Experiment 08

Roll No.	70
Name	MAYURI SHRIDATTA YERANDE
Class	D15-B
Subject	DevOps Lab
LO Mapped	LO1: To understand the fundamentals of DevOps engineering and be fully proficient with DevOps terminologies, concepts, benefits, and deployment options to meet your business requirements LO2: To obtain complete knowledge of the "version control system" to effectively track changes augmented with Git and GitHub

<u>Aim</u>: To Setup and Run Selenium Tests in Jenkins Using Maven.

<u>Theory</u>:

Selenium is an open-source automation tool that has been widely used for testing web applications. It is easy to use, and it provides support forums, which makes it popular among the testing community. Selenium has four main components: Selenium IDE, Selenium RC, Selenium WebDriver, and Selenium Grid, designed and used for different purposes. Selenium provides cross-browser testing and parallel testing features, which allows the testers to execute their test cases in different operating systems and browsers, which ensures browser compatibility of the web application.

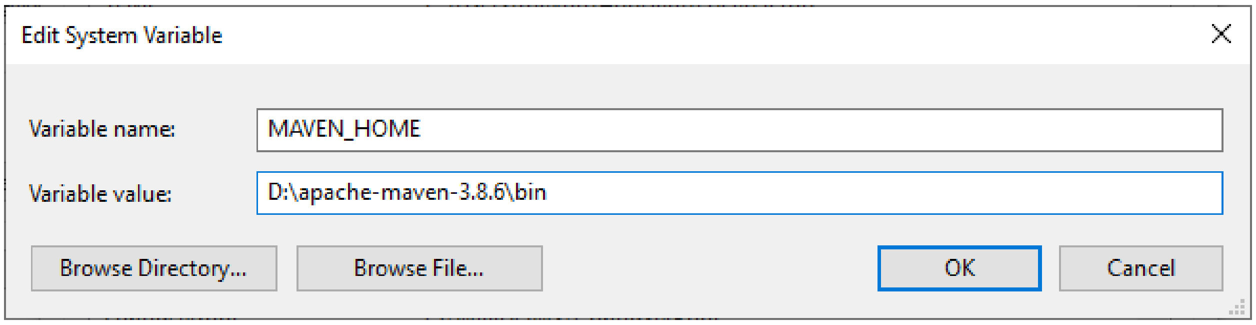
Maven is a build lifecycle management tool that helps in dependency management and creating automated builds. Maven is a powerful project management tool that is based on POM (project object model). It is used for projects build, dependency and documentation. It simplifies the build process.

<u>Implementation</u>:

<u>Installation of Maven:-</u>

Step 1: Download Link: https://maven.apache.org/download.cgi

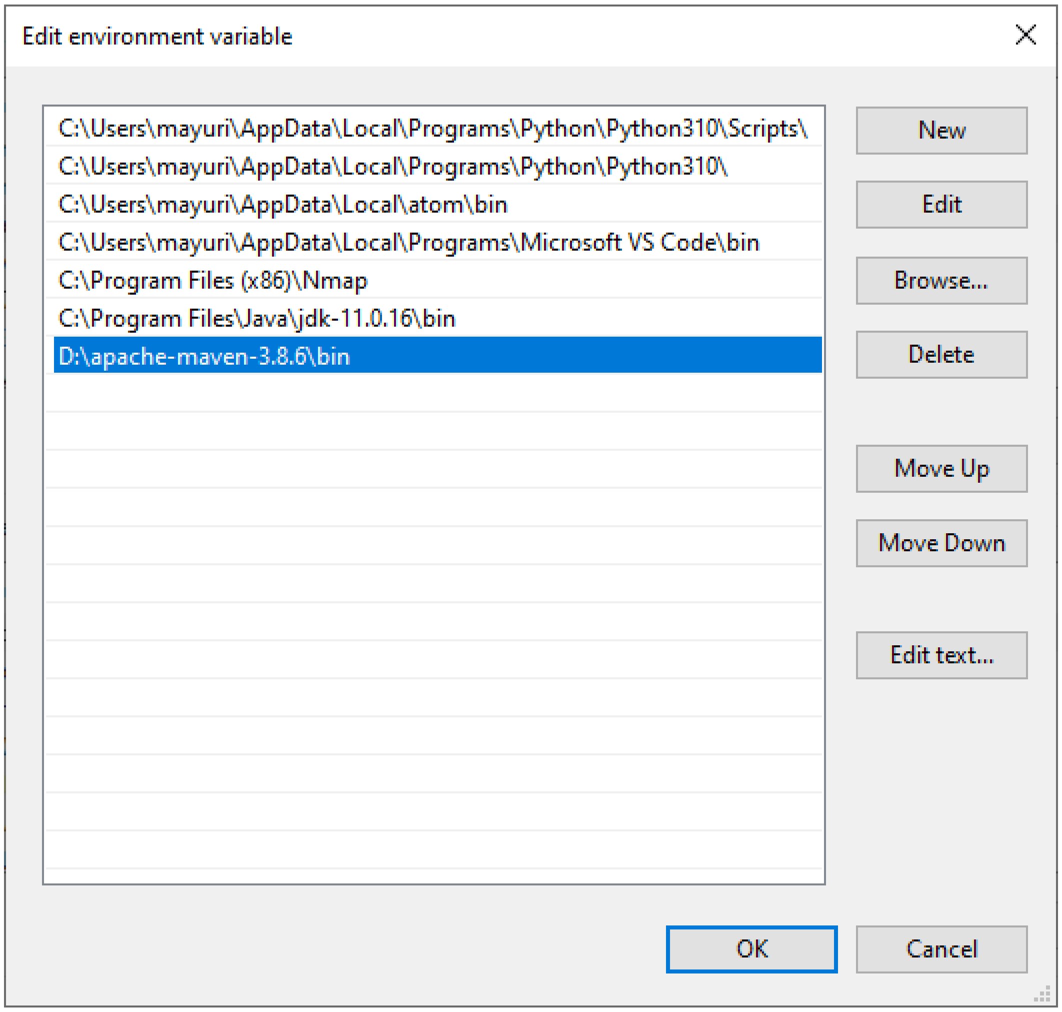
Step 2: Add MAVEN_HOME system variable.
ADD THE BIN PATH


Edit System Variable

Variable name: MAVEN_HOME

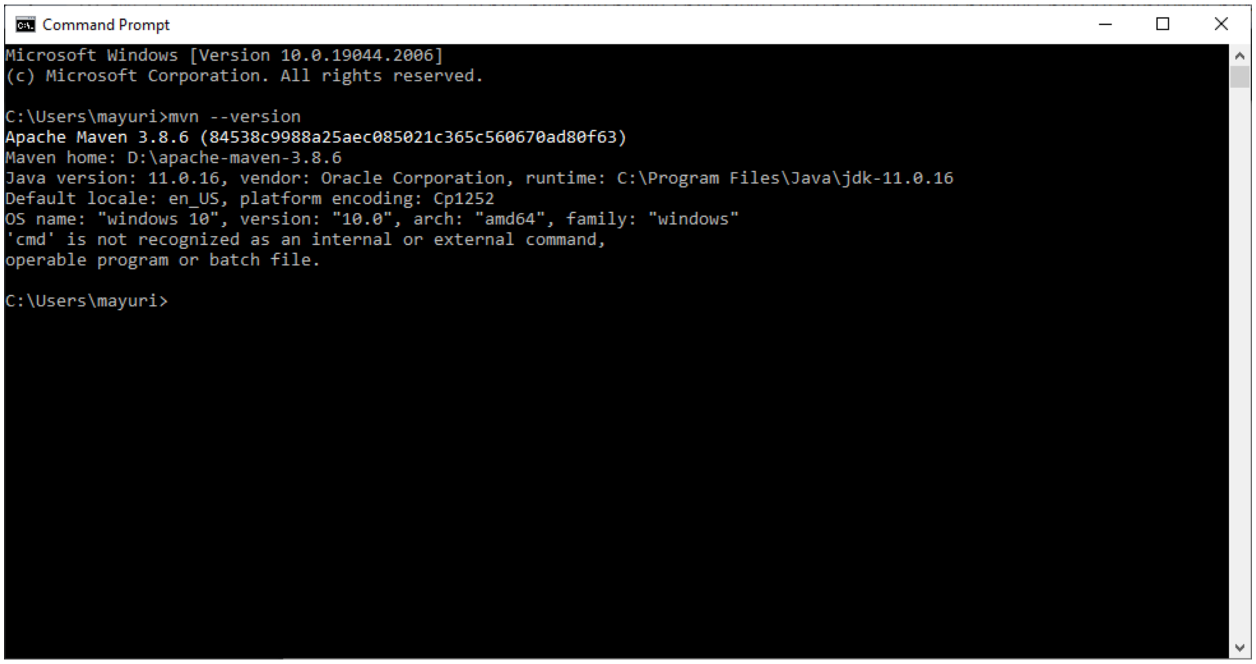
Variable value: D:\apache-maven-3.8.6\bin

Step 3: Set maven path in "path"



```
C:\Users\mayuri\AppData\Local\Programs\Python\Python310\Scripts\
C:\Users\mayuri\AppData\Local\Programs\Python\Python310\
C:\Users\mayuri\AppData\Local\atom\bin
C:\Users\mayuri\AppData\Local\Programs\Microsoft VS Code\bin
C:\Program Files (x86)\Nmap
C:\Program Files\Java\jdk-11.0.16\bin
D:\apache-maven-3.8.6\bin
```

Step 4: Run command “mvn –version” to check installation.



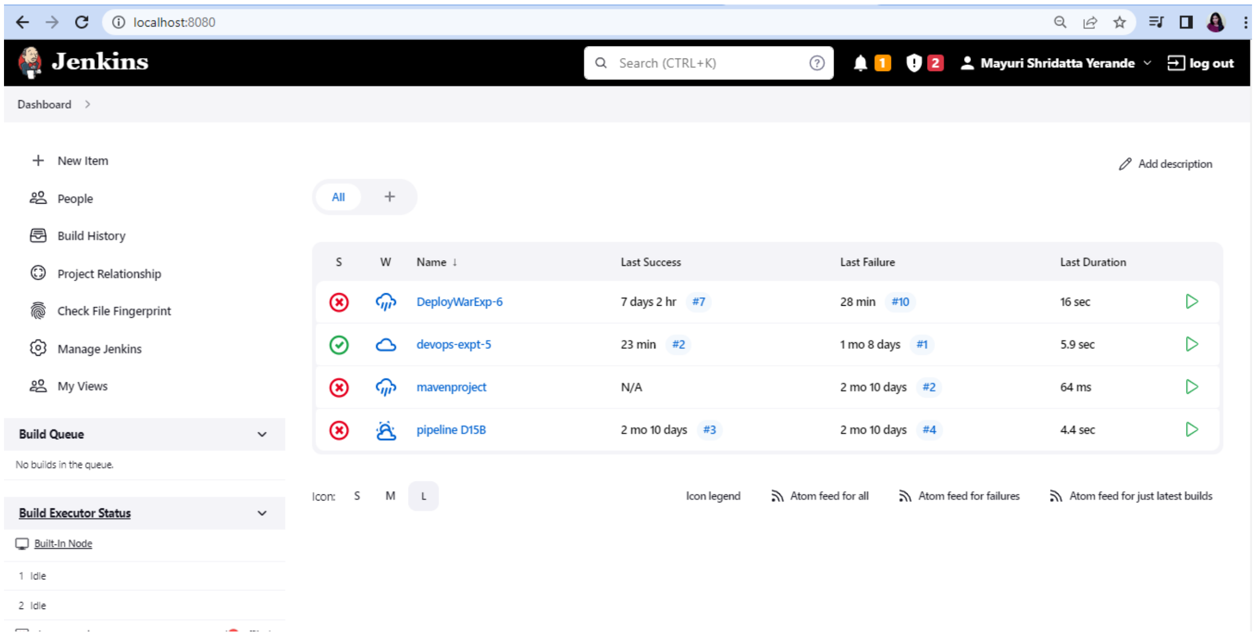
```
Microsoft Windows [Version 10.0.19044.2006]
(c) Microsoft Corporation. All rights reserved.

C:\Users\mayuri>mvn --version
Apache Maven 3.8.6 (84538c9988a25aec085021c365c560670ad80f63)
Maven home: D:\apache-maven-3.8.6
Java version: 11.0.16, vendor: Oracle Corporation, runtime: C:\Program Files\Java\jdk-11.0.16
Default locale: en_US, platform encoding: Cp1252
OS name: "windows 10", version: "10.0", arch: "amd64", family: "windows"
'cmd' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\mayuri>
```

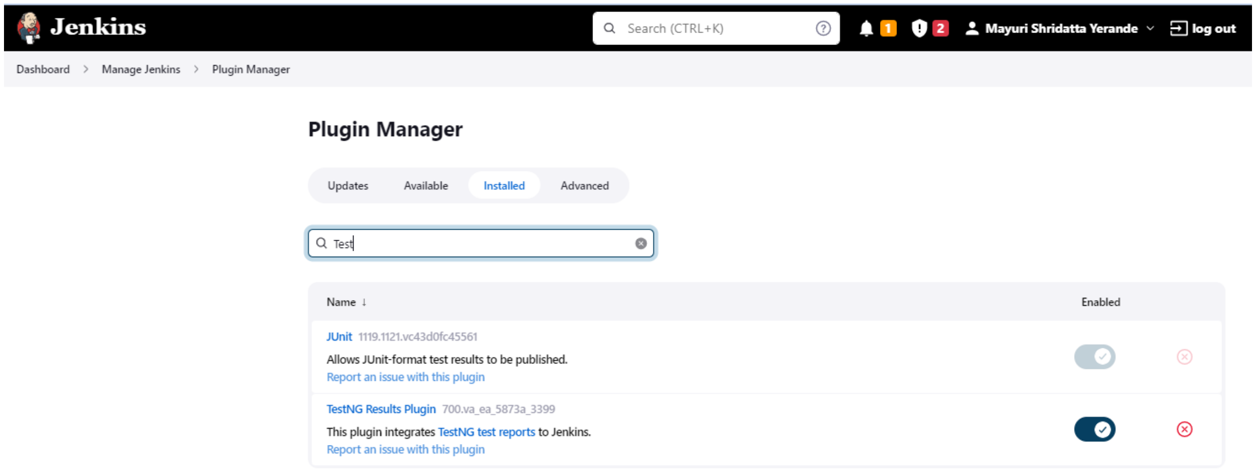
Integrate Selenium Tests In Maven With Jenkins

Step 1: Start the Jenkins Dashboard



S	W	Name ↓	Last Success	Last Failure	Last Duration
✗		DeployWarExp-6	7 days 2 hr #7	28 min #10	16 sec
✓		devops-expt-5	23 min #2	1 mo 8 days #1	5.9 sec
✗		mavenproject	N/A	2 mo 10 days #2	64 ms
✗		pipeline D15B	2 mo 10 days #3	2 mo 10 days #4	4.4 sec

Step 2: Install “TestING Results plugin”

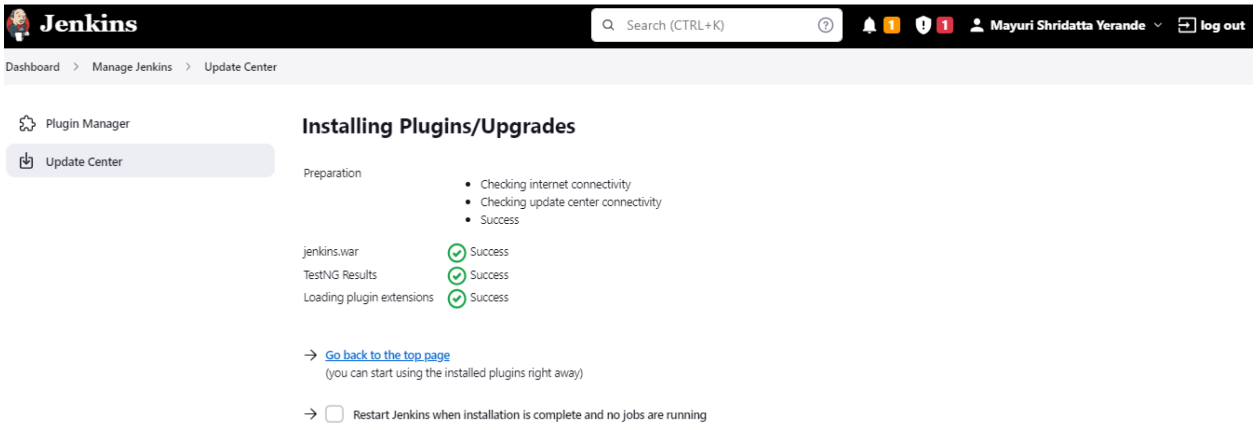

Dashboard > Manage Jenkins > Plugin Manager

Plugin Manager

Updates | Available | Installed | Advanced

Test

Name ↓	Enabled
JUnit 1119.1121.vc43d0fc45561 Allows JUnit-format test results to be published. Report an issue with this plugin	✓
TestNG Results Plugin 700.va_ea_5873a_3399 This plugin integrates TestNG test reports to Jenkins. Report an issue with this plugin	✓


Dashboard > Manage Jenkins > Update Center

Installing Plugins/Upgrades

Preparation
- Checking internet connectivity
- Checking update center connectivity
- Success

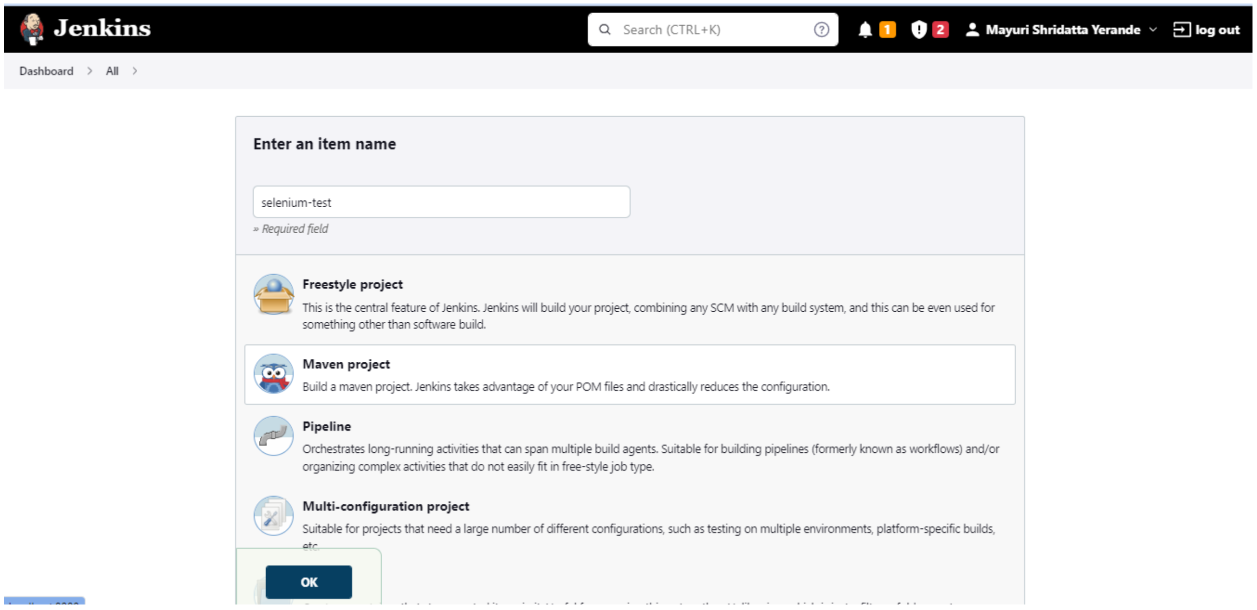
jenkins.war ✓ Success
TestNG Results ✓ Success
Loading plugin extensions ✓ Success

→ Go back to the top page
(you can start using the installed plugins right away)

→ Restart Jenkins when installation is complete and no jobs are running

Step 3: Click New Item in the dashboard.

- Enter the project name and select the project type as Maven project.



Enter an item name

selenium-test

» Required field

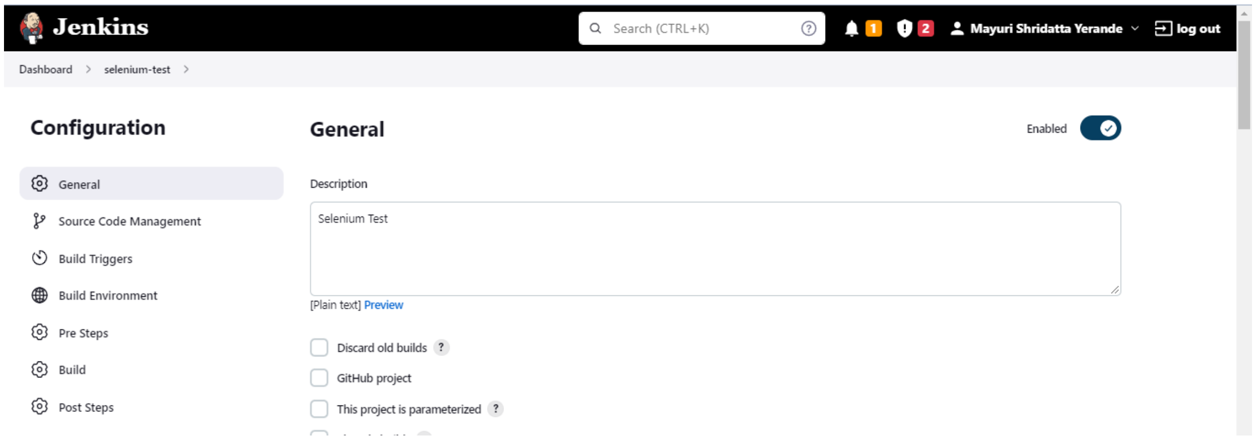
Freestyle project
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

Maven project
Build a maven project. Jenkins takes advantage of your POM files and drastically reduces the configuration.

Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

Multi-configuration project
Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

Step 4: Click Ok. Now you could see a job being created successfully in the dashboard.
Step 5: Click the project and click Configure.



General

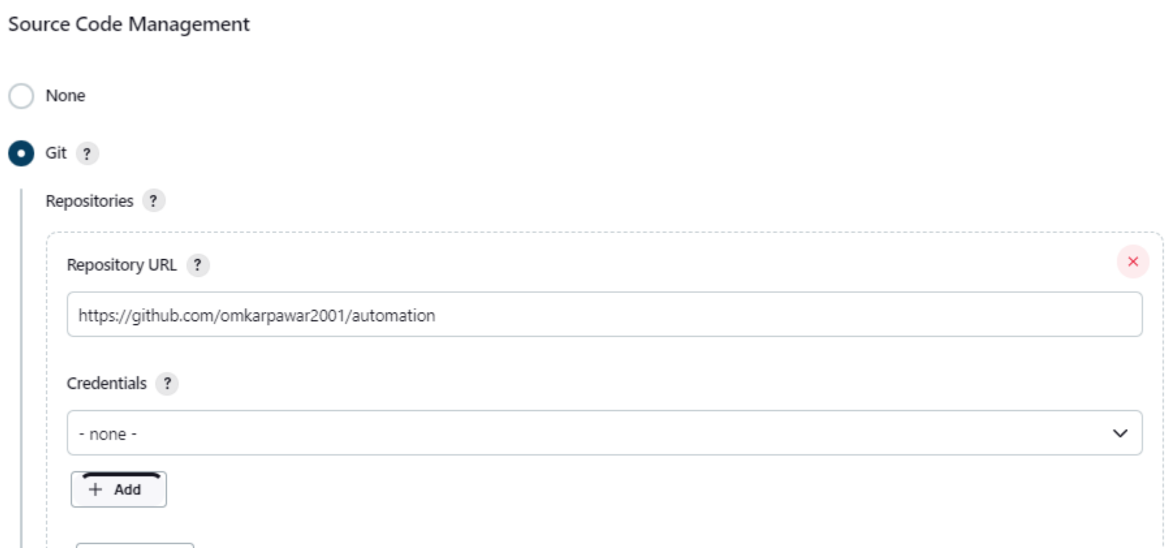
Description

Selenium Test

[Plain text] Preview

- [ ] Discard old builds
- [ ] GitHub project
- [ ] This project is parameterized

Enter the following github link:- https://github.com/omkarpawar2001/automation


Source Code Management

None

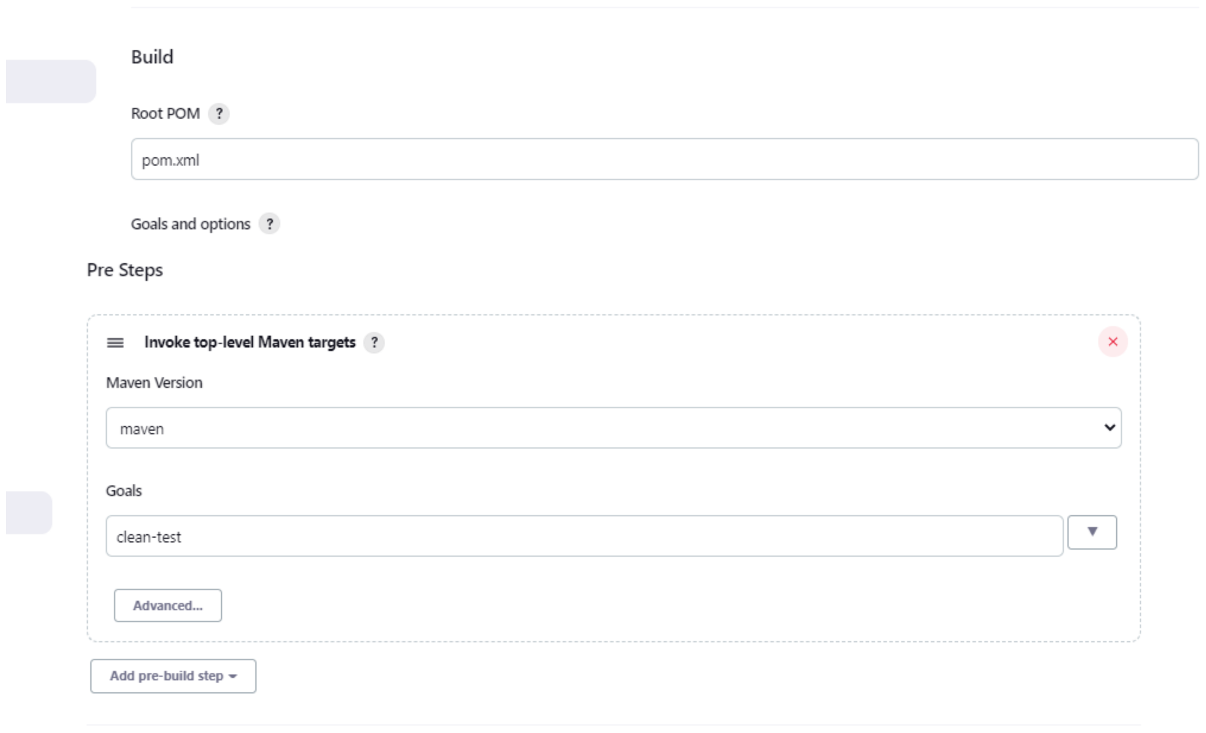
[✓ Git]

Repositories

Repository URL: https://github.com/omkarpawar2001/automation

Credentials: - none -

Step 6: Under the Build section, add a step, the complete path of your pom.xml . In the Goals and options, enter the command clean test.


Build

Root POM: pom.xml

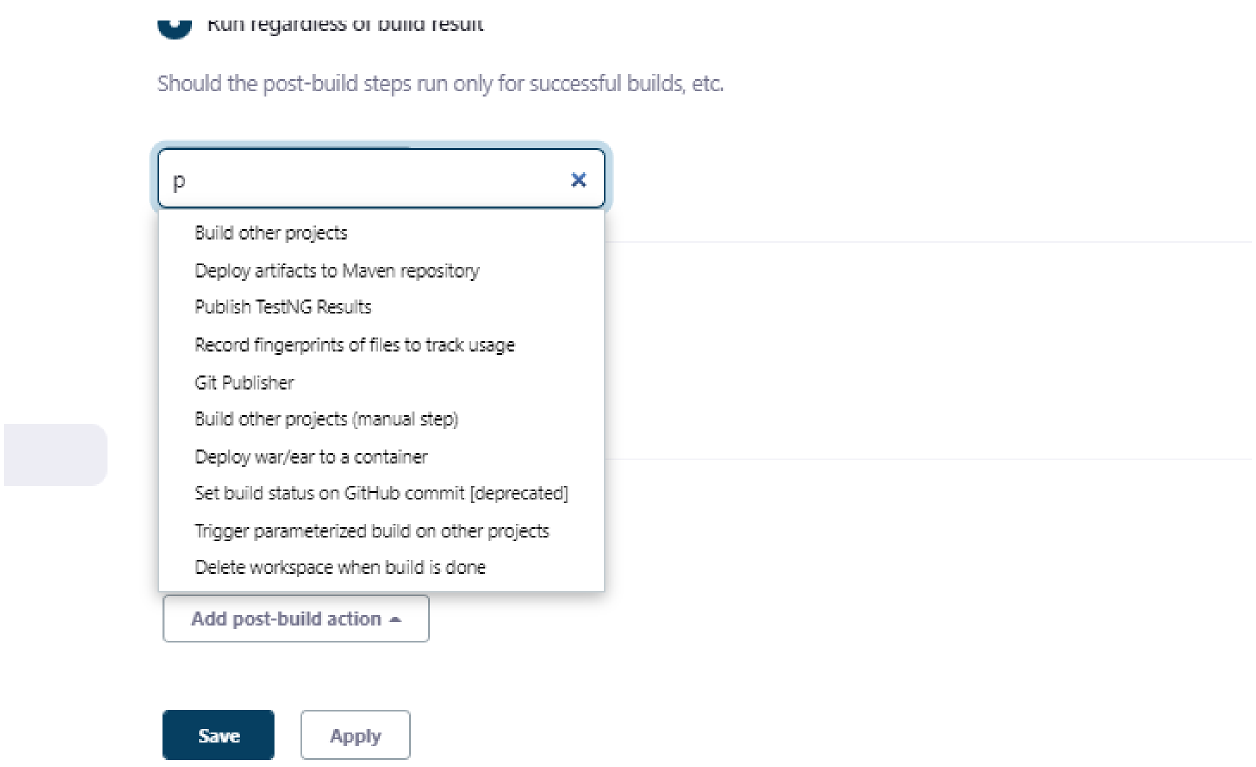
Goals and options

Pre Steps

Invoke top-level Maven targets

Maven Version: maven

Goals: clean-test

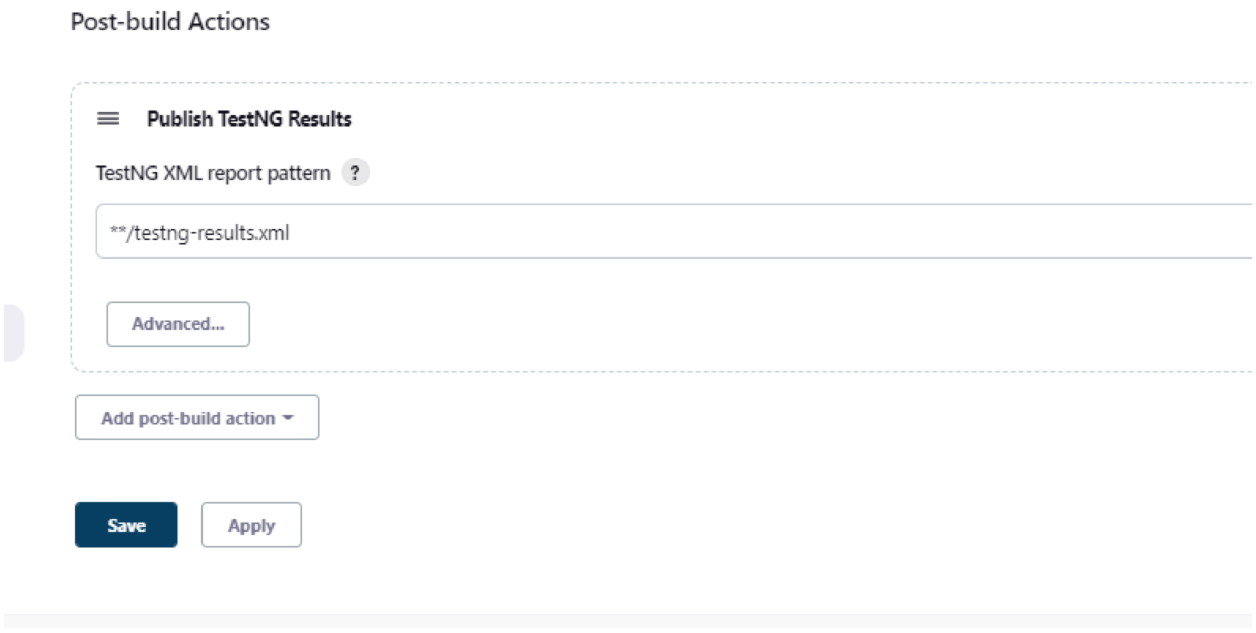

Run regardless of build result

Should the post-build steps run only for successful builds, etc.

p

- Build other projects
- Deploy artifacts to Maven repository
- Publish TestNG Results
- Record fingerprints of files to track usage
- Git Publisher
- Build other projects (manual step)
- Deploy war/ear to a container
- Set build status on GitHub commit [deprecated]
- Trigger parameterized build on other projects
- Delete workspace when build is done

Step 7: Click Apply and then Save.

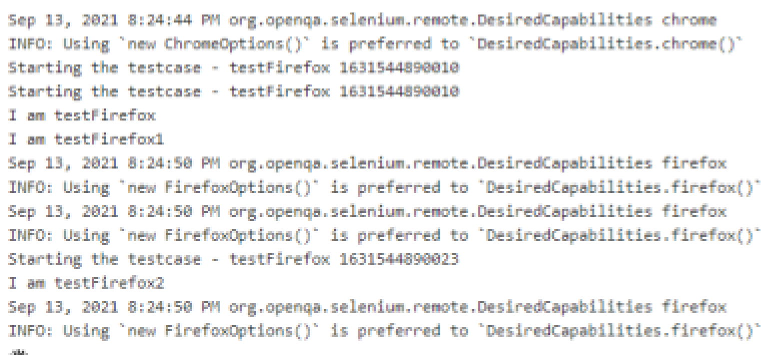

Post-build Actions

Publish TestNG Results

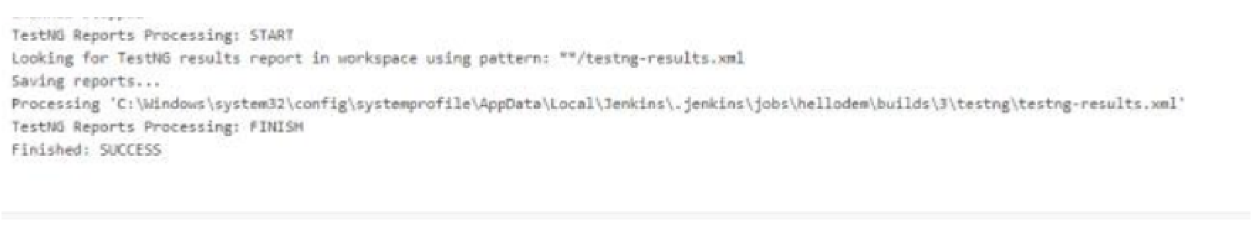
TestNG XML report pattern: **/testng-results.xml

Step 8: Click Build Now.

Step 9: Now the build will run and, after successful completion of the build, the results would be displayed. To view the complete logs, click the console output.

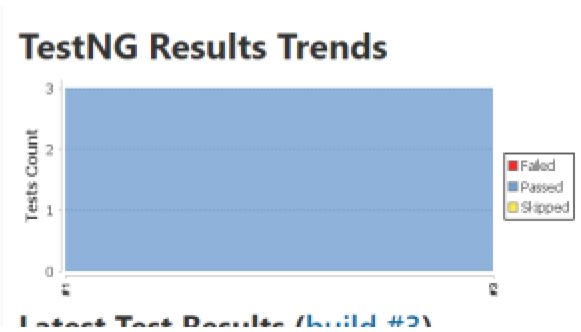


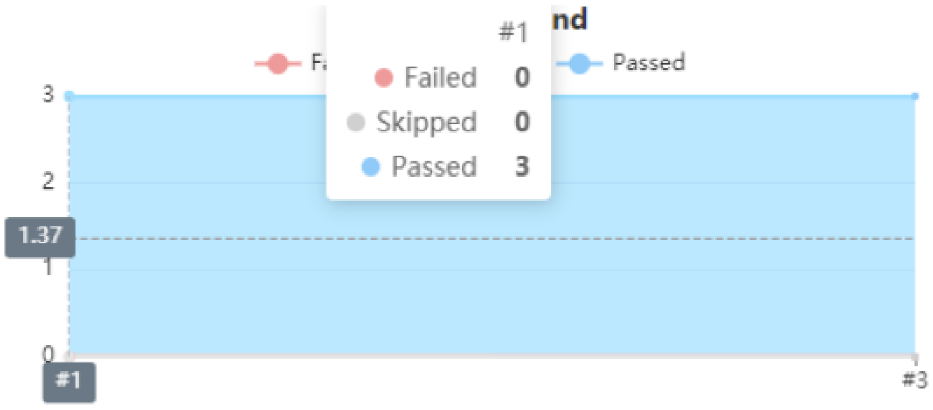
```
Sep 13, 2021 8:24:44 PM org.openqa.selenium.remote.DesiredCapabilities chrome
INFO: Using `new ChromeOptions()` is preferred to `DesiredCapabilities.chrome()`
Starting the testcase - testFirefox 1631544890010
Starting the testcase - testFirefox 1631544890010
I am testFirefox
I am testFirefox1
Sep 13, 2021 8:24:50 PM org.openqa.selenium.remote.DesiredCapabilities firefox
INFO: Using `new FirefoxOptions()` is preferred to `DesiredCapabilities.firefox()`
Sep 13, 2021 8:24:50 PM org.openqa.selenium.remote.DesiredCapabilities firefox
INFO: Using `new FirefoxOptions()` is preferred to `DesiredCapabilities.firefox()`
Starting the testcase - testFirefox 1631544890023
I am testFirefox2
Sep 13, 2021 8:24:50 PM org.openqa.selenium.remote.DesiredCapabilities firefox
INFO: Using `new FirefoxOptions()` is preferred to `DesiredCapabilities.firefox()`
```

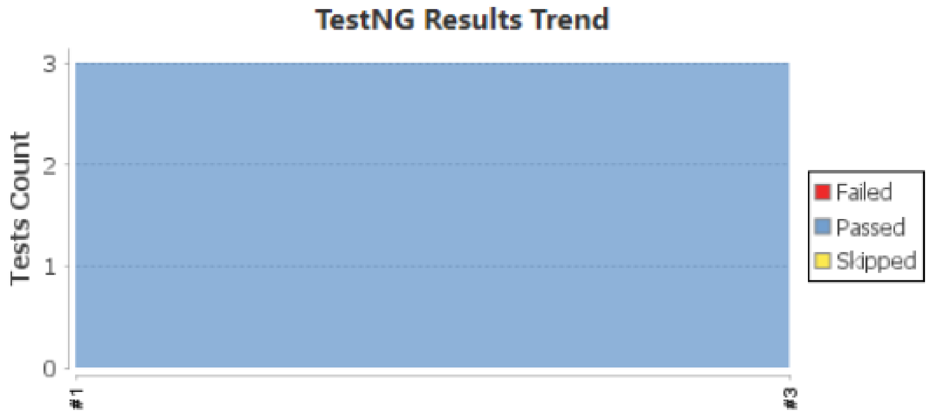


```
TestNG Reports Processing: START
Looking for TestNG results report in workspace using pattern: **/testng-results.xml
Saving reports...
Processing 'C:\Windows\system32\config\systemprofile\AppData\Local\Jenkins\.jenkins\jobs\hellodem\builds\3\testng\testng-results.xml'
TestNG Reports Processing: FINISH
Finished: SUCCESS
```

Step 10: Now go to TestNG results and check Results Trends







Conclusion: We successfully set up and performed selenium tests in jenkins using Maven.