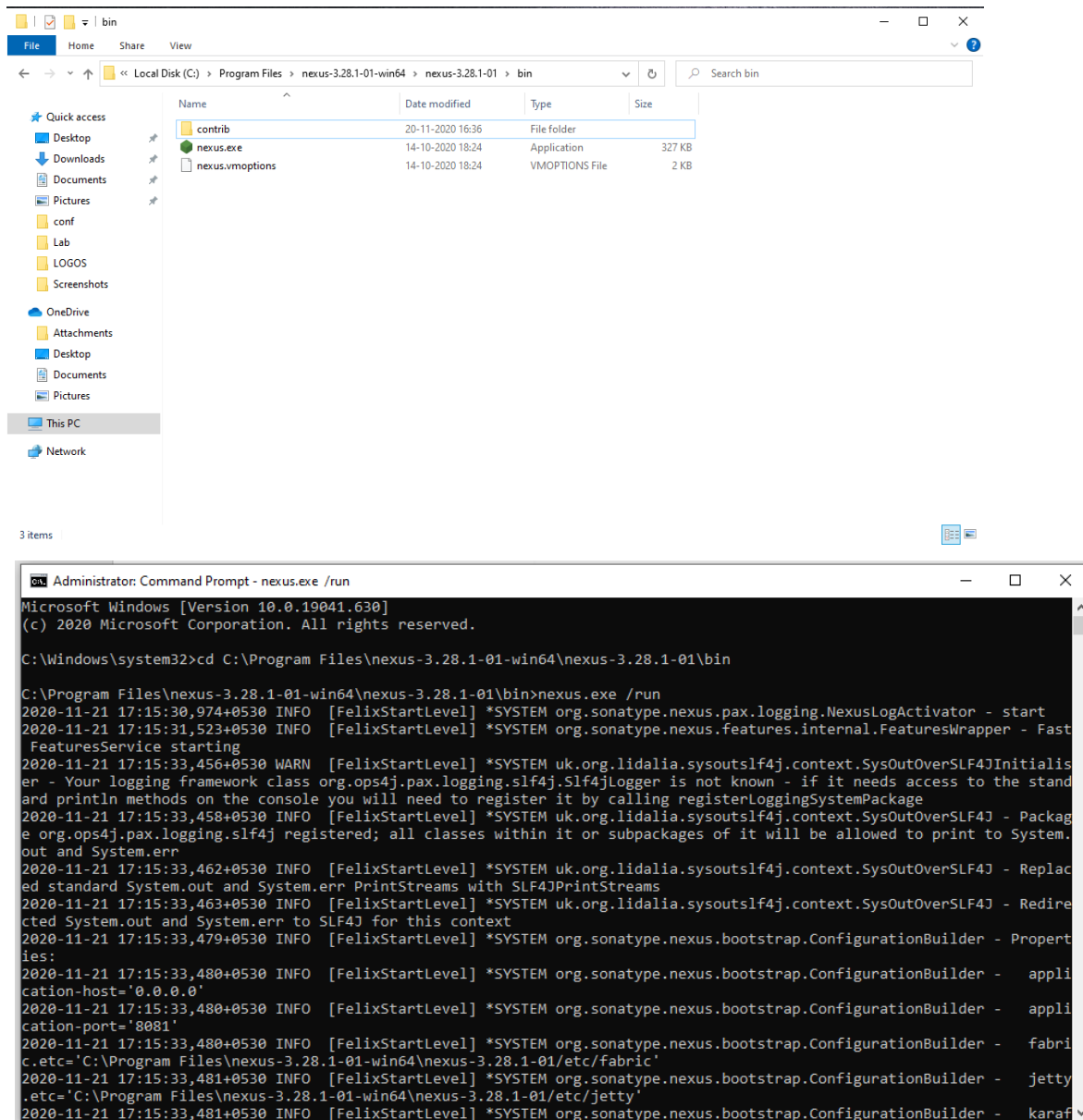
Step 2:

Go to the location on your system where nexus is installed.

Open the bin folder to find nexus.exe file

Open command prompt in the same folder and run the following command: `nexus.exe`

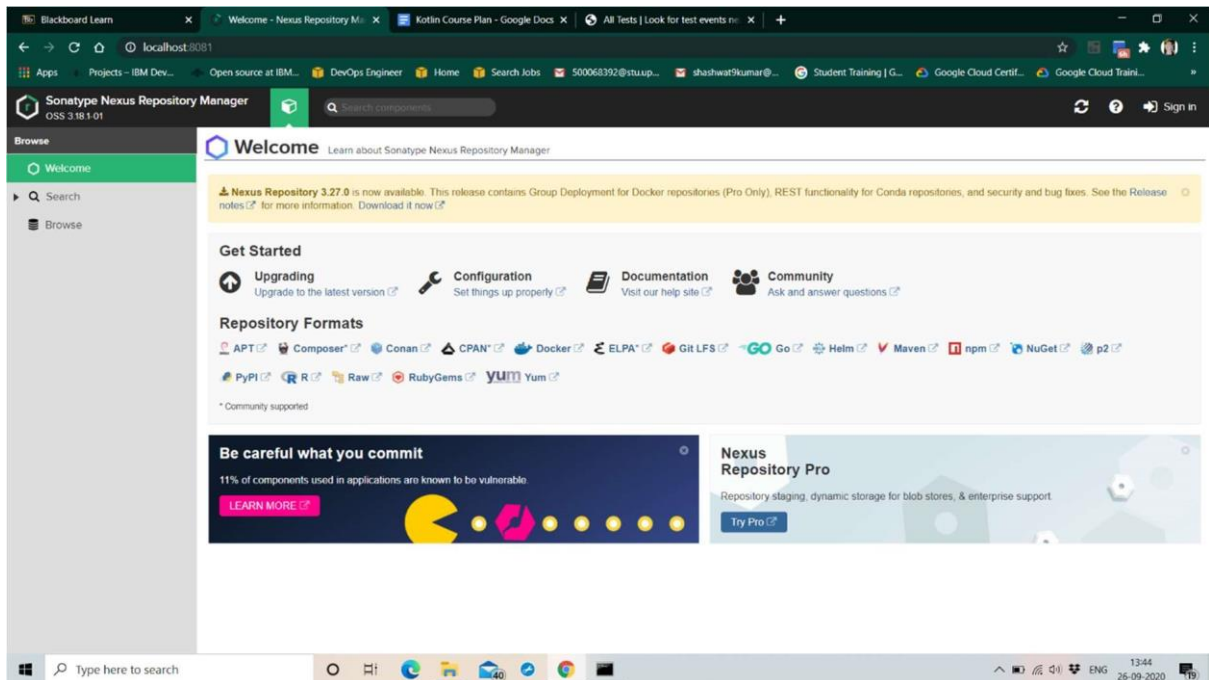
`/run`



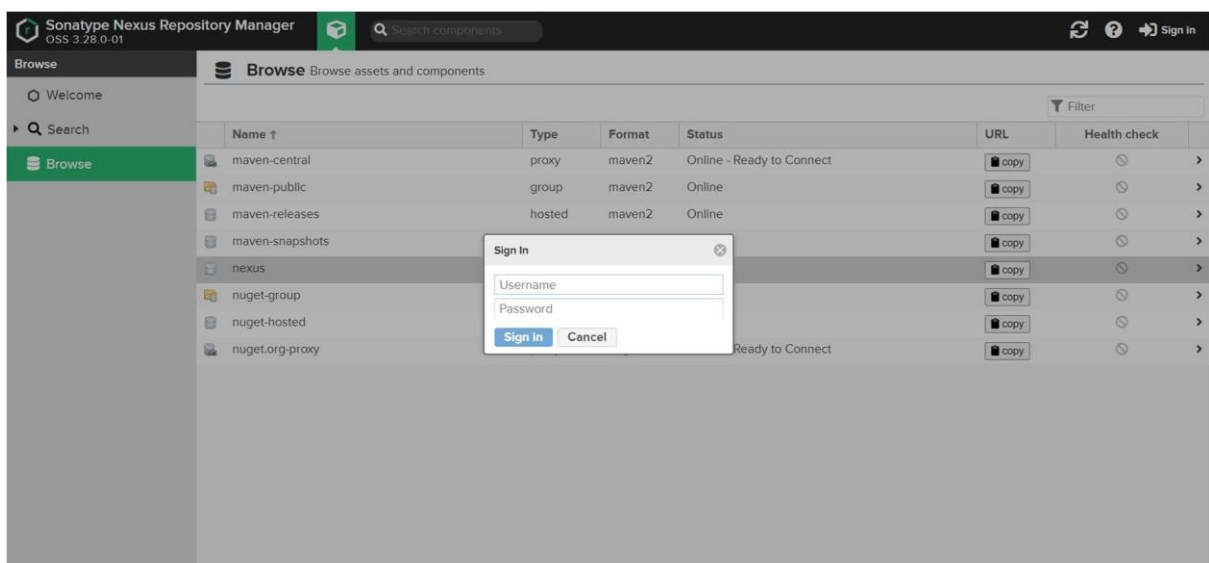
On successful start-up of nexus the terminal shows the following:

```
2020-11-21 17:16:14,866+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.AbstractConnector - Started ServerConnector@77868ff7{HTTP/1.1, (http/1.1)}{0.0.0.0:8081}
2020-11-21 17:16:14,866+0530 INFO [jetty-main-1] *SYSTEM org.eclipse.jetty.server.Server - Started @54752ms
2020-11-21 17:16:14,866+0530 INFO [jetty-main-1] *SYSTEM org.sonatype.nexus.bootstrap.jetty.JettyServer -
-----
Started Sonatype Nexus OSS 3.28.1-01
-----
2020-11-21 17:16:15,725+0530 INFO [qtp322277527-51] *UNKNOWN org.apache.shiro.session.mgt.AbstractValidatingSessionManager -
```

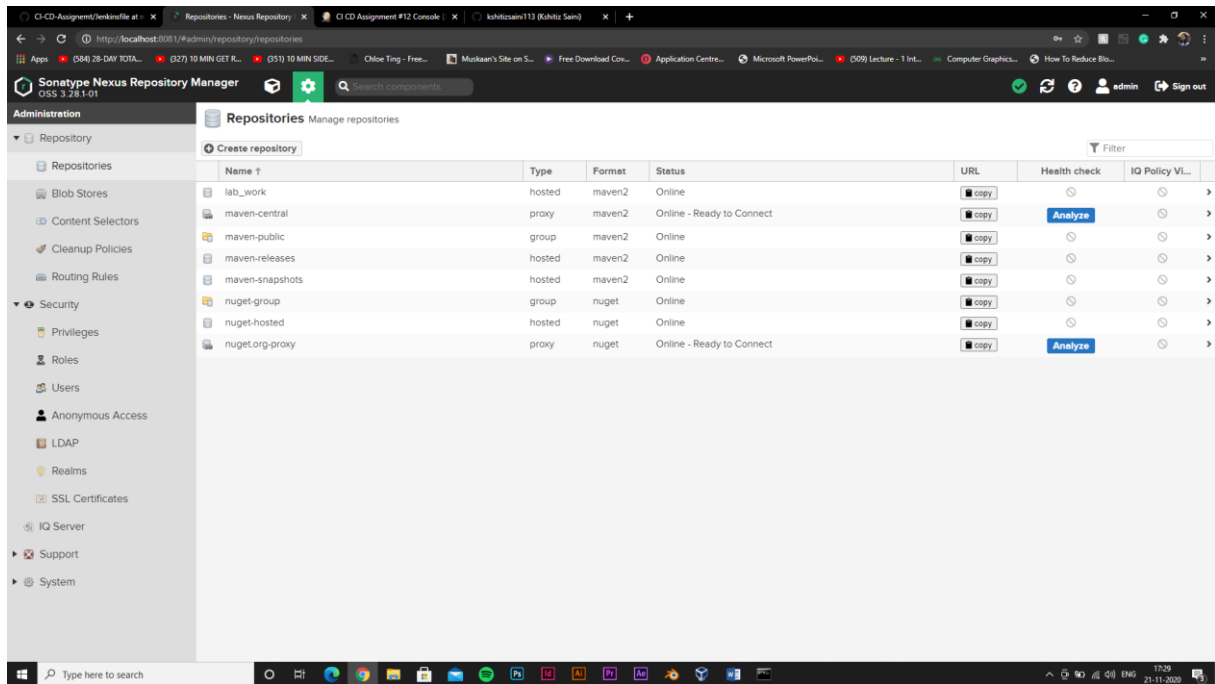
Once the nexus server runs head to localhost:8081, the port where Nexus server runs



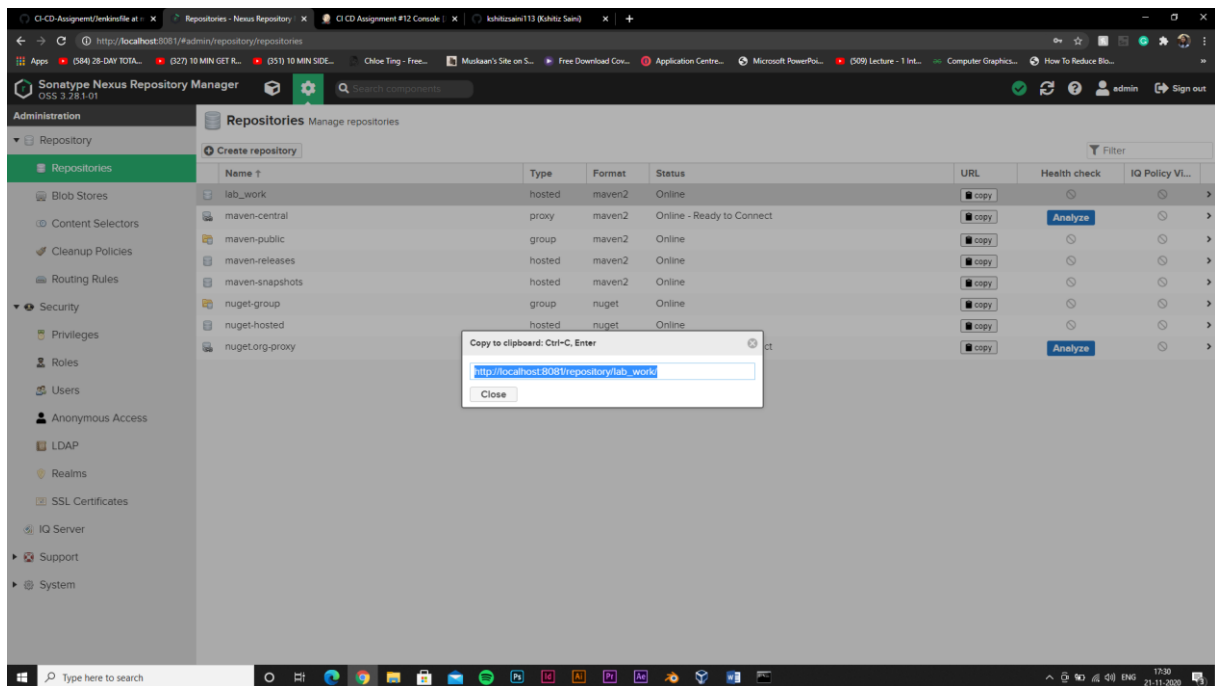
Log in into nexus server using your username and password



On login, Nexus server dashboard should look similar to this



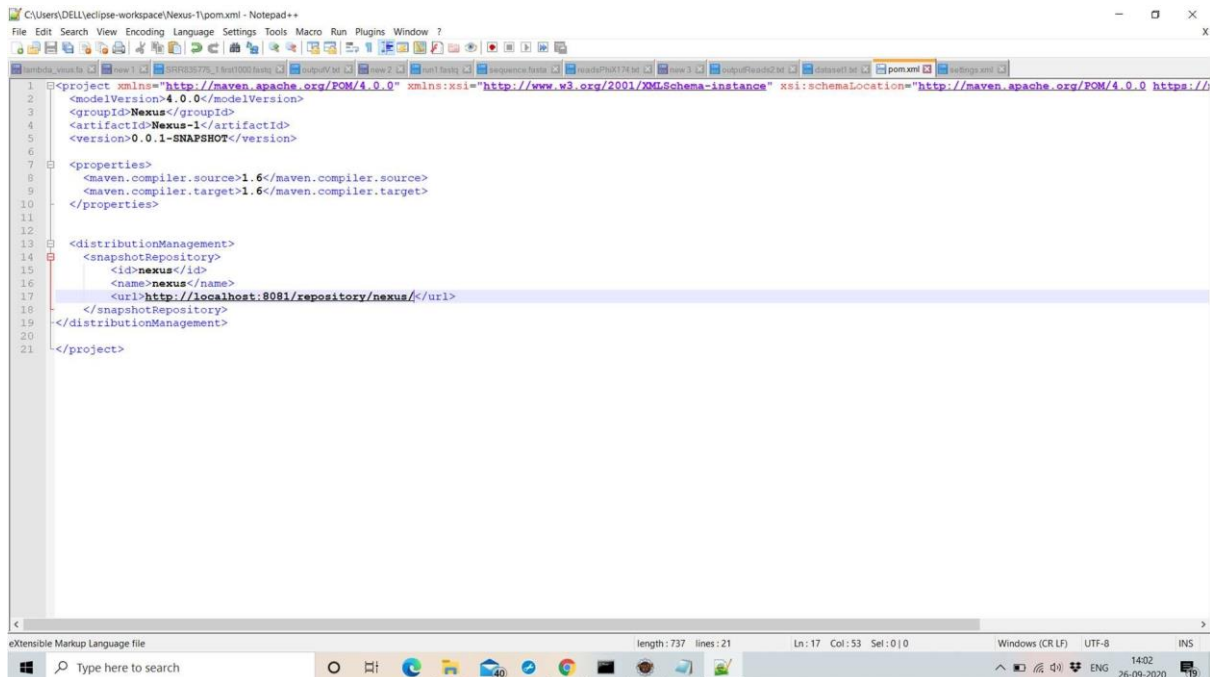
Create a new repository in Nexus (here called “nexus”) and copy its URL



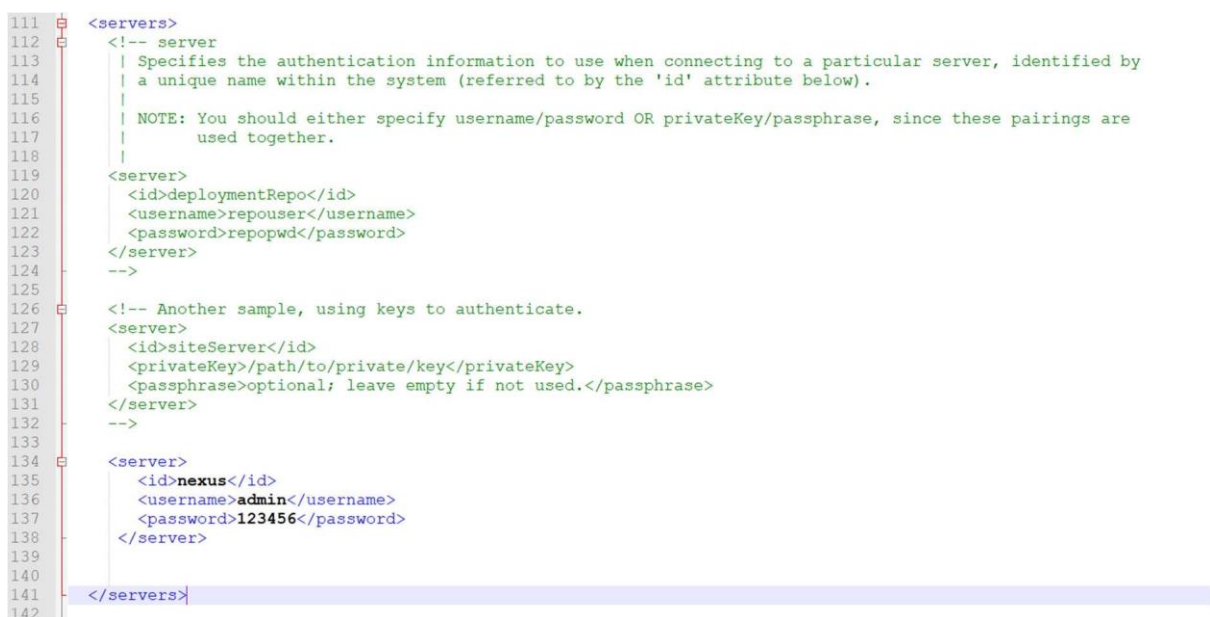
Step 3:

Open the pom.xml of the Maven project whose artifact is to be published to Nexus

Add the snapshot Repository tag into the pom.xml and give the URL of Nexus repository copied



Open the [settings.xml](#) file from the place where maven is installed and edit the <servers> tag in it to add the username and password for the deployment server

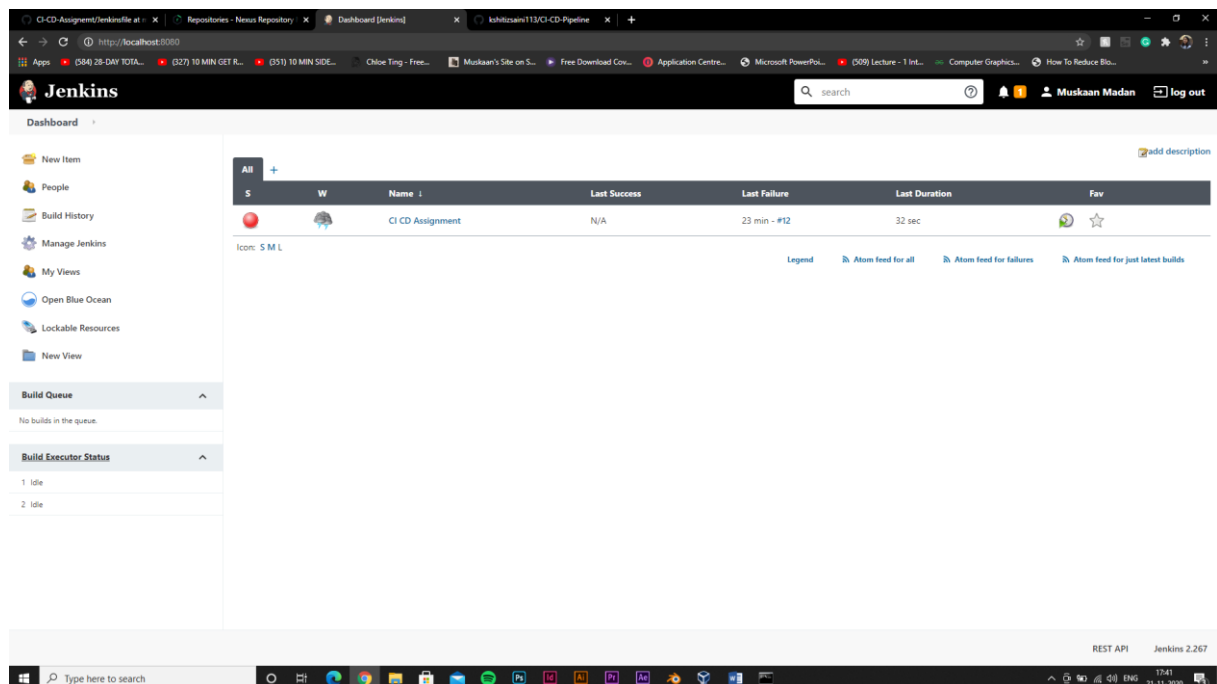


Step 4:

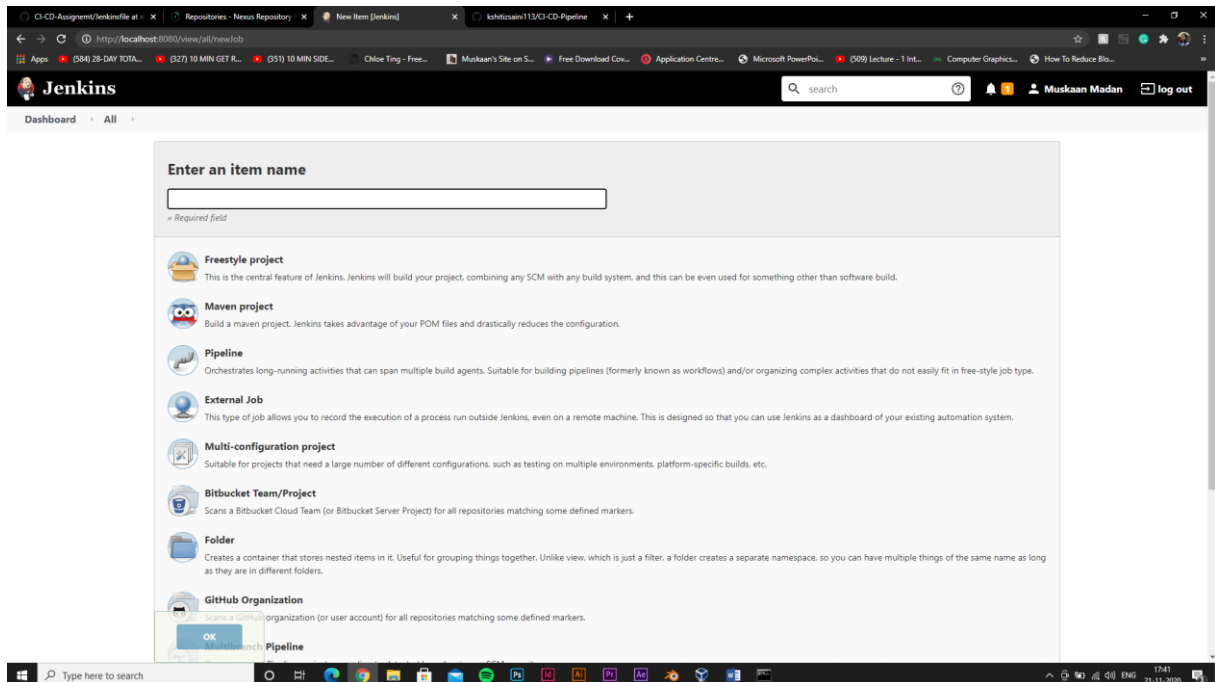
Open the location in terminal where Jenkins is installed and run the following command: `java -jar jenkins.war`

```
Administrator: Command Prompt - java -jar jenkins.war
WARNING: Please consider reporting this to the maintainers of jenkins.ClassLoaderReflectionToolkit
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
2020-11-21 11:46:35.056+0000 [id=35] INFO jenkins.InitReactorRunner$1#onAttained: Prepared all plugins
2020-11-21 11:46:35.083+0000 [id=46] INFO jenkins.InitReactorRunner$1#onAttained: Started all plugins
2020-11-21 11:46:36.925+0000 [id=46] INFO jenkins.InitReactorRunner$1#onAttained: Augmented all extensions
2020-11-21 11:46:37.114+0000 [id=37] INFO jenkins.InitReactorRunner$1#onAttained: System config loaded
2020-11-21 11:46:37.117+0000 [id=35] INFO jenkins.InitReactorRunner$1#onAttained: System config adapted
2020-11-21 11:46:37.222+0000 [id=38] INFO jenkins.InitReactorRunner$1#onAttained: Loaded all jobs
2020-11-21 11:46:37.223+0000 [id=34] INFO jenkins.InitReactorRunner$1#onAttained: Configuration for all jobs updated
2020-11-21 11:46:37.265+0000 [id=64] INFO hudson.model.AsyncPeriodicWork#lambda$doRun$0: Started Download metadata
2020-11-21 11:46:37.276+0000 [id=64] INFO hudson.model.AsyncPeriodicWork#lambda$doRun$0: Finished Download metadata. 10 ms
2020-11-21 11:46:37.531+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Completed initialization
2020-11-21 11:46:37.639+0000 [id=25] INFO hudson.WebAppMain$3#run: Jenkins is fully up and running
2020-11-21 11:46:46.378+0000 [id=57] INFO o.j.p.m.GlobalPipelineMavenConfig#getDao: Connect to database jdbc:h2:file:C:\Users\admin\.jenkins\jenkins-jobs\jenkins-jobs;AUTO_SERVER=TRUE;MULTI_THREADED=1;QUERY_CACHE_SIZE=25;JMX=TRUE with username sa and properties {}
2020-11-21 11:46:46.400+0000 [id=57] INFO c.zaxxer.hikari.HikariDataSource#<init>: HikariPool-1 - Starting...
2020-11-21 11:46:56.350+0000 [id=57] INFO c.zaxxer.hikari.HikariDataSource#<init>: HikariPool-1 - Start completed.
2020-11-21 11:47:53.206+0000 [id=69] INFO o.j.p.workflow.job.WorkflowRun#finish: CI CD Assignment #12 completed: FAILURE
2020-11-21 12:09:17.588+0000 [id=192] INFO hudson.model.AsyncPeriodicWork#lambda$doRun$0: Started Periodic background build discarder
2020-11-21 12:09:17.603+0000 [id=192] INFO hudson.model.AsyncPeriodicWork#lambda$doRun$0: Finished Periodic background build discarder. 15 ms
```

Log in into Jenkins dashboard



Click on new Item to create a new pipeline

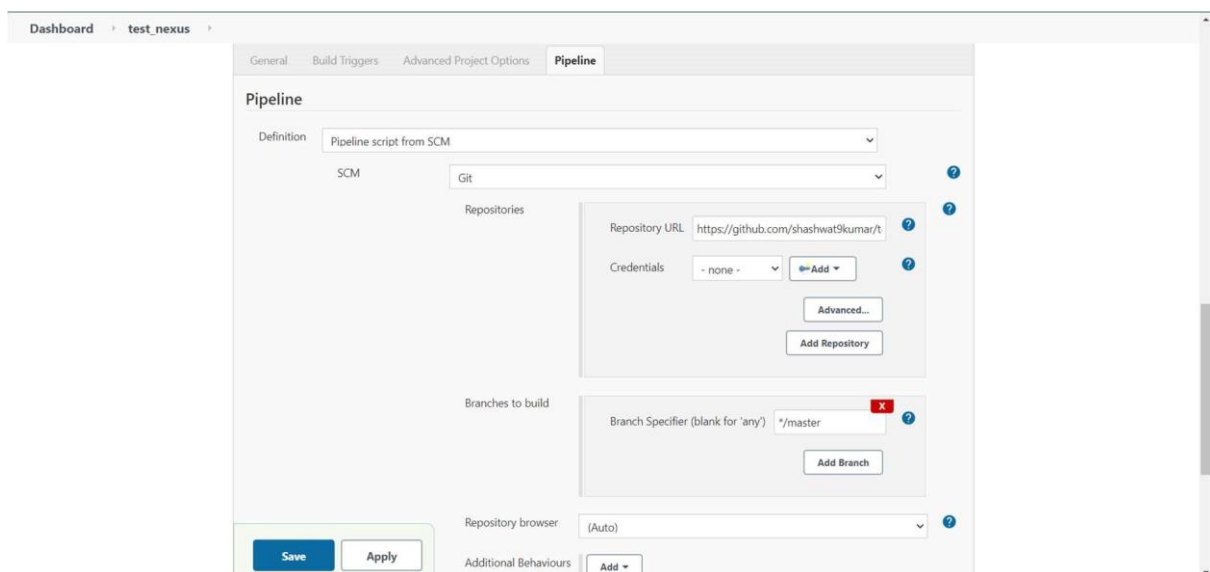


On the page that opens head over to ‘Pipeline’ section and select ‘Pipeline Script from SCM’

In the SCM, select ‘Git’

Provide the URL of the GitHub repository where your project is hosted

Click on ‘Save’ and ‘Apply’



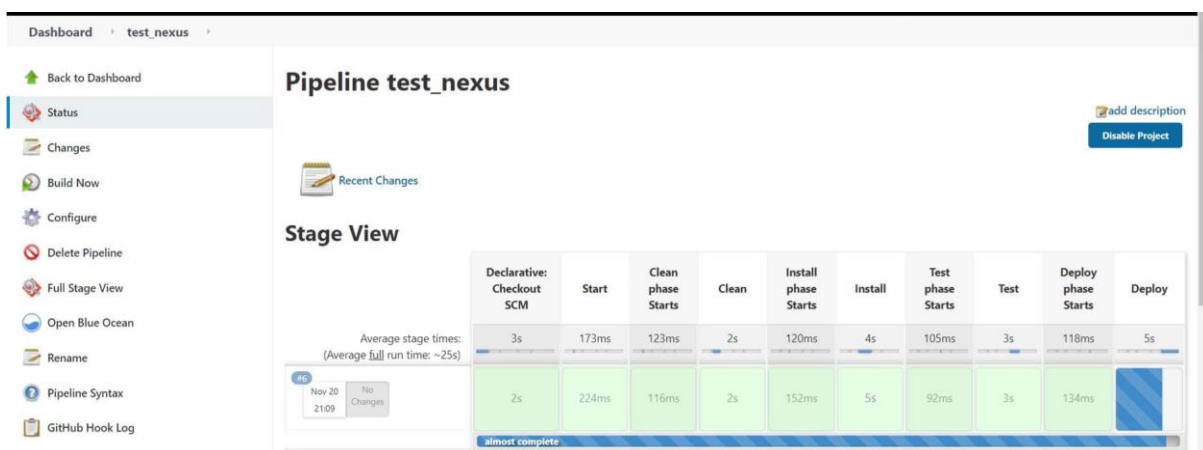
The GitHub repository must contain a Jenkins file that contains “[mvn deploy](#)” stage. This would help us deploy the artifact on Nexus server.

Step 5:

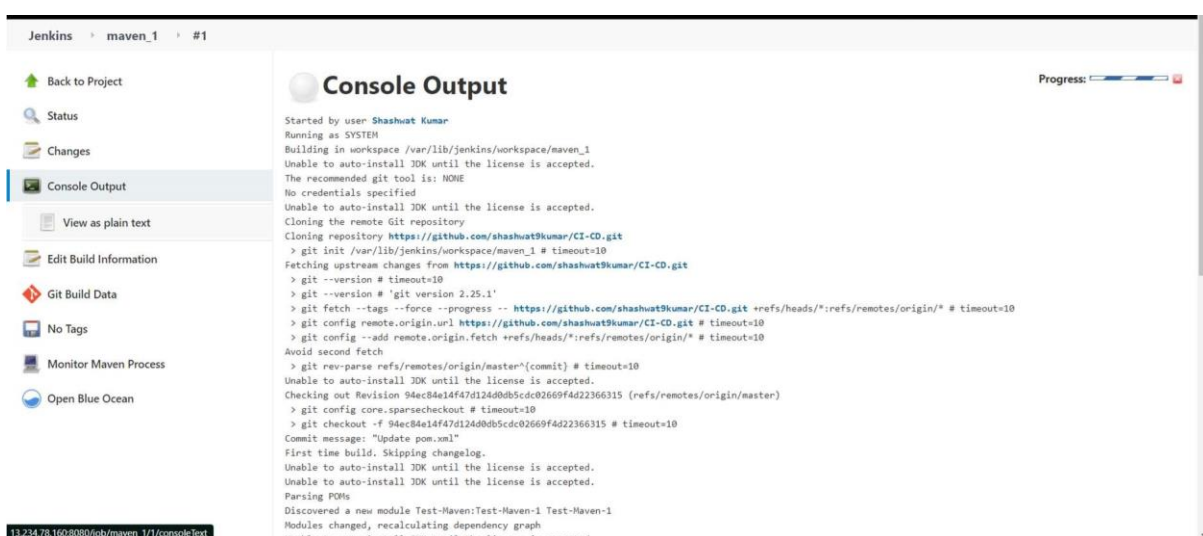
In the screen that pops up, click on Build Now option to build the project.

The project starts to build and run

The project pipeline can be seen on the screen depicting the stages defined in the Jenkinsfile



Select the console output option to check how the build is running



If the build runs successfully it would return “BUILD SUCCESS”. It would return failure in case of any errors in the project

```
Dashboard > test_nexus > #6

[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Test)
[Pipeline] bat

C:\Users\DELL\.jenkins\workspace\test_nexus>mvn test
[INFO] Scanning for projects...
[INFO]
[INFO] -----< Nexus:Nexus-1 >-----
[INFO] Building Nexus-1 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ Nexus-1 ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\DELL\.jenkins\workspace\test_nexus\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ Nexus-1 ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ Nexus-1 ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\DELL\.jenkins\workspace\test_nexus\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ Nexus-1 ---
[INFO] No sources to compile
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ Nexus-1 ---
[INFO] No tests to run.
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 1.252 s
[INFO] Finished at: 2020-11-20T21:09:27+05:30
[INFO] -----
```

Browse the Nexus repository on the running nexus server now to see the deployed jar file

