

## Lab Exercise 20

### Creating a Pipeline Script

**Objective:** To create a pipeline script for automating build processes in Jenkins

**Tools required:** Jenkins

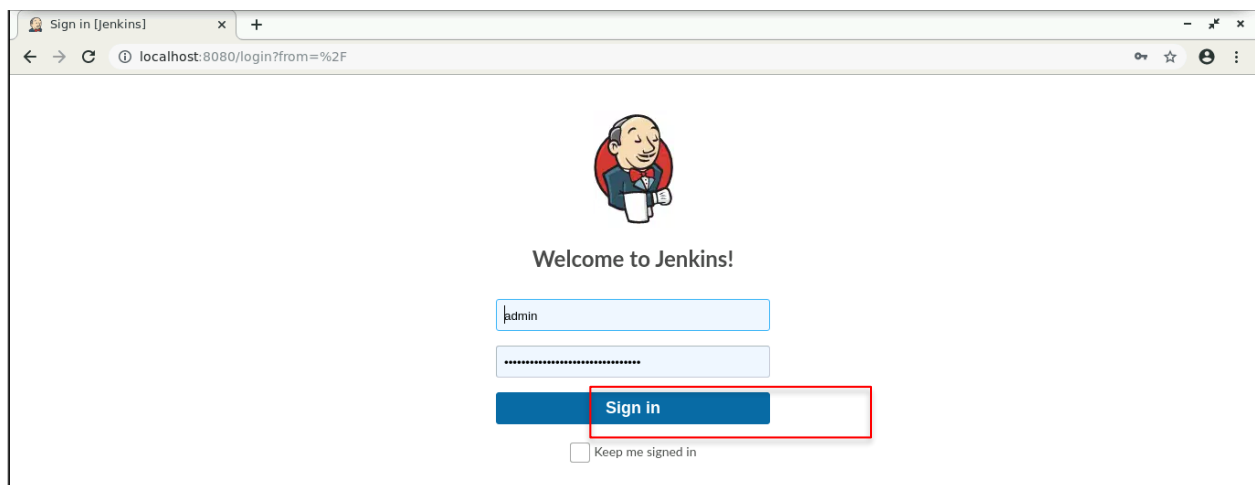
**Prerequisites:** None

Steps to be followed:

1. Log in to the Jenkins CI tool and create a pipeline script

#### Step 1: Log in to the Jenkins CI tool and create a pipeline script

1. Open the browser, go to the Jenkins **Dashboard** by typing **localhost:8080** in your browser, provide the credentials, and click the **Sign in** button



**Note:** The credentials for accessing Jenkins in the lab are Username: **admin** and Password: **admin**.

2. Click on the **New Item** option as shown in the screenshot below:

Jenkins

Dashboard

+ New Item

People

Build History

Manage Jenkins

My Views

Lockable Resources

All

+

S	W	Name ↓	Last Success	Last Failure
		demo_01	N/A	N/A
		jen	6 hr 17 min #1	N/A
		kim	N/A	N/A

## OUTPUT :-

Chrome

File Edit View History Bookmarks Profiles Tab Window Help

Tue 14 Oct 10:48 PM

Dashboard - Jenkins

localhost:8080

Jenkins

+ New Item

Build History

Build Queue

Build Executor Status 0/2

All

+

S	W	Name ↓	Last Success	Last Failure	Last Duration
		Free Style	1 mo 12 days #1	N/A	16 sec
		FreeStyle	1 mo 18 days #2	1 mo 18 days #1	4.7 sec
		poll_scm	26 min #2	N/A	3.8 sec

Icon: S M L

...

REST API

Jenkins 2.516.2

3. Enter a desired name for the project, select **Pipeline**, and then click on **OK** as shown in the screenshot below:

Dashboard > All > New Item

Enter an item name

new\_demo

» 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.

**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.

OK

## OUTPUT :-

Chrome File Edit View History Bookmarks Profiles Tab Window Help

New Item - Jenkins

localhost:8080/view/all/newJob

Jenkins / All / New Item

**New Item**

Enter an item name

new\_demo

Select an item type

**Freestyle project**  
Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

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

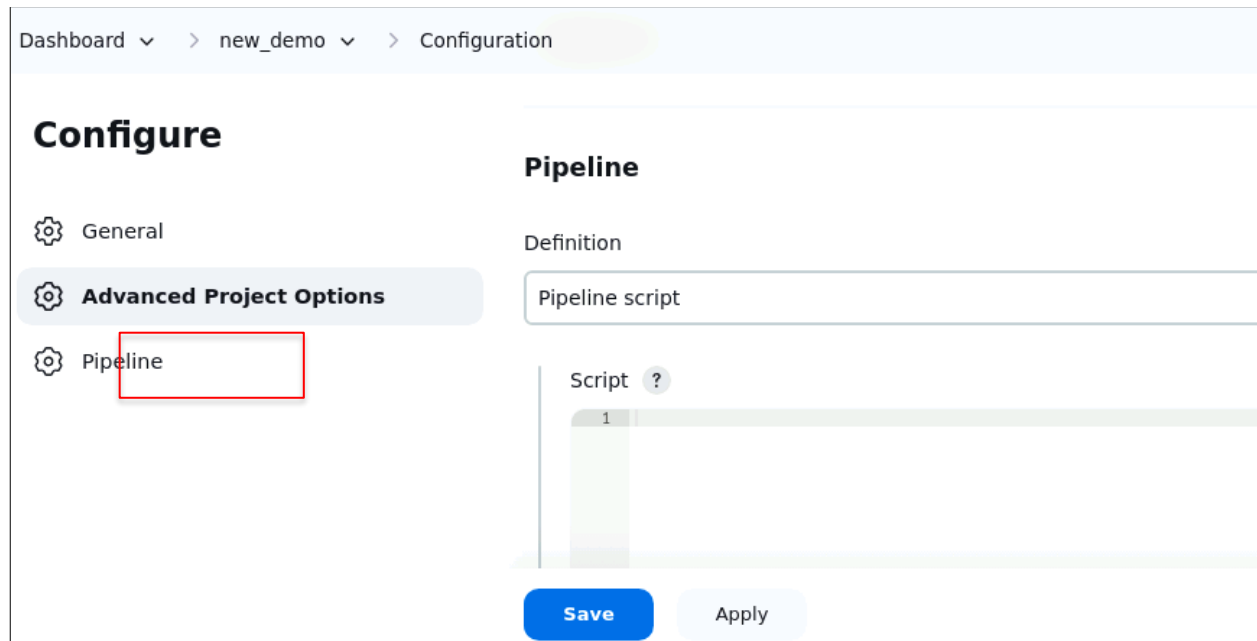
**Pipeline**  
Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

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

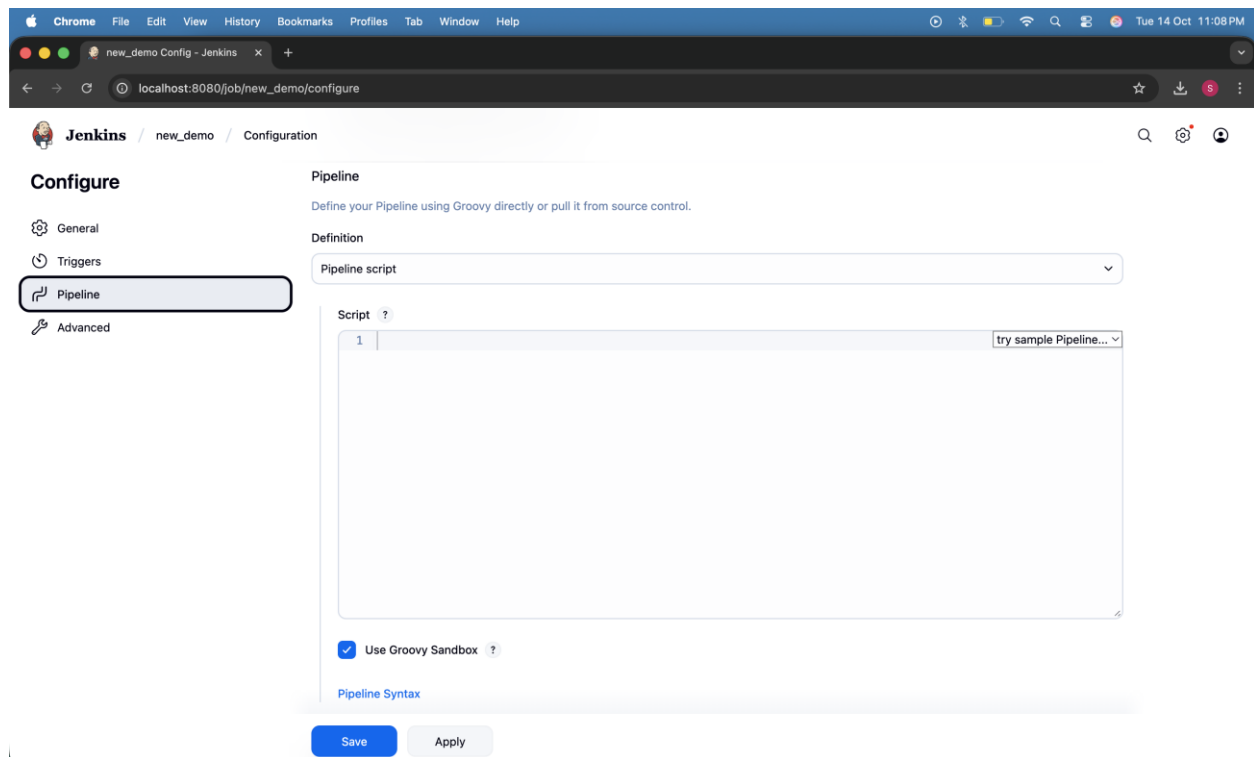
**Folder**  
Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.

OK

4. Click on **Pipeline** as shown in the screenshot below:

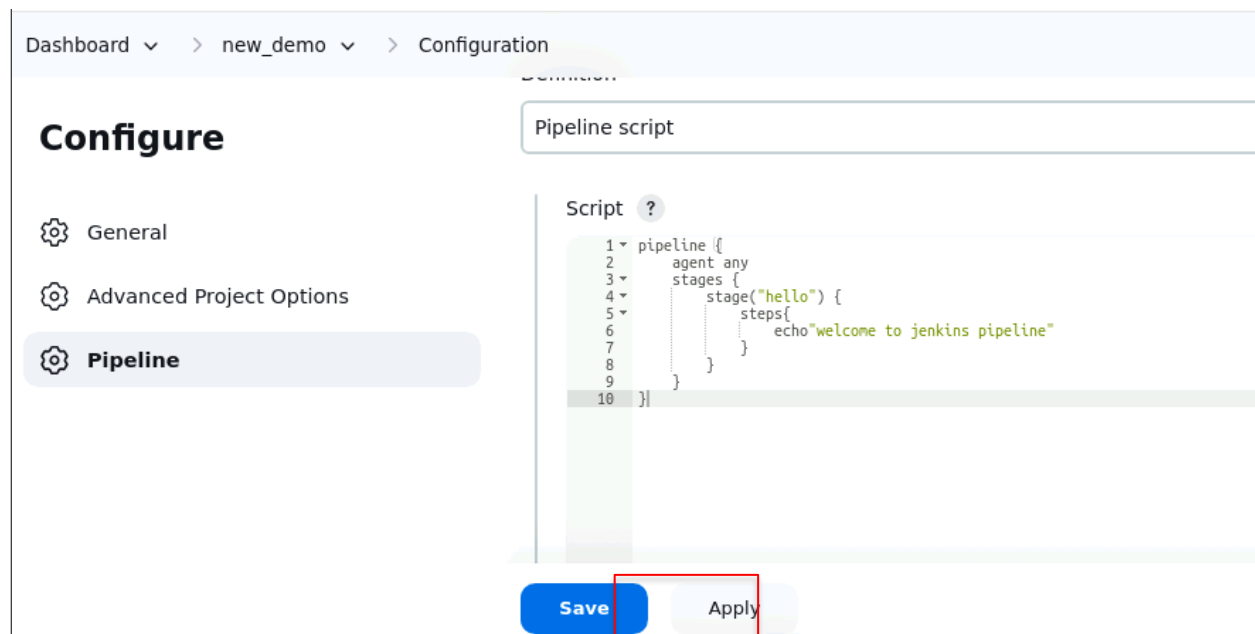


**OUTPUT :-**

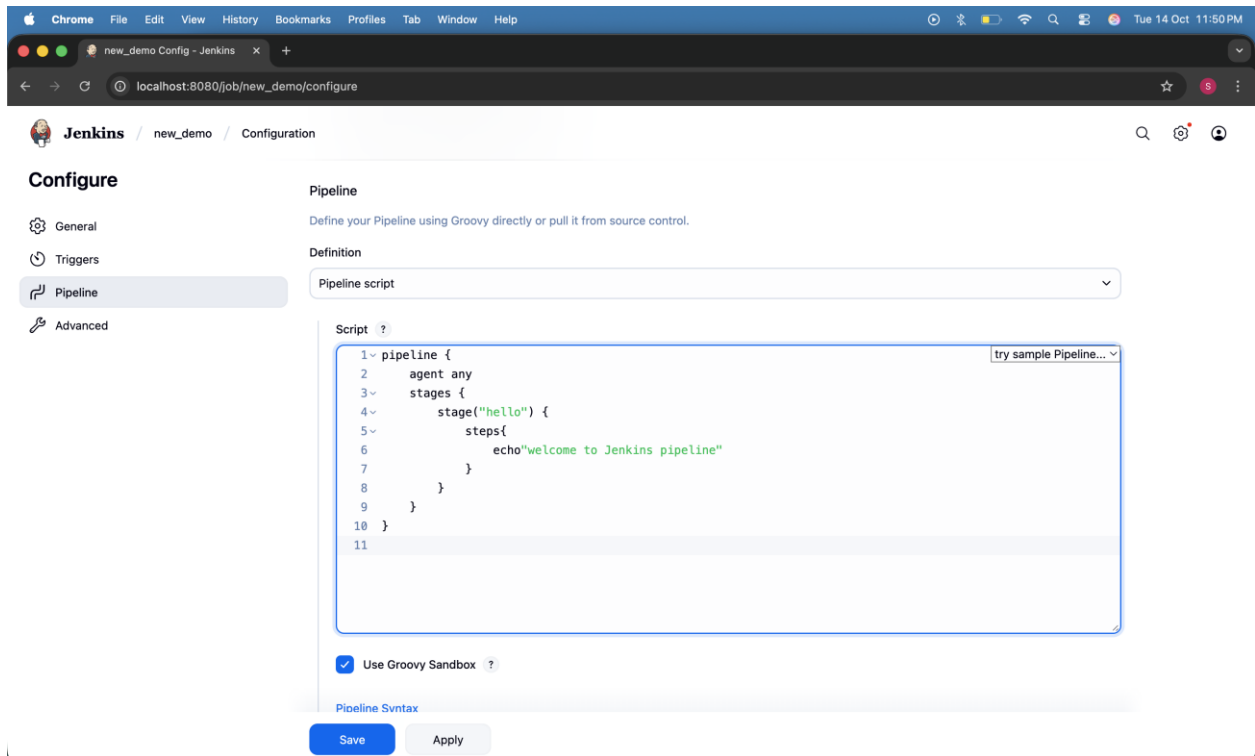


5. Enter the following pipeline script in the script editor and click on **Save** as shown in the screenshot below:

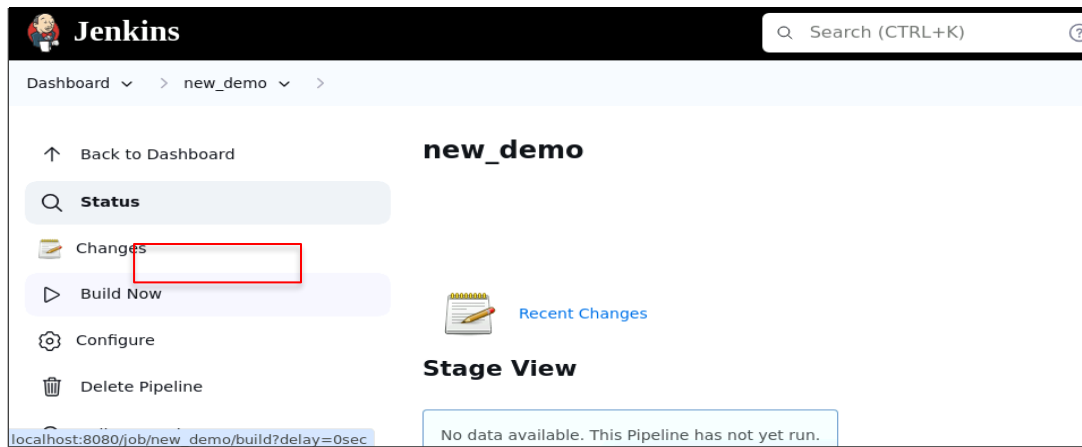
```
pipeline {
  agent any
  stages {
    stage("hello") {
      steps{
        echo"welcome to Jenkins pipeline"
      }
    }
  }
}
```



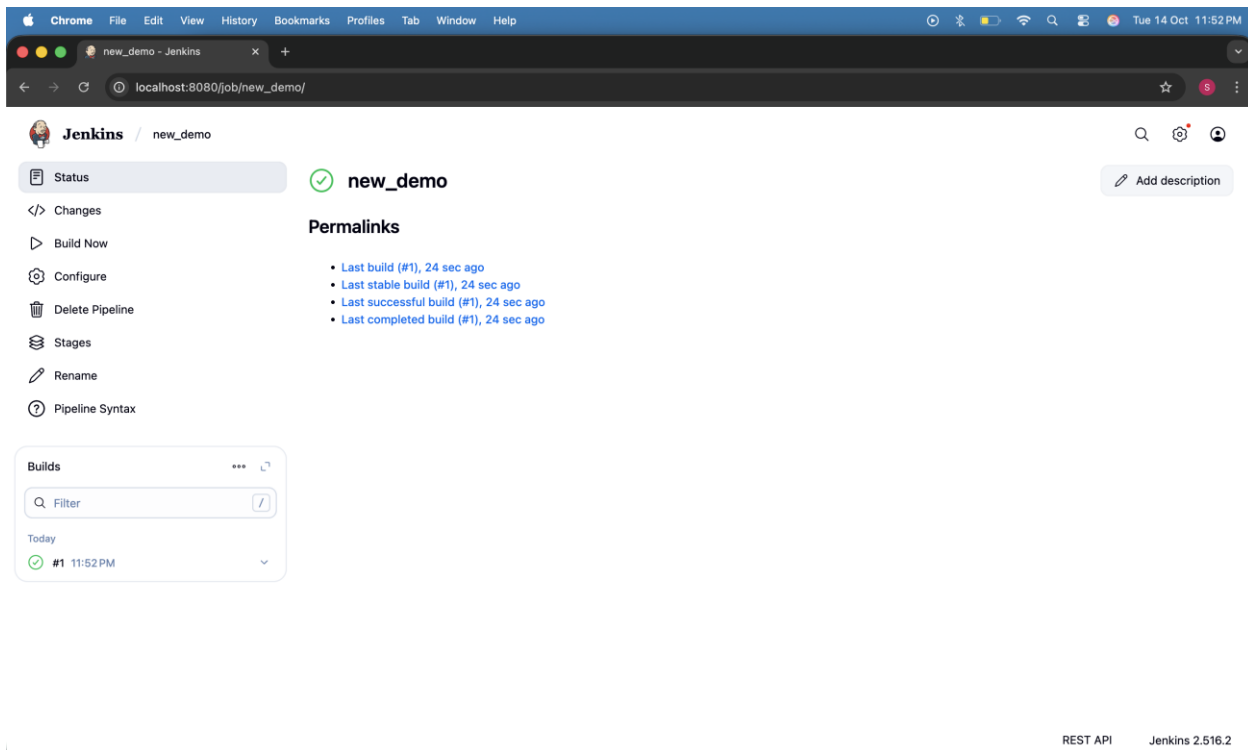
**OUTPUT :-**



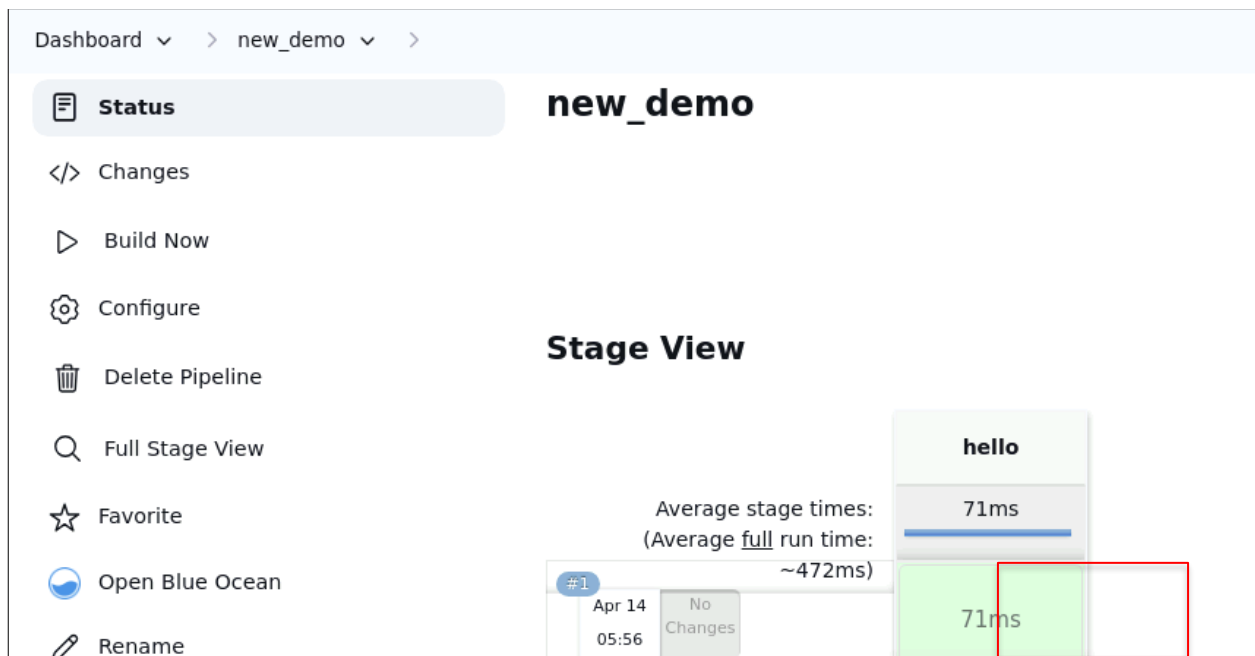
6. Click on **Build Now** to run the pipeline script as shown in the screenshot below:



**OUTPUT :-**



7. Hover over the milliseconds number next to the build stage name as shown in the screenshot below:



**Note:** Ensure that you hover the cursor over the milliseconds number without clicking on it

**OUTPUT :-**



Chrome File Edit View History Bookmarks Profiles Tab Window Help

new\_demo - Jenkins

localhost:8080/job/new\_demo/

Jenkins / new\_demo

Status

Changes

Build Now

Configure

Delete Pipeline

Full Stage View

Stages

Rename

Pipeline Syntax

new\_demo

Add description

Stage View

Average stage times:  
(full run time: ~3s)

hello

198ms

198ms

Oct 15 00:07 No Changes

Permalinks

Builds

Today

#1 12:07 AM

REST API Jenkins 2.516.2

8. Click on **Logs** as shown in the screenshot below:

Dashboard ▾ > new\_demo ▾ >

Status

</> Changes

▶ Build Now

⚙️ Configure

🗑️ Delete Pipeline

🔍 Full Stage View

★ Favorite

🌊 Open Blue Ocean

✎ Rename

new\_demo

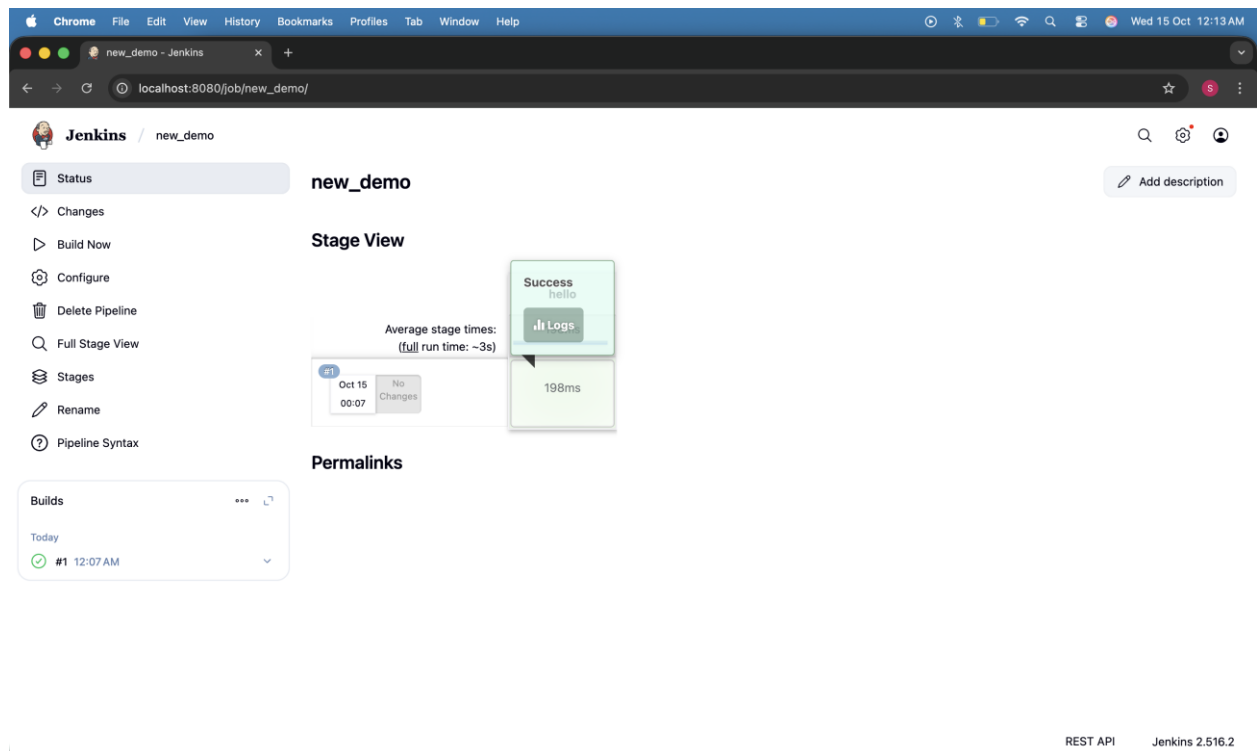
Stage View

Average stage times:  
(Average full run time: ~472ms)

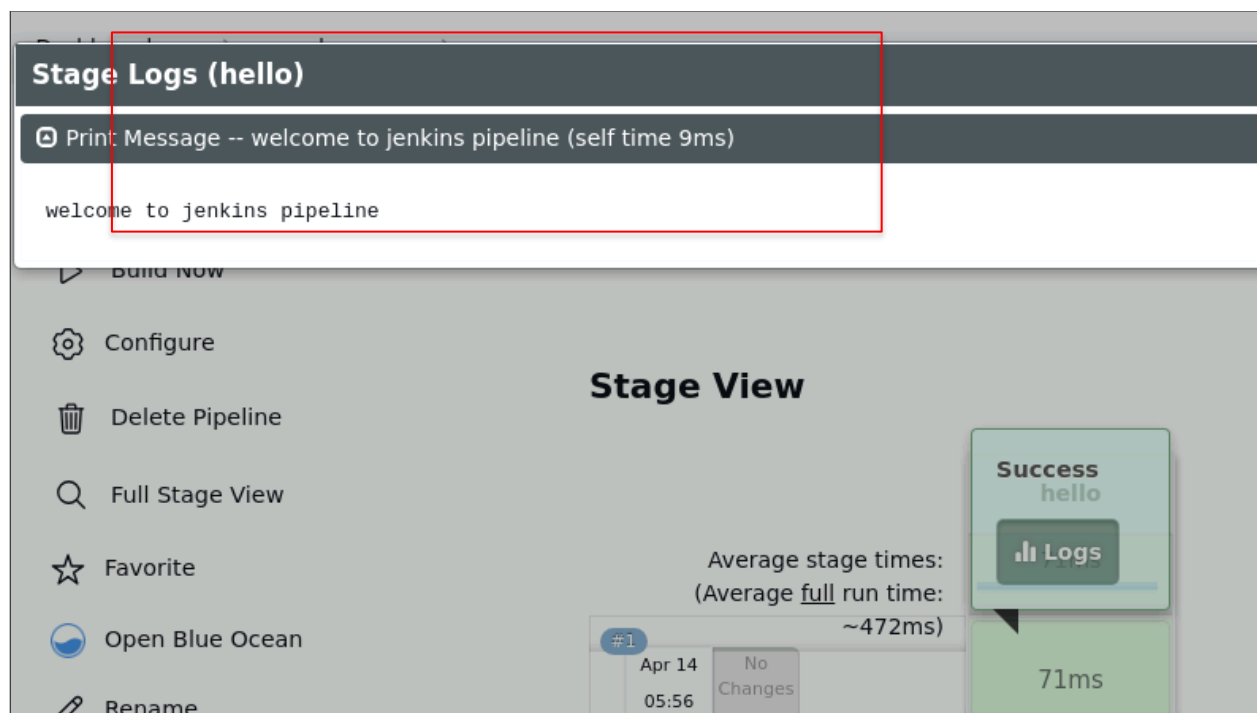
#1  
Apr 14  
05:56  
No  
Changes

Success  
hello  
Logs  
71ms

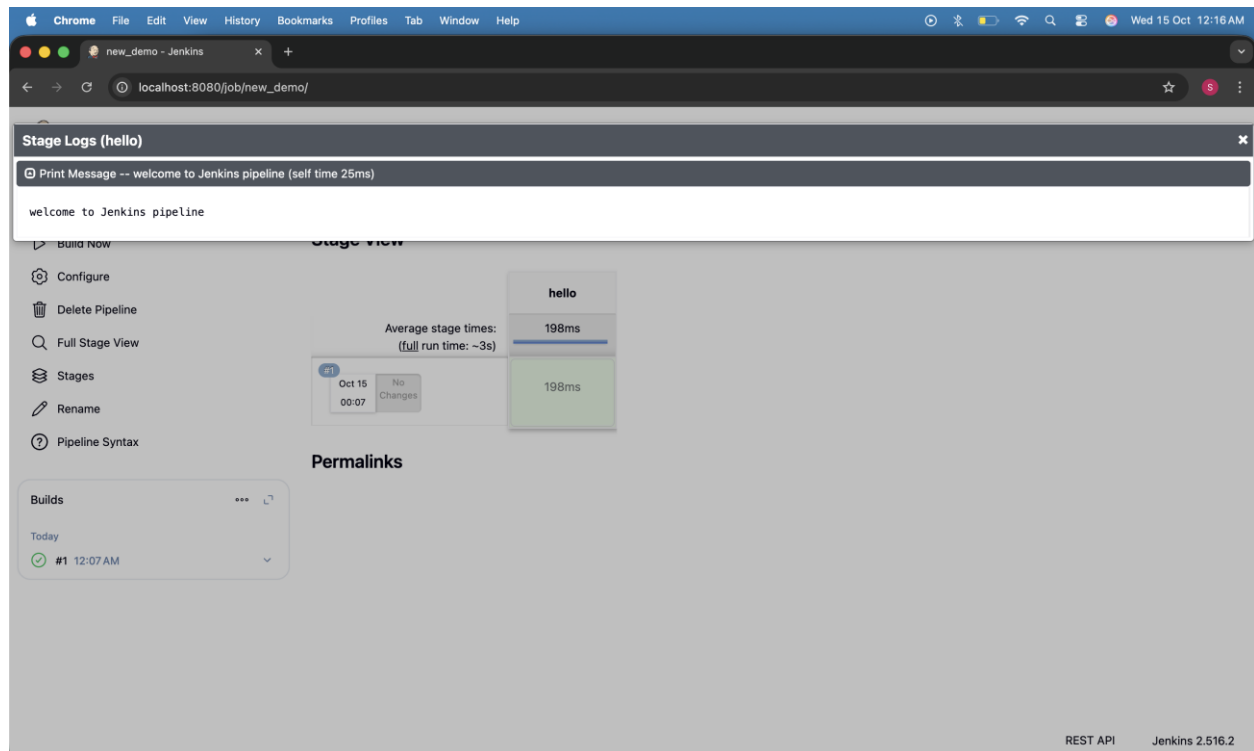
OUTPUT :-



Check for the message in the top-left corner to confirm the successful execution of the pipeline stage as shown in the screenshot below:



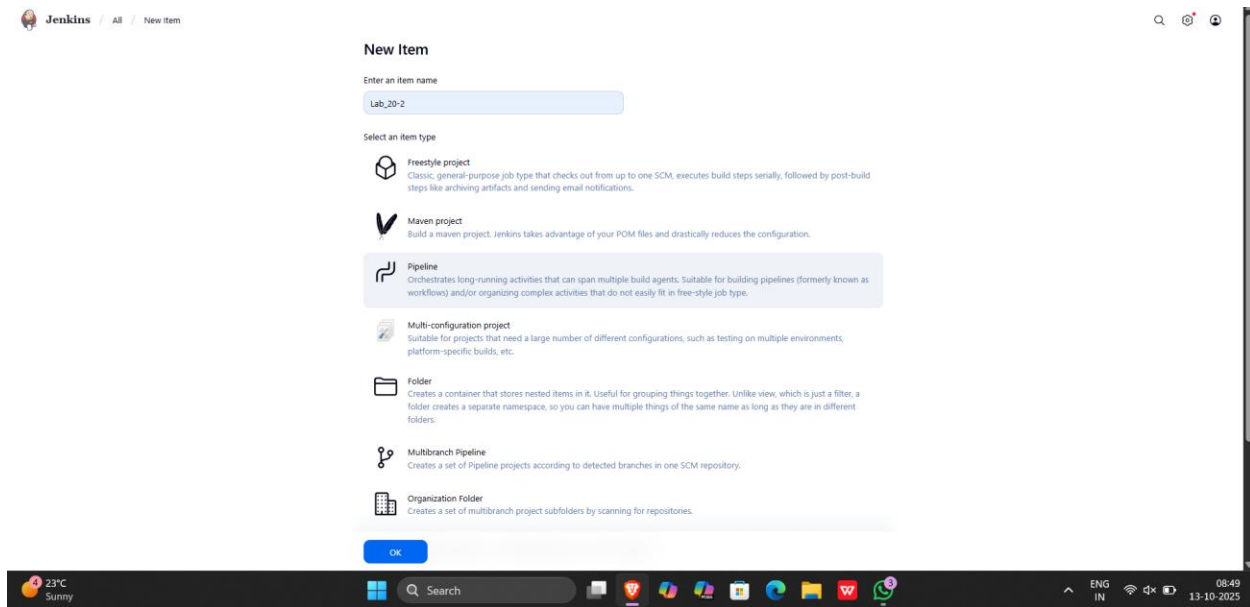
By following these steps, you have successfully created a pipeline script for automating build processes in Jenkins.



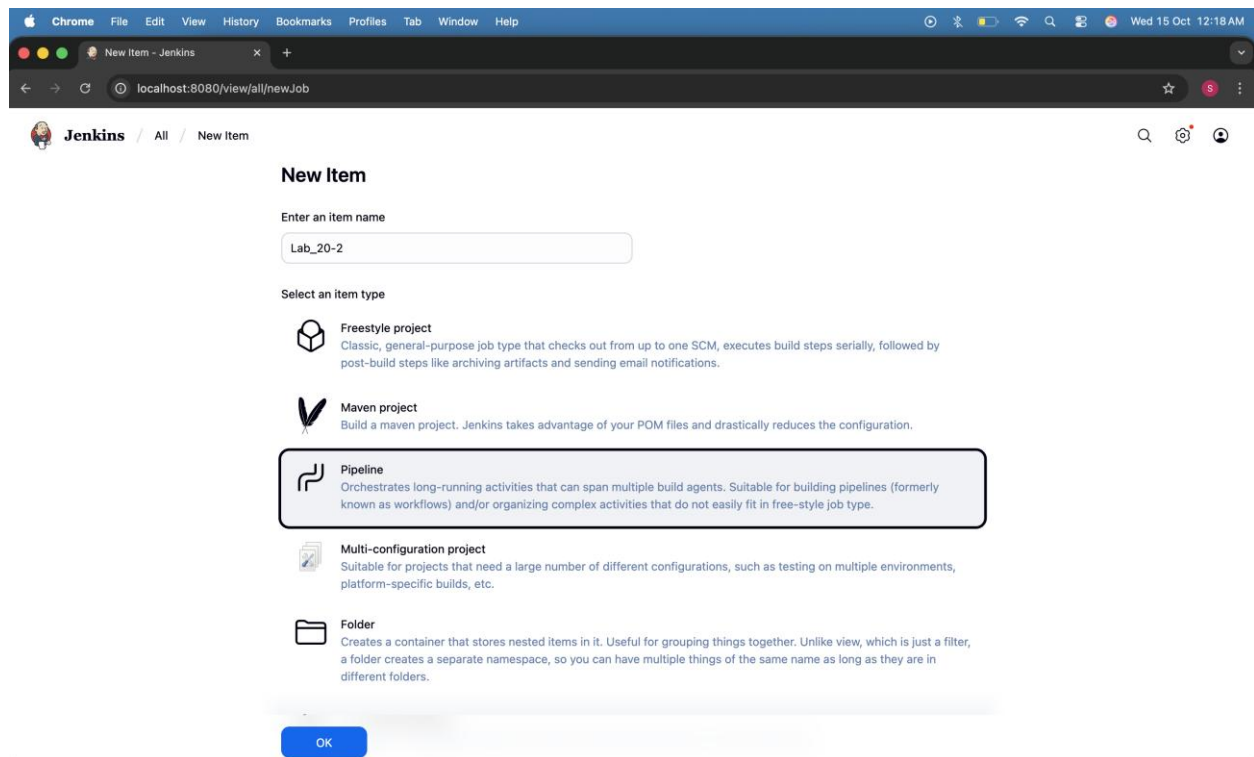
## OUTPUT :-

Creating a pipeline for a project

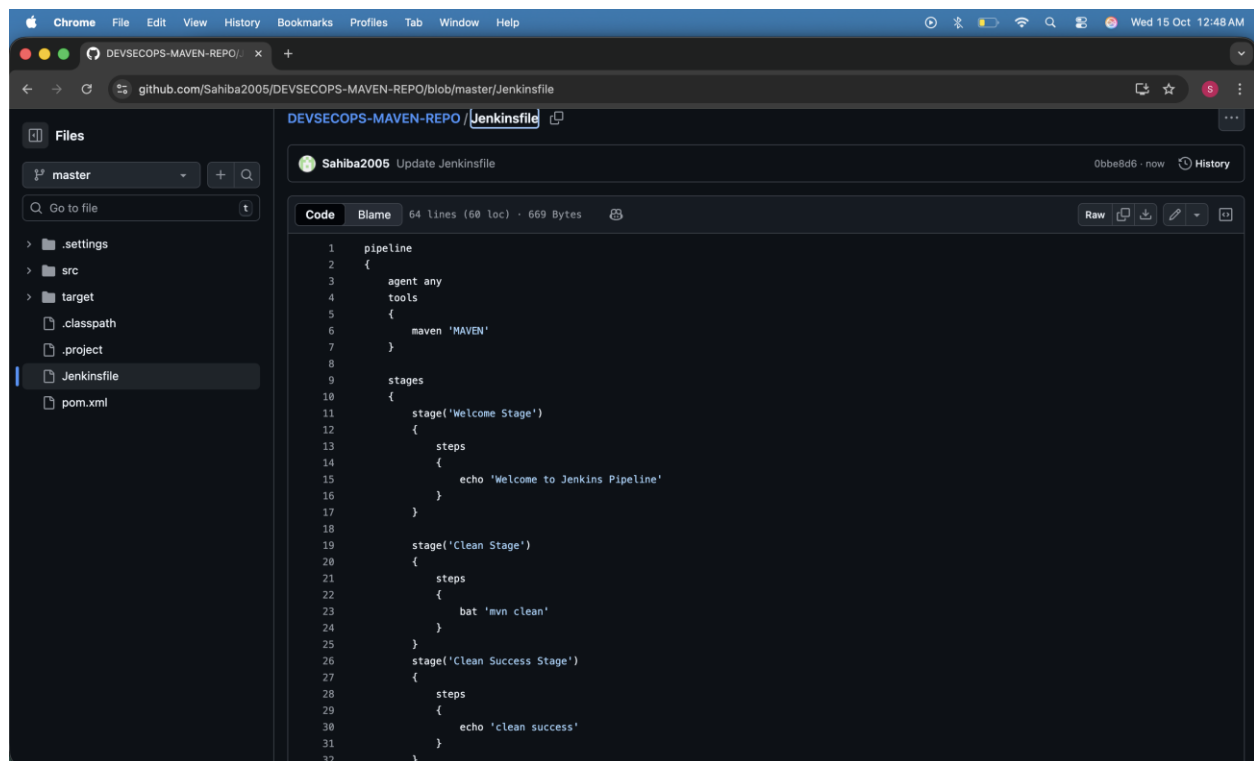
1) Create a built using pipeline

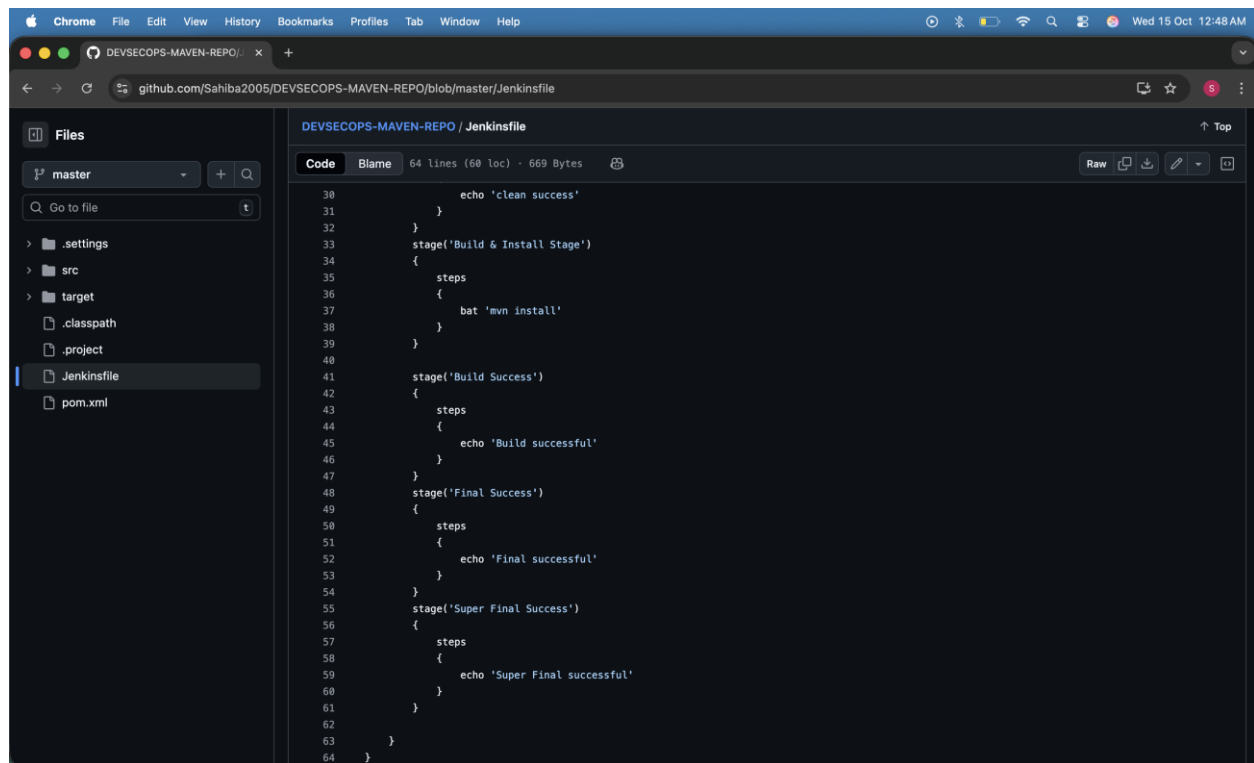


## OUTPUT :-



2) write the script for the pipeline in jenkinsfile in github





The screenshot shows a web browser window with the address bar displaying `github.com/Sahiba2005/DEVSECOPS-MAVEN-REPO/blob/master/Jenkinsfile`. The page title is `DEVSECOPS-MAVEN-REPO / Jenkinsfile`. On the left, a sidebar shows the file structure of the repository, including `.settings`, `src`, `target`, `.classpath`, `.project`, `Jenkinsfile` (selected), and `pom.xml`. The main content area displays the `Jenkinsfile` code, which is a Jenkins pipeline script. The code is as follows:

```
30         echo 'clean success'
31     }
32 }
33 stage('Build & Install Stage')
34 {
35     steps
36     {
37         bat 'mvn install'
38     }
39 }
40
41 stage('Build Success')
42 {
43     steps
44     {
45         echo 'Build successful'
46     }
47 }
48 stage('Final Success')
49 {
50     steps
51     {
52         echo 'Final successful'
53     }
54 }
55 stage('Super Final Success')
56 {
57     steps
58     {
59         echo 'Super Final successful'
60     }
61 }
62
63 }
64 }
```


3) Add the repository url in github project and in pipeline




ChromeFileEditViewHistoryBookmarksProfilesTabWindowHelp

Lab\_20-2 Config - Jenkins

localhost:8080/job/Lab\_20-2/configure

Wed 15 Oct 12:52 AM

 Jenkins / Lab\_20-2 / Configuration



Configure

General

Triggers

Pipeline

Advanced

☐ Do not allow the pipeline to resume if the controller restarts

☒ GitHub project

Project url ?  

https://github.com/Sahiba2005/DEVSECOPS-MAVEN-REPO

Advanced ▾

☐ Pipeline speed/durability override ?

☐ Preserve stashes from completed builds ?

☐ This project is parameterized ?

☐ Throttle builds ?

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

☐ Build after other projects are built ?

☐ Build periodically ?

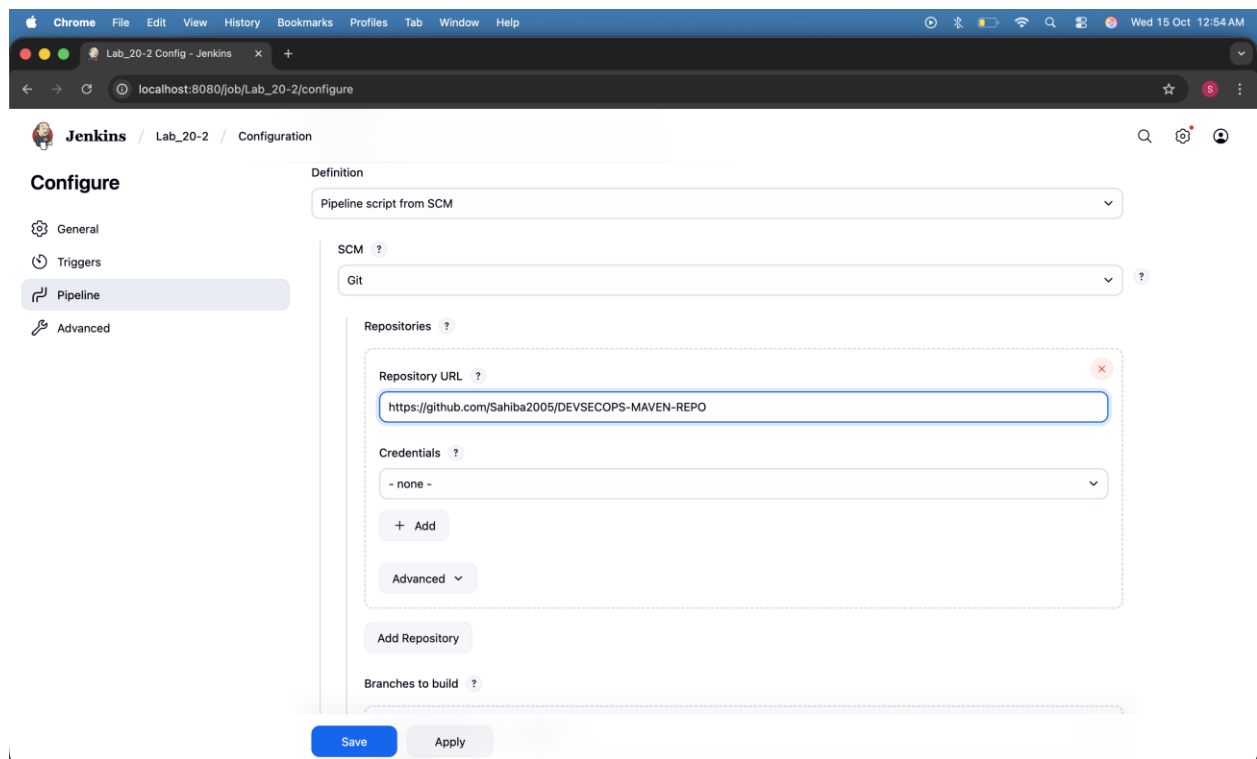
☐ GitHub hook trigger for GITScm polling ?

☒ Poll SCM ?

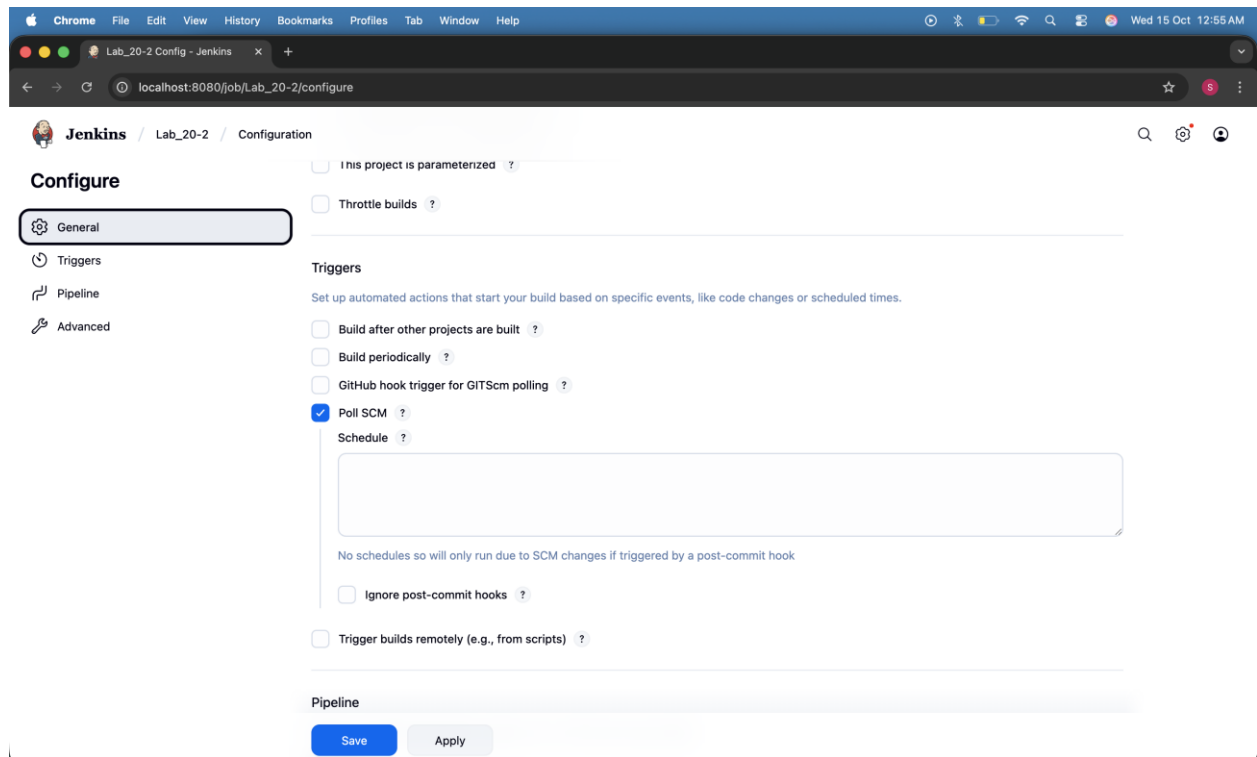
Save

Apply





4) check poll scm option



**OUTPUT :-**

Chrome File Edit View History Bookmarks Profiles Tab Window Help Wed 15 Oct 1:04 AM

Lab\_20-2 - Jenkins  
localhost:8080/job/Lab\_20-2/

Stage Logs (Super Final Success)

- Use a tool from a predefined Tool Installation -- MAVEN\_HOME (self time 34ms)
- Fetches the environment variables for a given tool in a list of 'FOO=bar' strings suitable for the withEnv step. (self time 39ms)
- Print Message -- Super Final successful (self time 20ms)

Configure  
Delete Pipeline  
Full Stage View  
GitHub  
Stages  
Rename  
Pipeline Syntax  
Git Polling Log

Average stage times:  
(full run time: ~12s)

	Declarative: Checkout SCM	Declarative: Tool Install	Welcome Stage	Clean Stage	Clean Success Stage	Build & Install Stage	Build Success	Final Success	Super Final Success
#1 Oct 15 01:02 No Changes	1s	150ms	247ms	2s	221ms	4s	248ms	216ms	215ms

Permalinks

Builds

Today

✓ #1 1:02 AM

REST API Jenkins 2.516.2

## Pipeline script

```
pipeline
{
  agent any
  tools
  {
    maven 'Maven'
  }
}
```

```
stages
{
stage('Welcome Stage')
{
steps
{
echo 'Welcome to Jenkins Pipeline'
}
}

stage('Clean Stage')
{
steps
{
sh 'mvn clean'
}
}

    stage('Clean Success Stage')
{
steps
{
echo 'clean success'
}
}

stage('Build & Install Stage')
{
steps
{
Sh 'mvn install'
}
}

stage('Build Success')
{
```

```
steps
{
  echo 'Build successful'
}
}
stage('Final Success')
{
  steps
  {
    echo 'Final successful'
  }
}
}
```