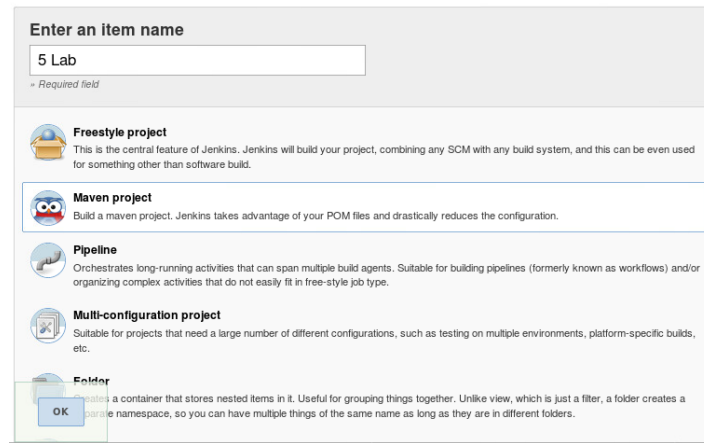# DEVOPS PROFESSIONAL CERTIFICATION

PROGRAM

Lab – 5 : Build Processing – Jenkins + Git/Gitlab+Maven

- ➢ Create Maven Project using plugins Example, Jar & war
- ➢ Construct simple JUnit code and understand assert statements & Reports
- ➢ Create Maven Project in Jenkins and configure SCM + Maven
- ➢ Use Test Results Analyzer plugin to track test reports
- ➢ Execute maven goals (tasks) and track build history

Explore

- ➢ Explore Build history
- ➢ Explore Test reports history
- ➢ Explore logs

1. **Generate maven project (jar/war)**
- **Create Jenkins Job – Maven Project**

Enter an item name

5 Lab

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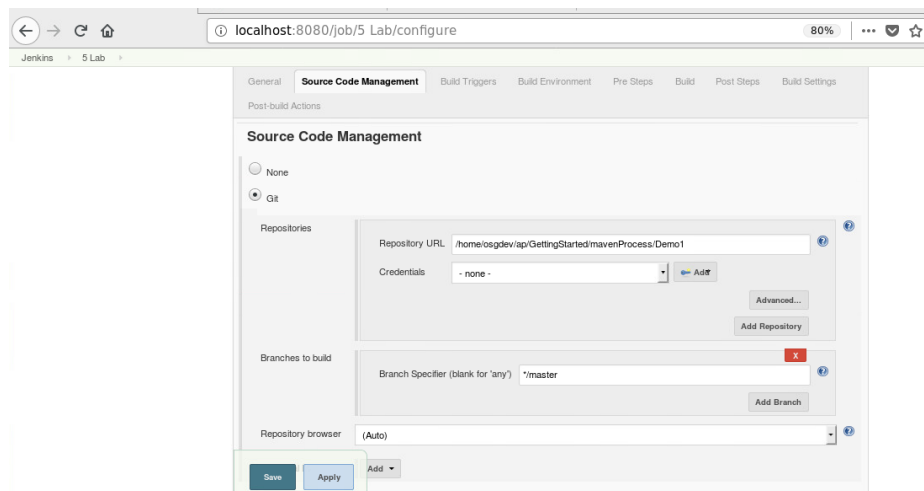
Pipeline
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

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

Folder
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

OK

- **Configure SCM – with git local repository path**

localhost:8080/job/5 Lab/configure   80%

Jenkins   5 Lab

General   **Source Code Management**   Build Triggers   Build Environment   Pre Steps   Build   Post Steps   Build Settings

Post-build Actions

Source Code Management

○ None
● Git

Repositories
Repository URL   /home/osgdev/ap/GettingStarted/mavenProcess/Demo1
Credentials   - none -   ← Add

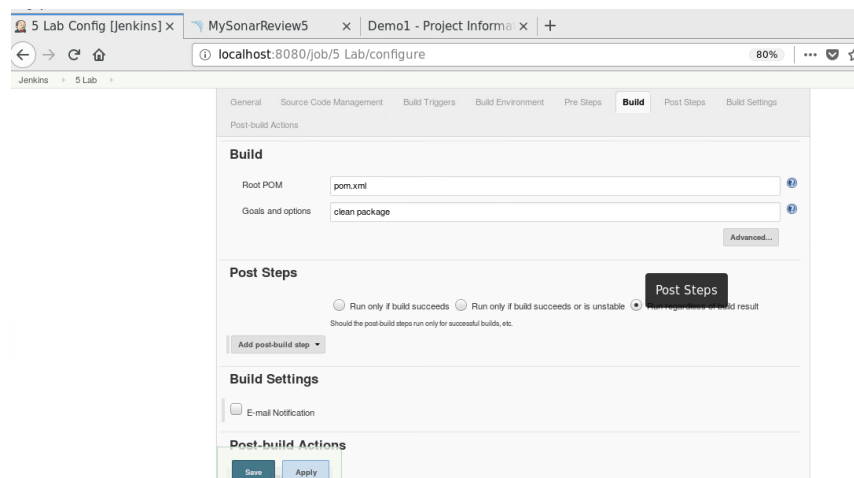Advanced...
Add Repository

Branches to build
Branch Specifier (blank for 'any')   */master
Add Branch

Repository browser   (Auto)

Save   Apply   Add ▾

- **Configure Build with maven valid goal(s) (Example: clean package)**

5 Lab Config [Jenkins] ×   MySonarReview5   ×   Demo1 - Project Informa ×   +

localhost:8080/job/5 Lab/configure   80%

Jenkins   5 Lab

General   Source Code Management   Build Triggers   Build Environment   Pre Steps   **Build**   Post Steps   Build Settings

Post-build Actions

Build

Root POM   pom.xml
Goals and options   clean package

Advanced...

Post Steps

○ Run only if build succeeds   ○ Run only if build succeeds or is unstable   ● Run regardless of build result

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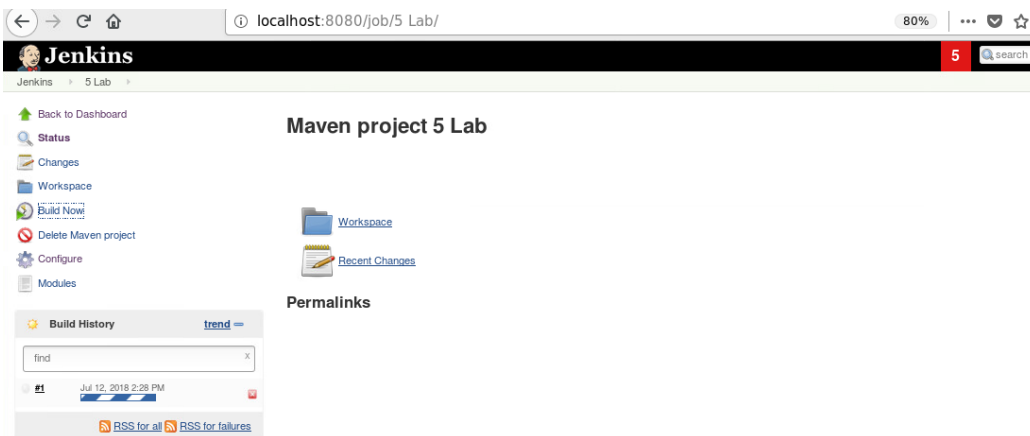
Add post-build step ▾

Post Steps

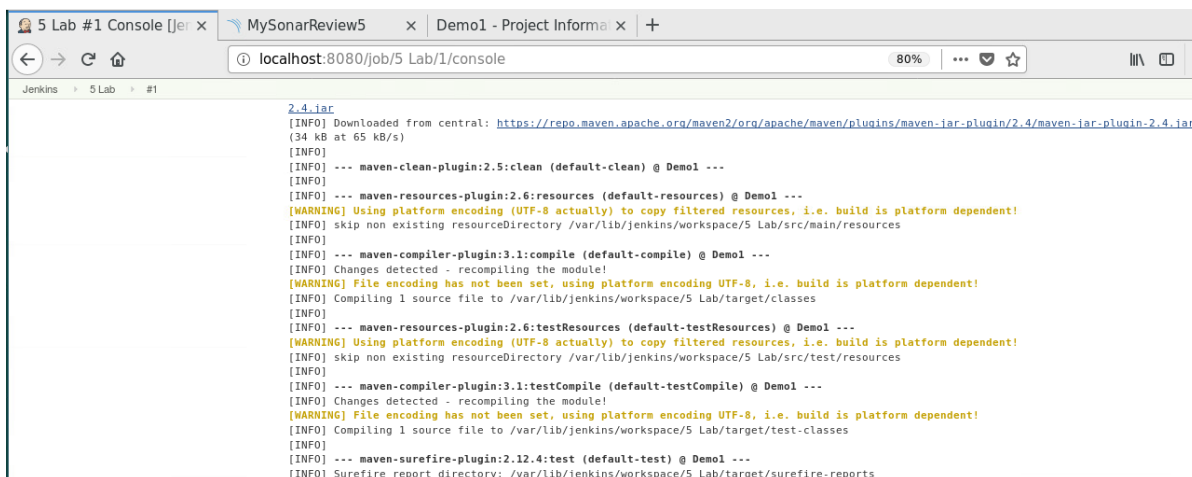**Build Settings**
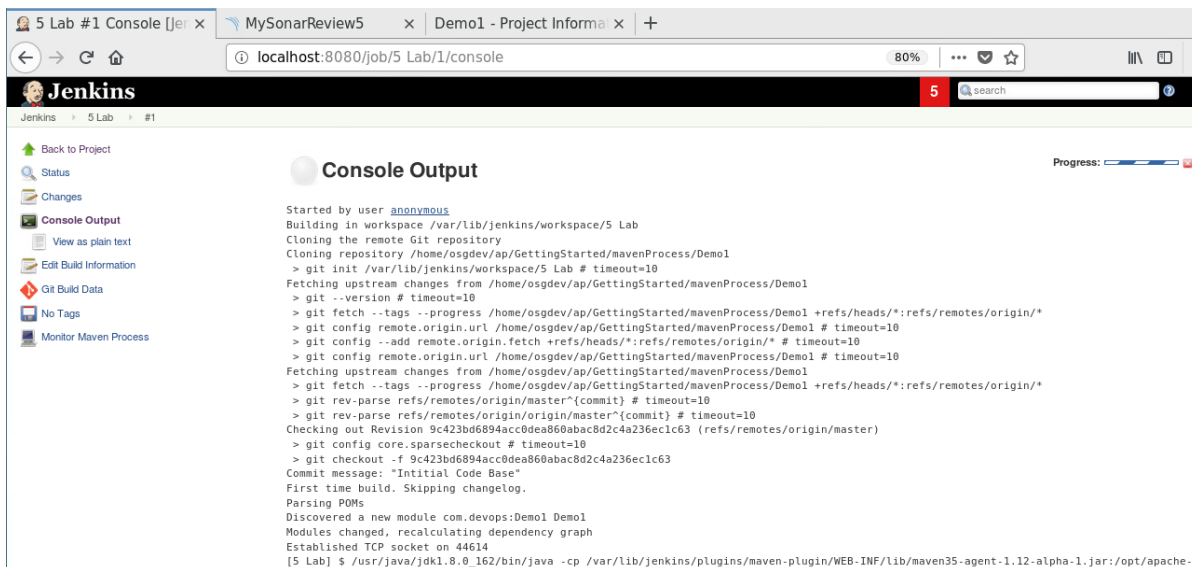
☐ E-mail Notification

Post-build Actions

Save   Apply

- **Save Configuration and Build by selecting "Build Now"**

- **Observe and understand build process on Jenkins Console**

```
-------------------------------------------------
 T E S T S
-------------------------------------------------
Running com.devops.AppTest
Tests run: 1, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.04 sec

Results :

Tests run: 1, Failures: 0, Errors: 0, Skipped: 0

[JENKINS] Recording test results
[INFO]
[INFO] --- maven-jar-plugin:2.4:jar (default-jar) @ Demo1 ---
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/commons-lang/commons-lang/2.1/commons-lang-2.1.pom
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/commons-lang/commons-lang/2.1/commons-lang-2.1.pom (9.9 kB at 33 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/commons-lang/commons-lang/2.1/commons-lang-2.1.jar
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/commons-lang/commons-lang/2.1/commons-lang-2.1.jar (208 kB at 338 kB/s)
[INFO] Building jar: /var/lib/jenkins/workspace/5 Lab/target/Demo1-1.0-SNAPSHOT.jar
[INFO] -----------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] -----------------------------------------------------------------------
[INFO] Total time: 27.801 s
[INFO] Finished at: 2018-07-12T14:29:36+05:30
[INFO] Final Memory: 24M/176M
[INFO] -----------------------------------------------------------------------
[JENKINS] Archiving /var/lib/jenkins/workspace/5 Lab/pom.xml to com.devops/Demo1/1.0-SNAPSHOT/Demo1-1.0-SNAPSHOT.pom
[JENKINS] Archiving /var/lib/jenkins/workspace/5 Lab/target/Demo1-1.0-SNAPSHOT.jar to com.devops/Demo1/1.0-SNAPSHOT/Demo1-1.0-SNAPSHOT.jar
channel stopped
Finished: SUCCESS
```
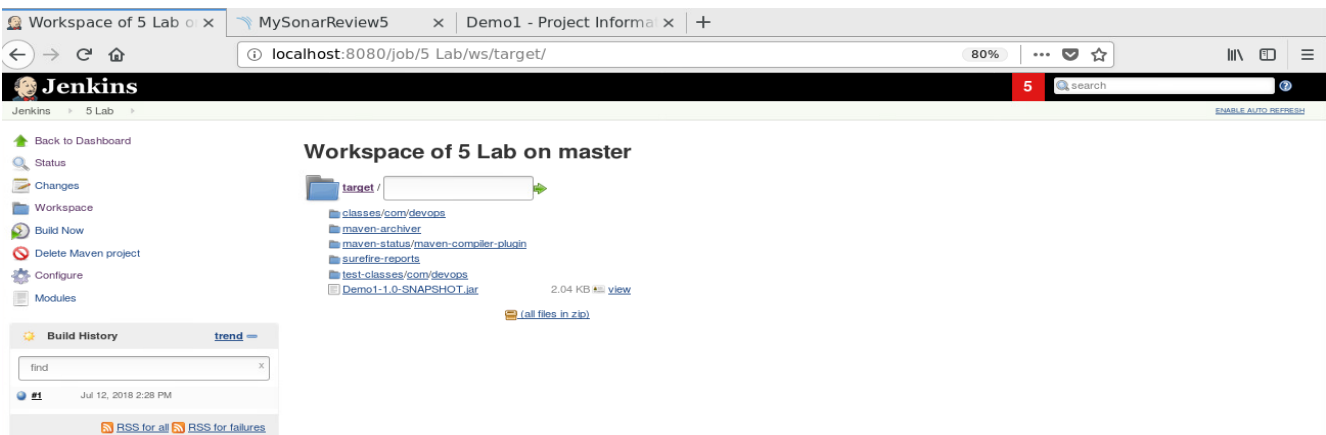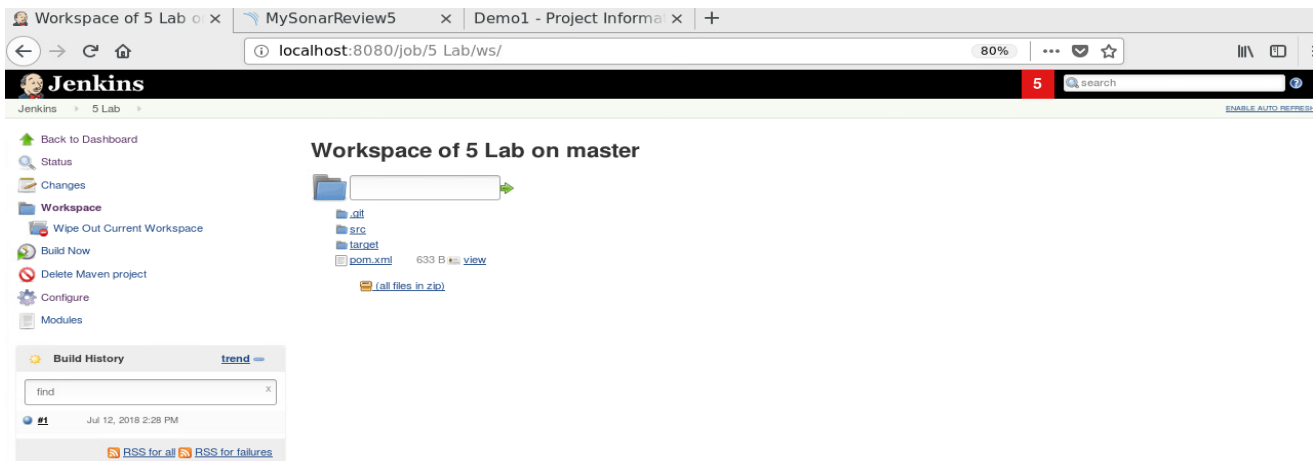
- **Browse workspace and view folder/files**

- **Walkthrough test reports using "Test Results Analyzer"**

- **Repeat build process by changing goal and observe the response with history.**

Note: Explore use of executing sequence of maven goals / build step for one or more branches, use of pre-step & post-step. Distinguish freestyle & Maven project.

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