

# **Build and Release Management Lab Experiment 4**

Name: Aryan Mukerji

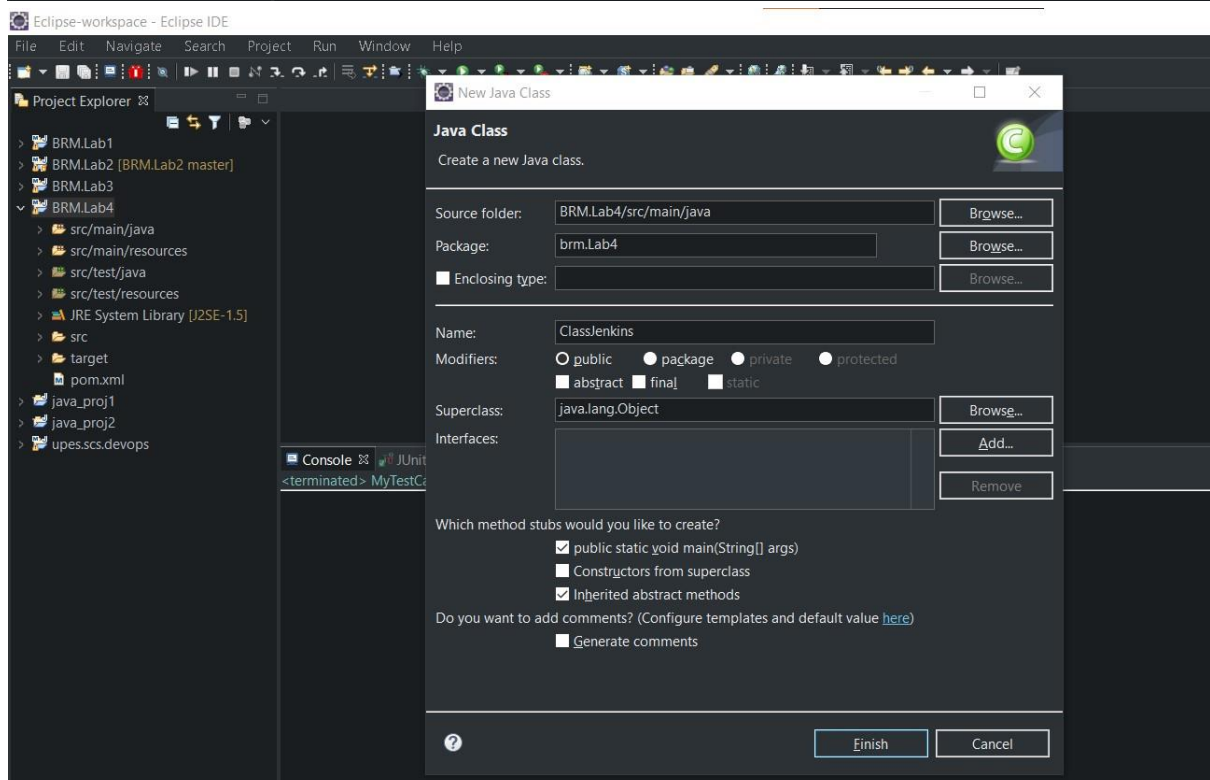
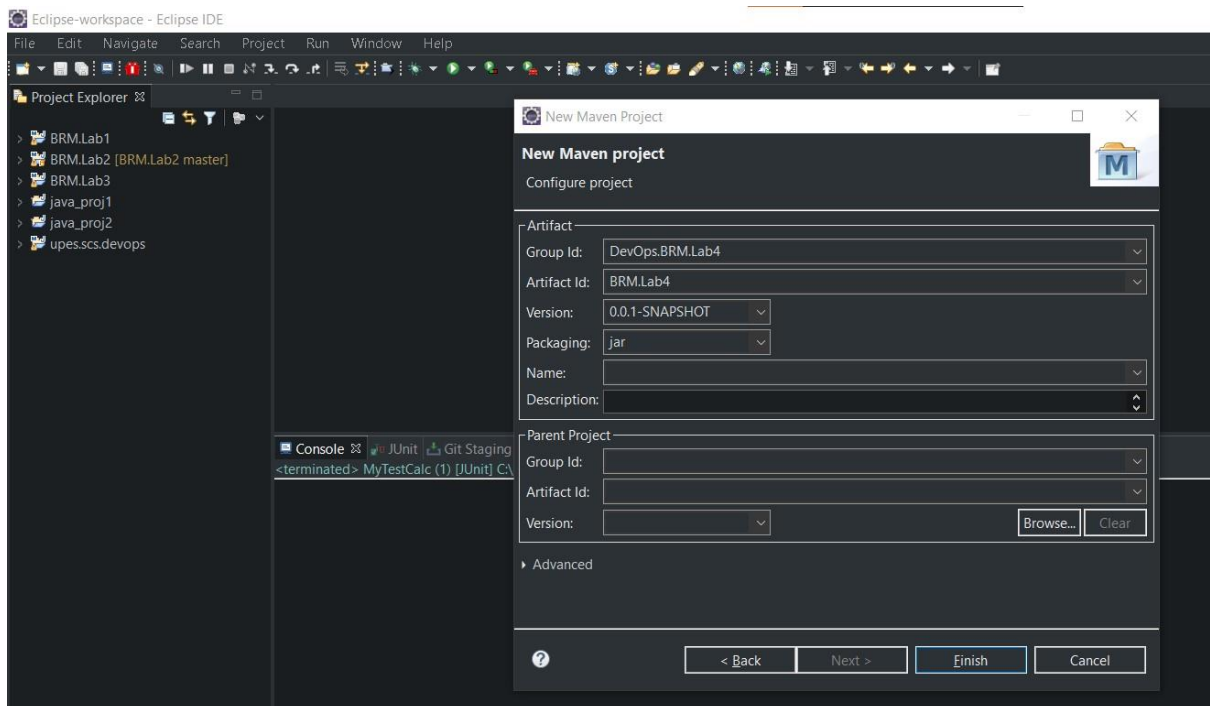
Roll No.: R171219007

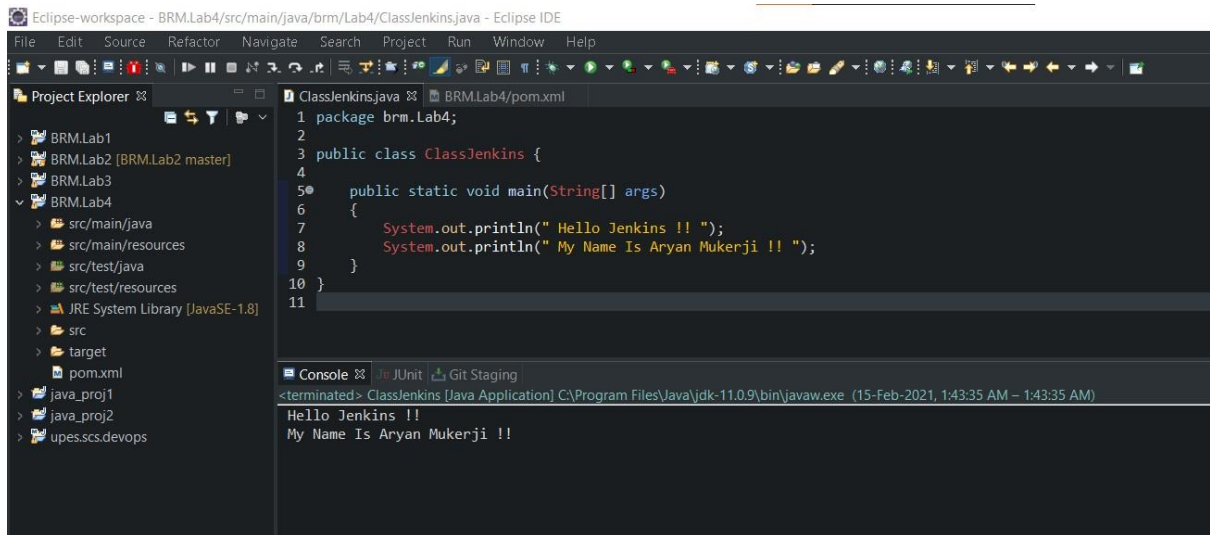
SAP ID.: 500075964

Branch: B.Tech-CSE-DevOps

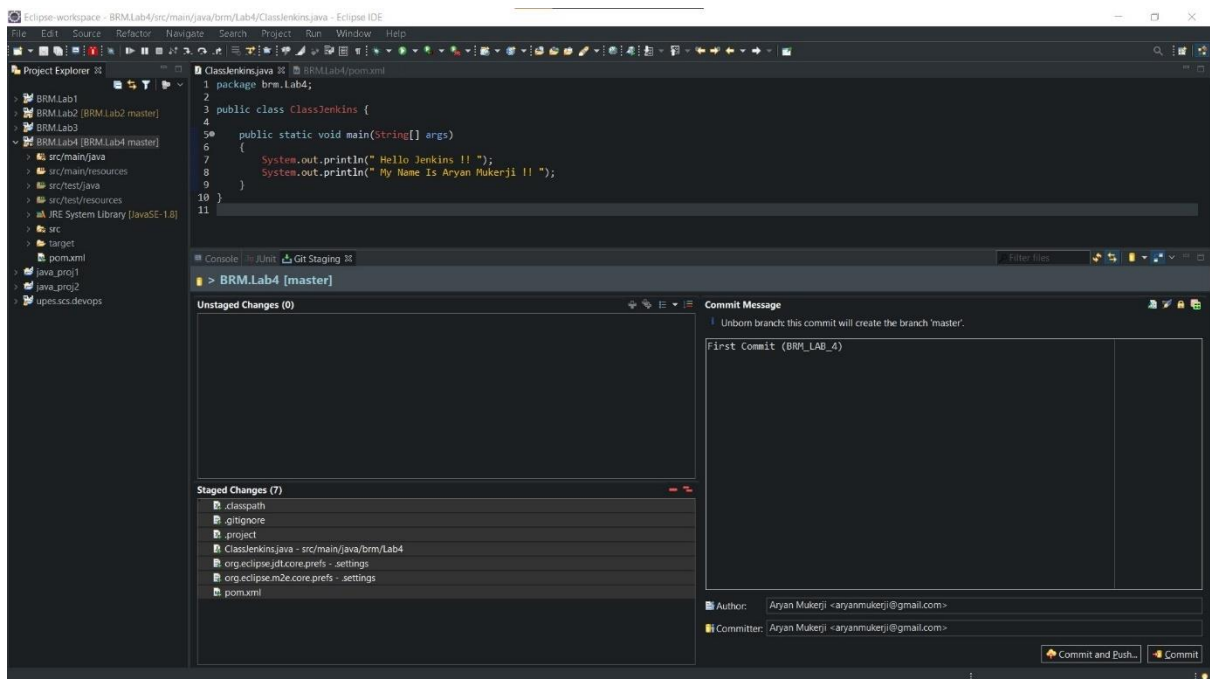
**Aim:** Create a maven project with a java class, initialize it with git, push the project into the remote repository and then use jenkins to automate the process of creating a maven build.

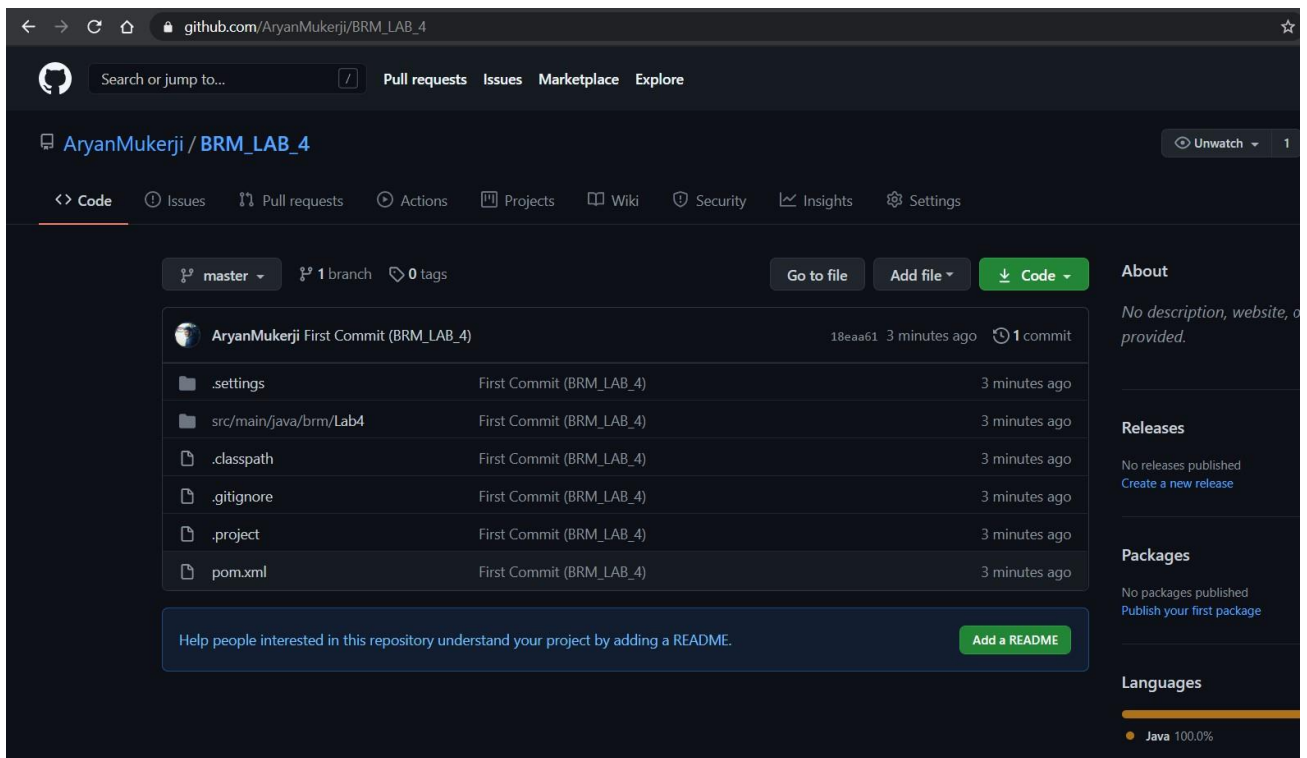
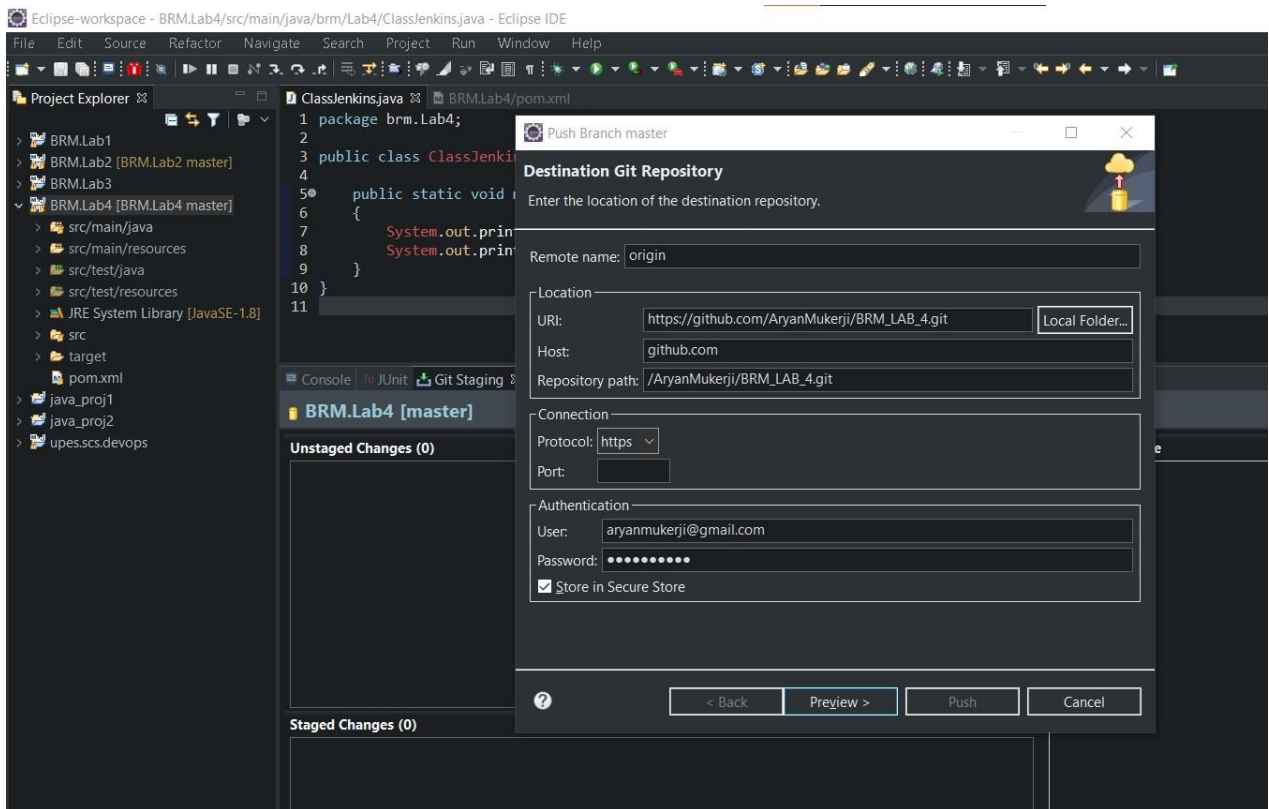
**Step 1:** Create a Maven project and a Java Class in it and add some java code in the class file.



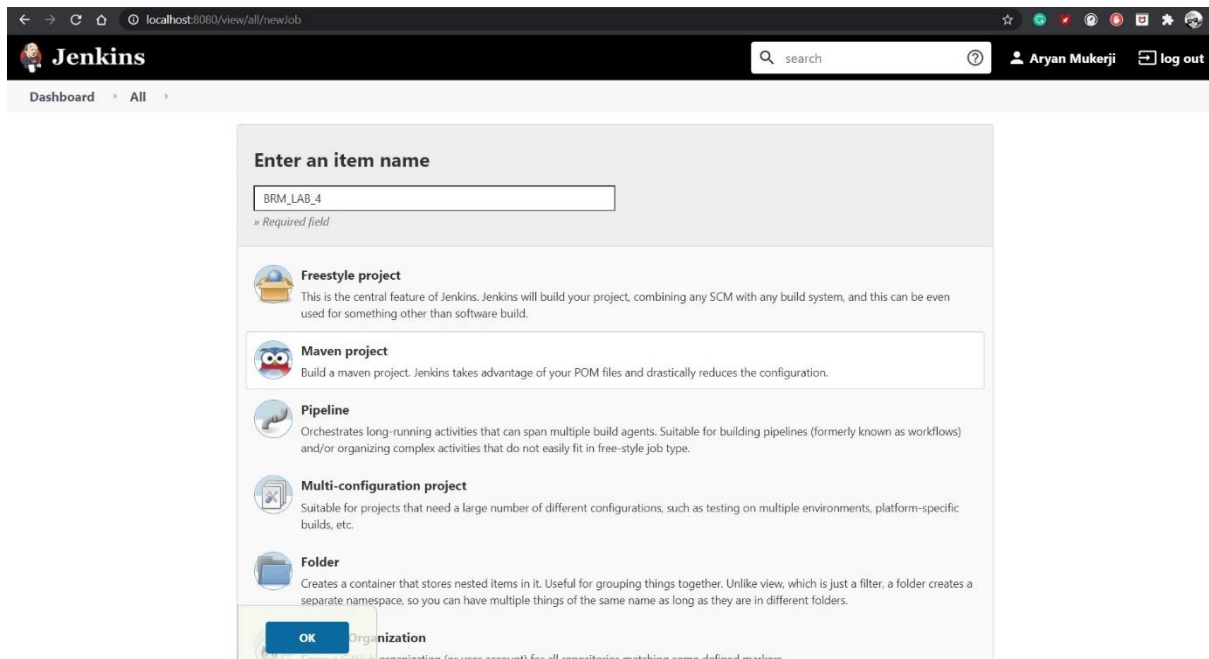


**Step 2:** Now initialize the project as a local git repository and then push the project into a remote git repository.

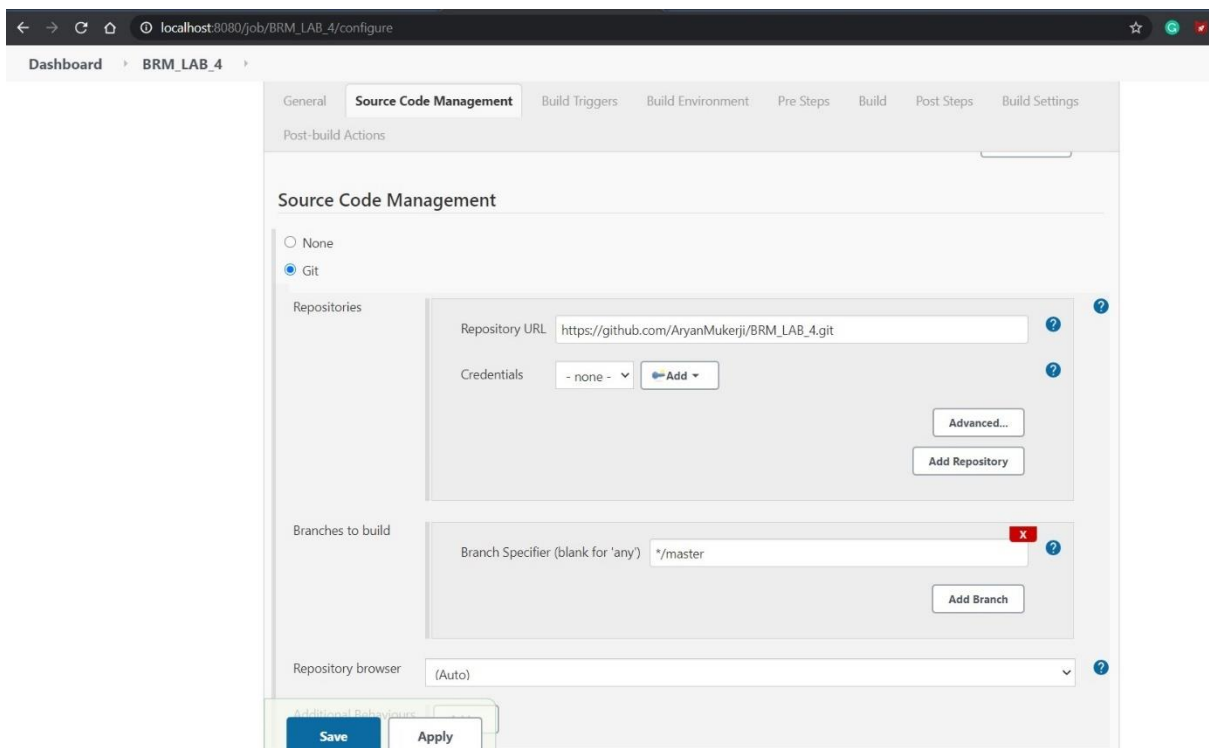




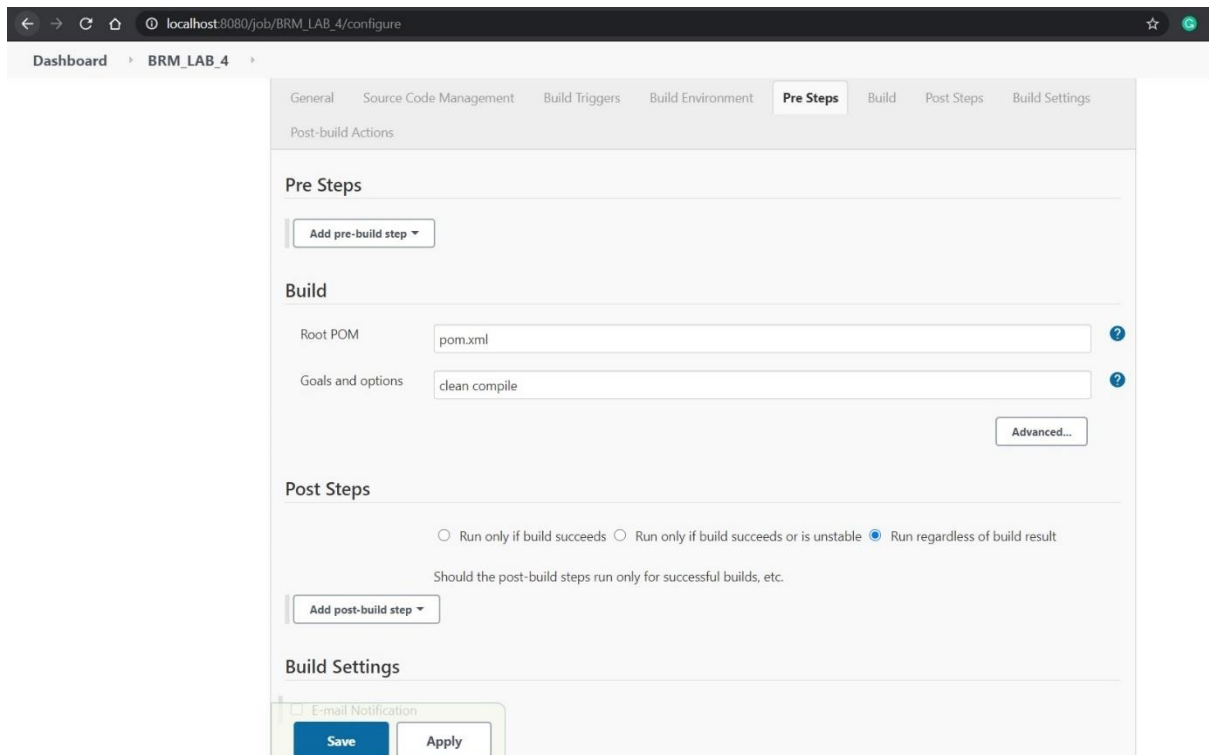
**Step 3:** Now open Jenkins, in Dashboard, click on “New item”, a page will open, now enter a name for your maven project and select “Maven project” and then click “OK”.



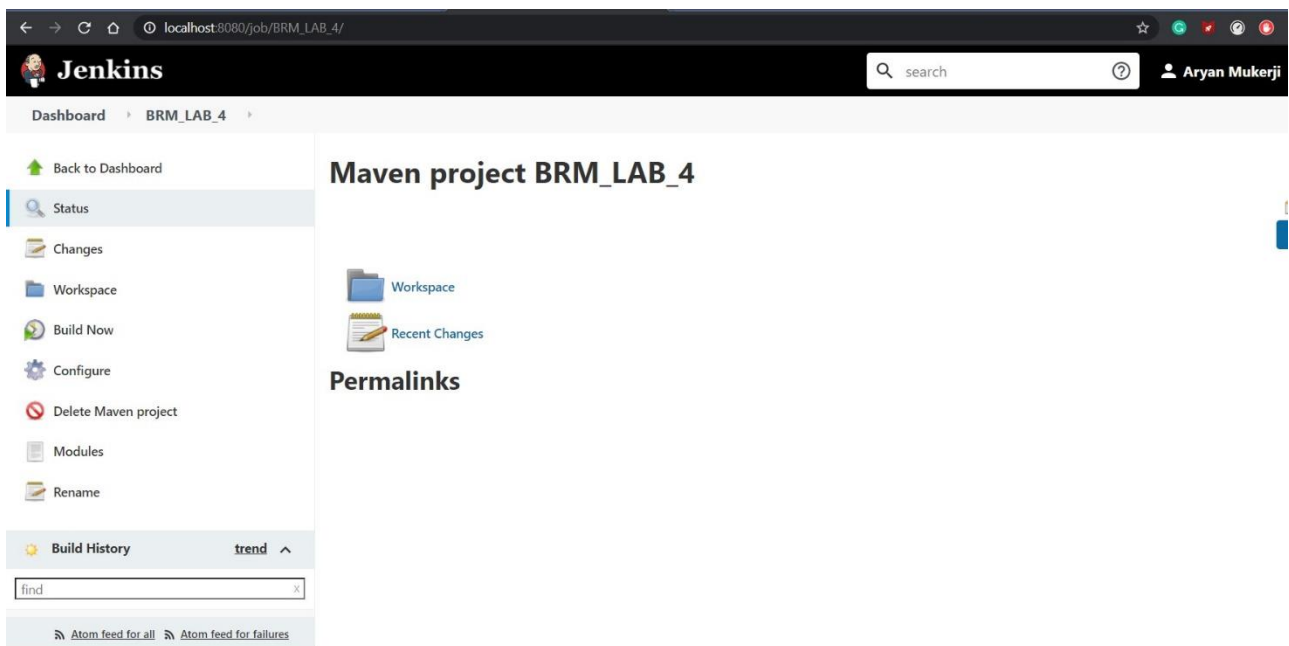
**Step 4:** A new page will open with many configurations to select from for your maven project. Under “Source Code Management”, select “Git” and paste remote repository URL in which the project is pushed.



**Step 5:** Now under “Build”, add goals like clean, compile, install and after that click on “Apply” and then click on “Save”. Now a maven build job has been created.

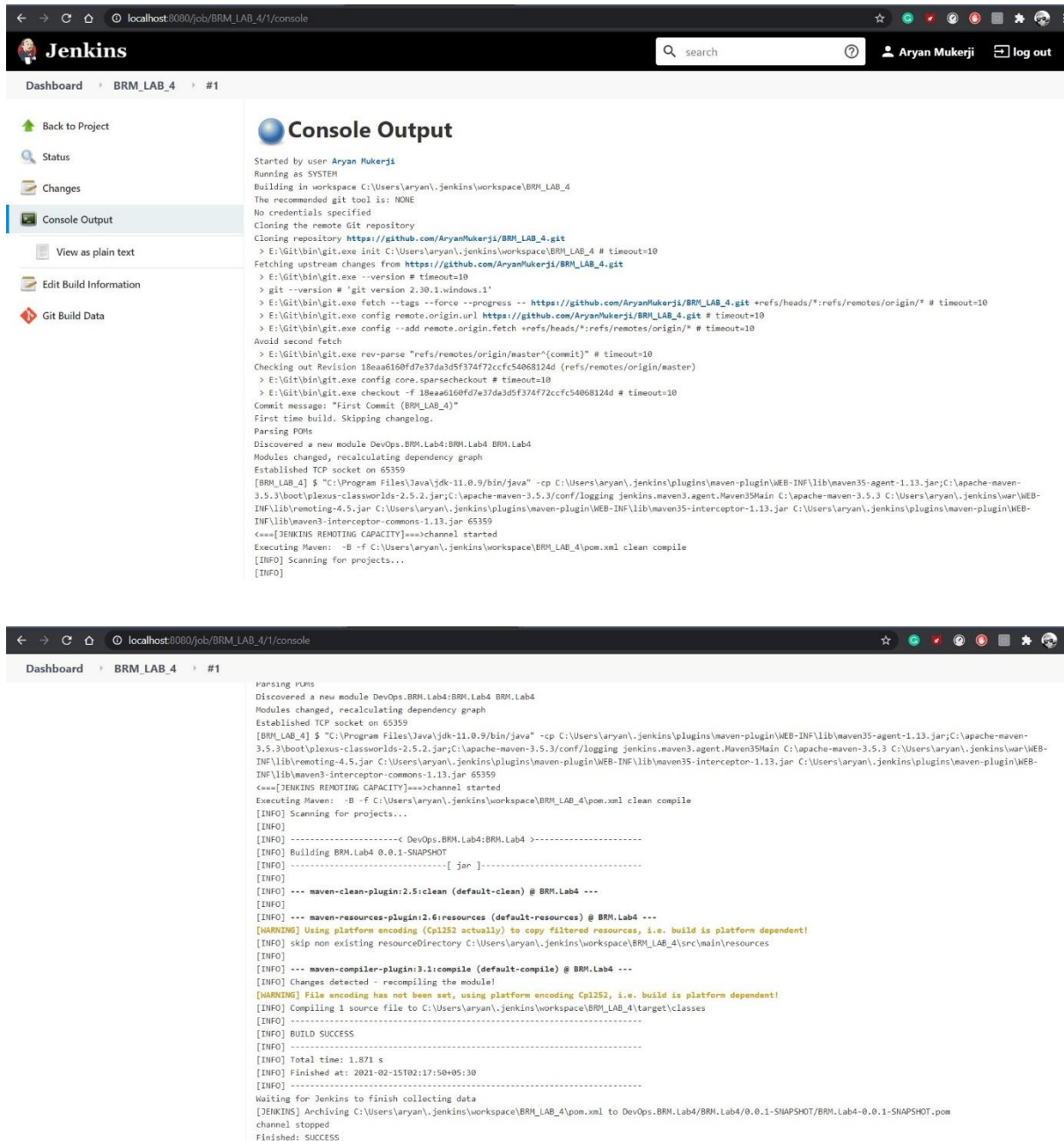


The screenshot shows the Jenkins configuration page for a job named "BRM\_LAB\_4". The browser address bar indicates the URL is "localhost:8080/job/BRM\_LAB\_4/configure". The page has a breadcrumb trail: "Dashboard > BRM\_LAB\_4 >". The configuration tabs at the top are: "General", "Source Code Management", "Build Triggers", "Build Environment", "Pre Steps", "Build", "Post Steps", and "Build Settings". The "Pre Steps" tab is currently selected. Below the tabs, there are sections for "Post-build Actions", "Pre Steps", "Build", "Post Steps", and "Build Settings". In the "Build" section, the "Root POM" is set to "pom.xml" and the "Goals and options" are set to "clean compile". There is an "Advanced..." button next to the goals field. In the "Post Steps" section, there are three radio buttons: "Run only if build succeeds", "Run only if build succeeds or is unstable", and "Run regardless of build result" (which is selected). Below these is a checkbox for "Should the post-build steps run only for successful builds, etc." and an "Add post-build step" button. In the "Build Settings" section, there is an "E-mail Notification" checkbox and "Save" and "Apply" buttons.



The screenshot shows the Jenkins main page for the job "Maven project BRM\_LAB\_4". The browser address bar indicates the URL is "localhost:8080/job/BRM\_LAB\_4/". The page has a header with the Jenkins logo, a search bar, and the user name "Aryan Mukerji". The breadcrumb trail is "Dashboard > BRM\_LAB\_4 >". On the left side, there is a sidebar with a "Back to Dashboard" link and a list of actions: "Status", "Changes", "Workspace", "Build Now", "Configure", "Delete Maven project", "Modules", and "Rename". Below these is a "Build History" section with a "trend" link and a search bar. At the bottom of the sidebar, there are links for "Atom feed for all" and "Atom feed for failures". The main content area on the right has a title "Maven project BRM\_LAB\_4" and a blue vertical bar on the right side. Below the title, there are icons for "Workspace" and "Recent Changes". Below these is a section titled "Permalinks".

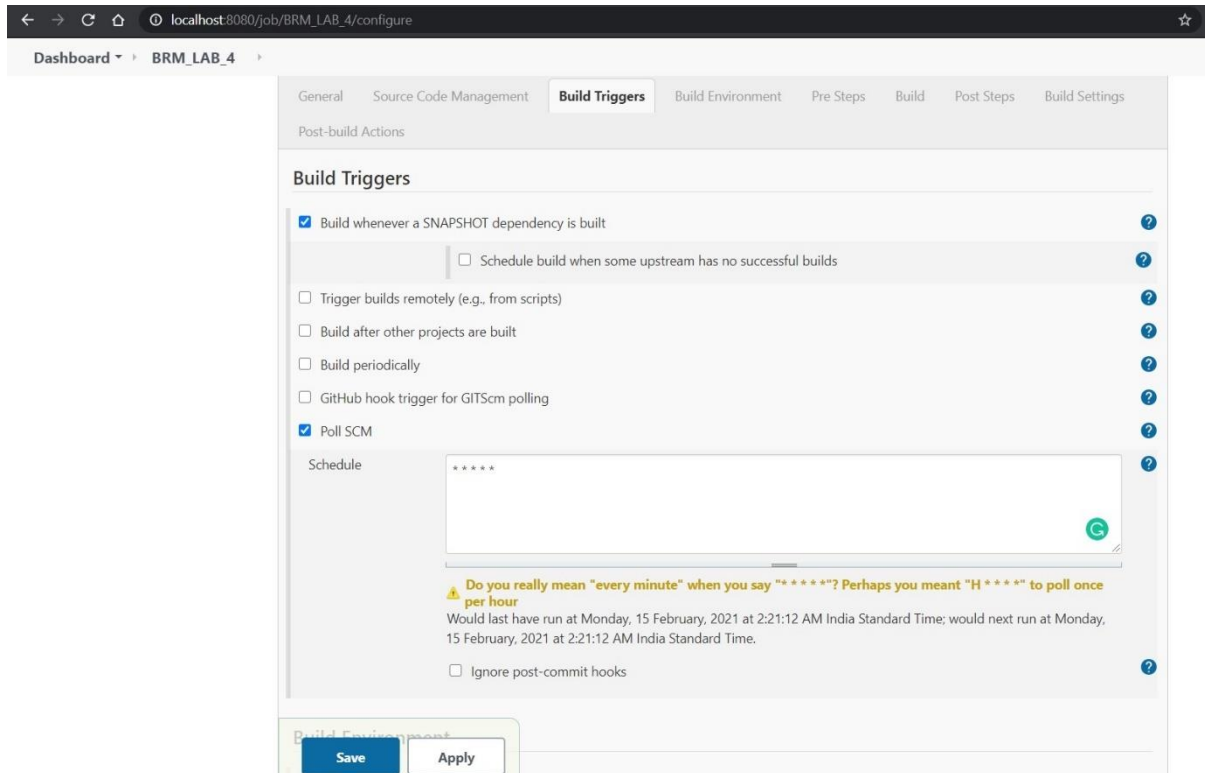
**Step 6:** Now click on “Build Now” to build the run the job. You can see the job running by opening “Console Output”.



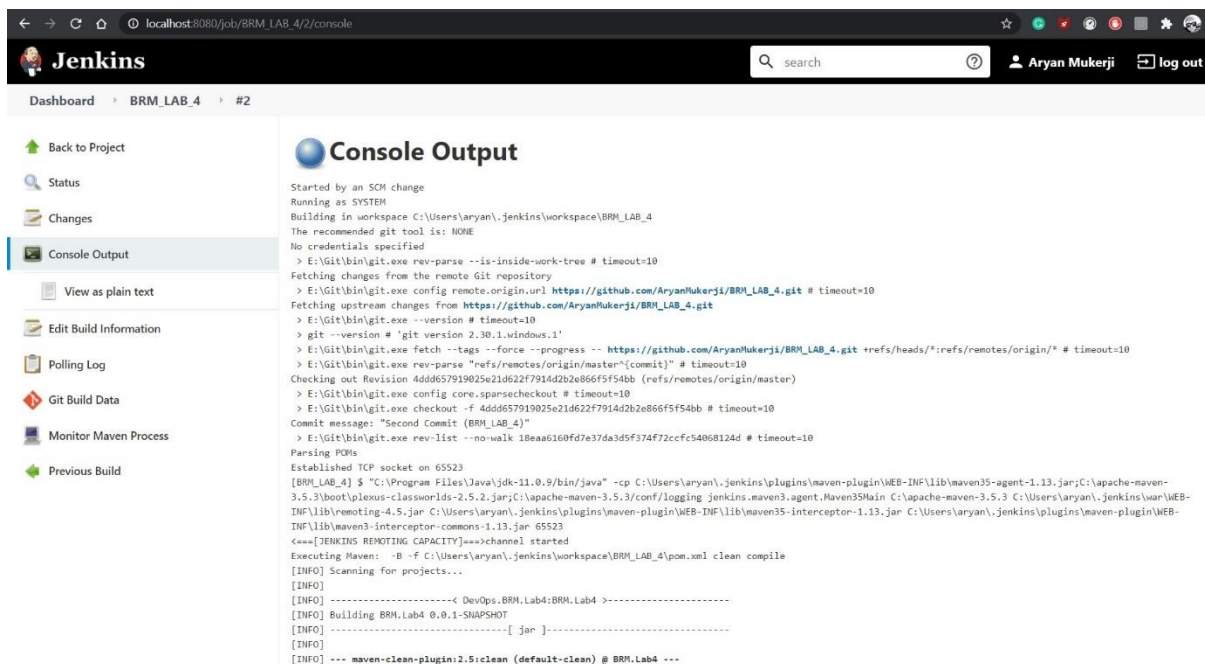
```
Started by user Aryan Mukerji
Running as SYSTEM
Building in workspace C:\Users\aryan\.jenkins\workspace\BRM_LAB_4
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/AryanMukerji/BRM_LAB_4.git
> E:\Git\bin\git.exe init C:\Users\aryan\.jenkins\workspace\BRM_LAB_4 # timeout=10
Fetching upstream changes from https://github.com/AryanMukerji/BRM_LAB_4.git
> E:\Git\bin\git.exe --version # timeout=10
> git --version # 'git version 2.30.1.windows.1'
> E:\Git\bin\git.exe fetch --tags --force --progress -- https://github.com/AryanMukerji/BRM_LAB_4.git # timeout=10
> E:\Git\bin\git.exe config remote.origin.url https://github.com/AryanMukerji/BRM_LAB_4.git # timeout=10
> E:\Git\bin\git.exe config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> E:\Git\bin\git.exe rev-parse --refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision 18ea6160fd7e37da3d5f37472ccfc54068124d (refs/remotes/origin/master)
> E:\Git\bin\git.exe config core.sparsecheckout # timeout=10
> E:\Git\bin\git.exe checkout -f 18ea6160fd7e37da3d5f37472ccfc54068124d # timeout=10
Commit message: "First Commit (BRM_LAB_4)"
First time build. Skipping changelog.
Parsing POMs
Discovered a new module DevOps.BRM.Lab4:BRM.Lab4
Modules changed, recalculating dependency graph
Established TCP socket on 65359
[BRM_LAB_4] $ "C:\Program Files\Java\jdk-11.0.9\bin\java" -cp C:\Users\aryan\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven3-agent-1.13.jar;C:\apache-maven-3.5.3\boot\plexus-classworlds-2.5.2.jar;C:\apache-maven-3.5.3\conf\logging_jenkins.maven3.agent.Maven3SHain C:\apache-maven-3.5.3 C:\Users\aryan\.jenkins\war\WEB-INF\lib\remoting-4.5.jar C:\Users\aryan\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven3-interceptor-1.13.jar C:\Users\aryan\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven3-interceptor-commons-1.13.jar 65359
<==[JENKINS REMOTING CAPACITY]==>channel started
Executing Maven: -B -f C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\pom.xml clean compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----< DevOps.BRM.Lab4:BRM.Lab4 >-----
[INFO] Building BRM.Lab4 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ BRM.Lab4 ---
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ BRM.Lab4 ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ BRM.Lab4 ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 1 source file to C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\target\classes
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 1.871 s
[INFO] Finished at: 2021-02-15T02:17:50+05:30
[INFO]
[INFO] -----
Waiting for Jenkins to finish collecting data
[JENKINS] Archiving C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\pom.xml to DevOps.BRM.Lab4\BRM.Lab4\0.0.1-SNAPSHOT\BRM.Lab4\0.0.1-SNAPSHOT.pom
channel stopped
Finished: SUCCESS
```

**Step 7:** We can now automate this process by changing some configurations in the job. Click on “Configure”, a page will open with the previous configurations, now under “Build Triggers”, select “Poll SCM” and in “Schedule” box type (\* \* \* \*), then click on “Apply” & click on “Save”.

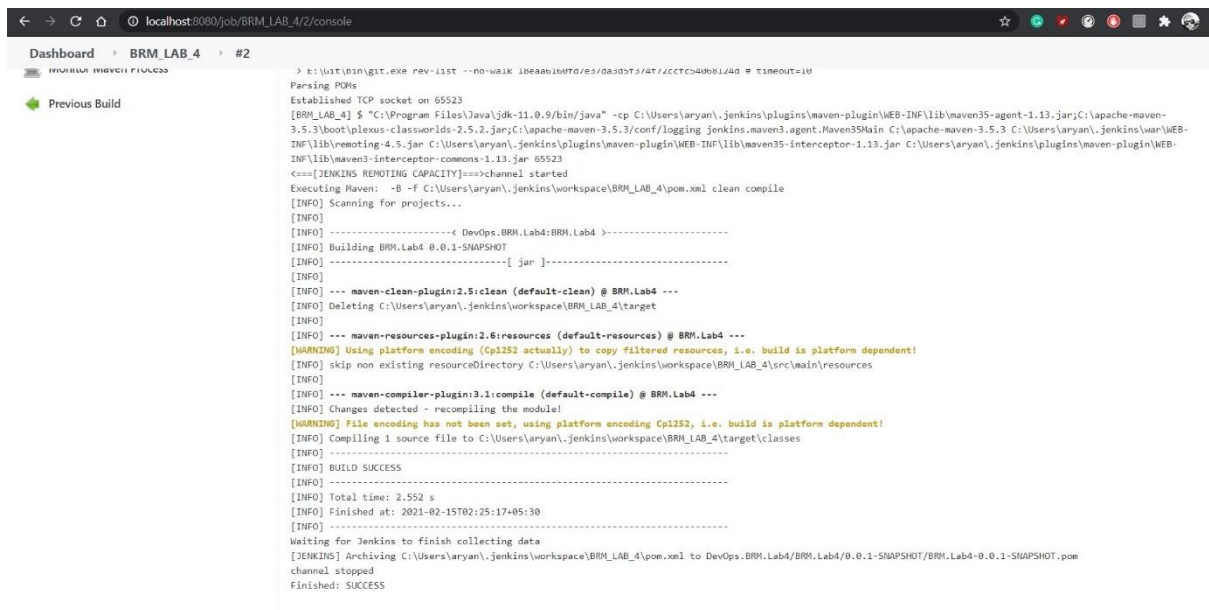




**Step 8:** Now whenever there are some changes the remote repository, jenkins will automatically start the build job to create maven builds.







```
> t:\utils\git.exe rev-list --no-walk 1beaabb1b7d7e3/0a3d573/47/cctc340b81/440 # timeout=10
Parsing POMs
Established TCP socket on 65523
[BRM_LAB_4] $ "C:\Program Files\Java\jdk-11.0.9\bin\java" -cp C:\Users\aryan\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven35-agent-1.13.jar;C:\apache-maven-3.5.3\boot\plexus-classworlds-2.5.2.jar;C:\apache-maven-3.5.3\conf\logging-jenkins.maven3.agent.Maven35Main C:\apache-maven-3.5.3 C:\Users\aryan\.jenkins\war\WEB-INF\lib\remoting-4.5.jar C:\Users\aryan\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven35-interceptor-1.13.jar C:\Users\aryan\.jenkins\plugins\maven-plugin\WEB-INF\lib\maven3-interceptor-commons-1.13.jar 65523
<==[JENKINS REMOTING CAPACITY]==>channel started
Executing Maven: -B -f C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\pom.xml clean compile
[INFO] Scanning for projects...
[INFO]
[INFO] -----< DevOps.BRM.Lab4:BRM.Lab4 >-----
[INFO] Building BRM.Lab4 0.0.1-SNAPSHOT
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- maven-clean-plugin:2.5:clean (default-clean) @ BRM.Lab4 ---
[INFO] Deleting C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\target
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ BRM.Lab4 ---
[WARNING] Using platform encoding (Cp1252 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\src\main\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ BRM.Lab4 ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding Cp1252, i.e. build is platform dependent!
[INFO] Compiling 1 source file to C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\target\classes
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 2.552 s
[INFO] Finished at: 2021-02-15T02:25:17+05:30
[INFO]
[INFO] Waiting for Jenkins to finish collecting data
[JENKINS] Archiving C:\Users\aryan\.jenkins\workspace\BRM_LAB_4\pom.xml to DevOps.BRM.Lab4/BRM.Lab4/0.0.1-SNAPSHOT/BRM.Lab4-0.0.1-SNAPSHOT.pom
channel stopped
Finished: SUCCESS
```

**Result:** Hence we successfully created a maven project, initialized it with git, pushed the project into the remote repository and then used jenkins to automate the process of creating a maven build.