Name – Rachit Shrivastava

Sap Id – 500119571

Batch 3 – DevOps

Lab Exercise 20

Creating a Pipeline Script

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

Tools required: Jenkins

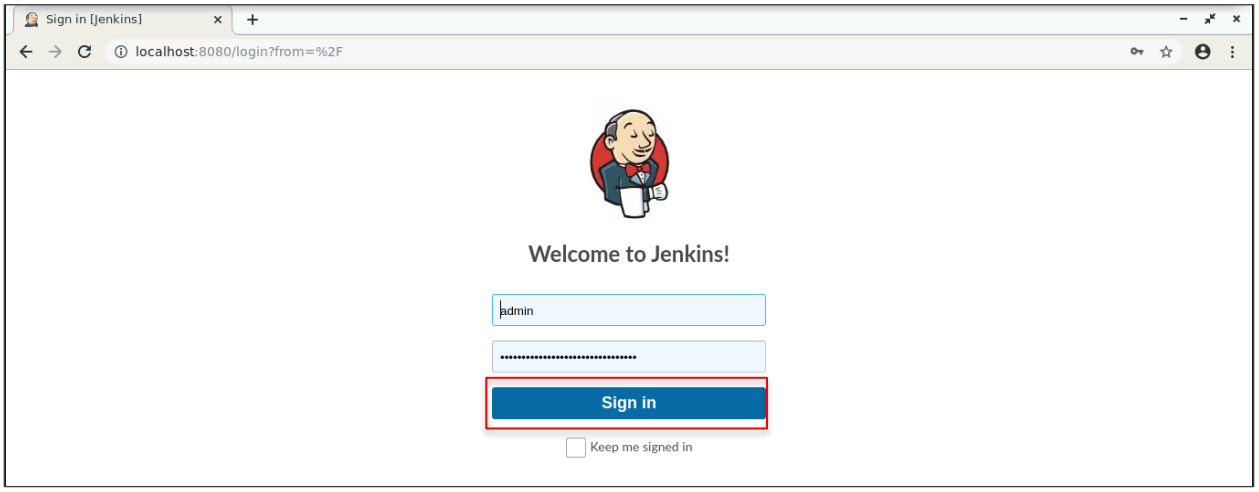
Prerequisites: None

Steps to be followed:

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

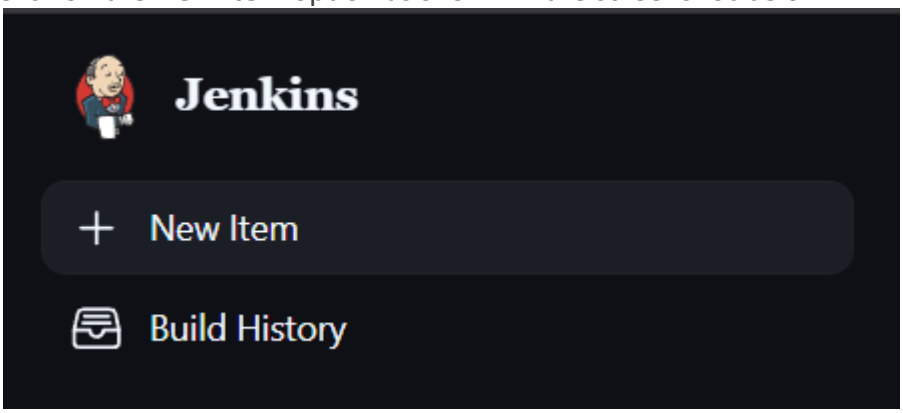
Step 1: Log in to the Jenkins CI tool and create a pipeline script

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

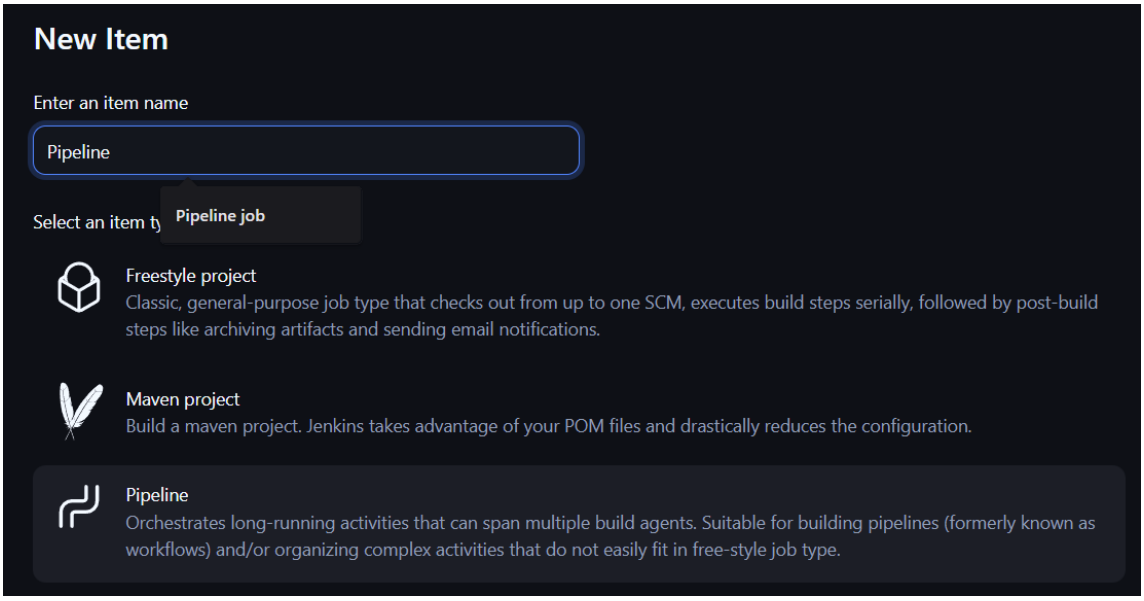


Note: The credentials for accessing Jenkins in the lab are Username: **admin** and Password: **admin**.

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



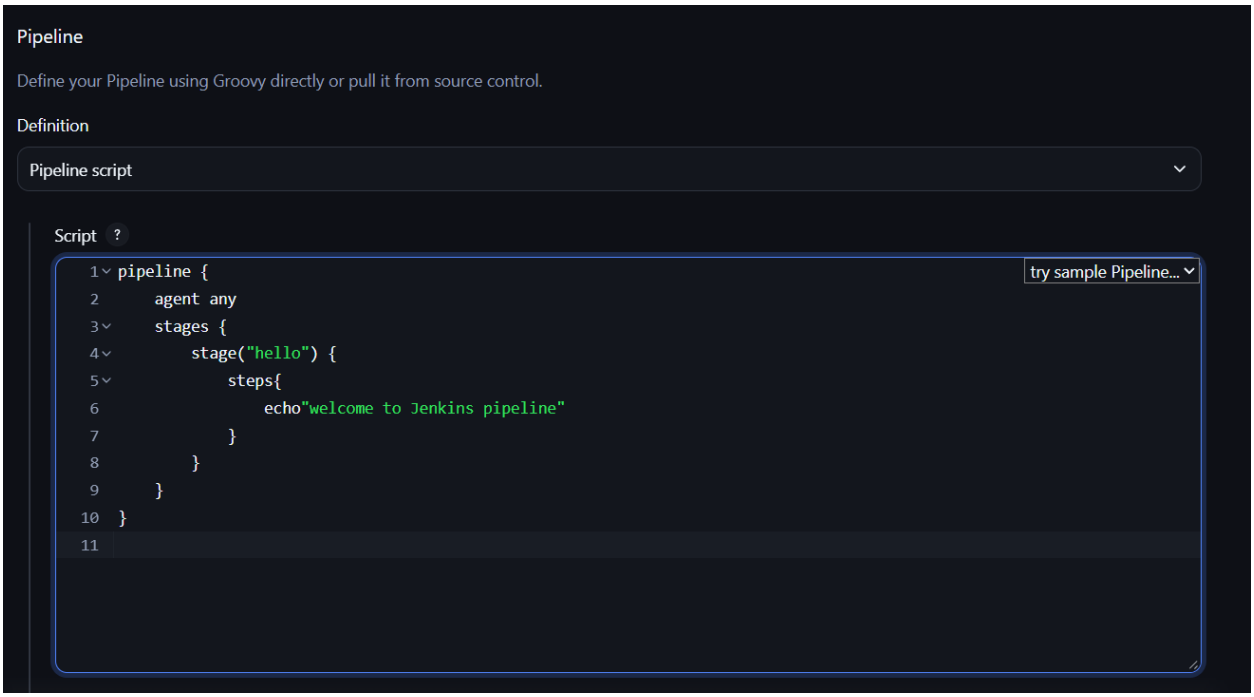
1.3 Enter a desired name for the project, select **Pipeline**, and then click on **OK** as shown in the screenshot below:



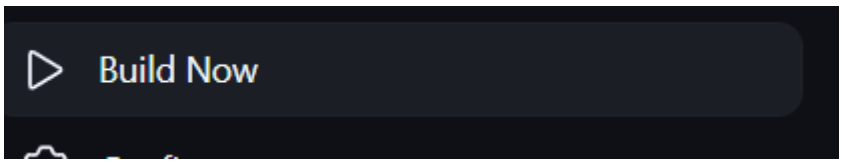
1.4 Click on **Pipeline** as shown in the screenshot below:

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

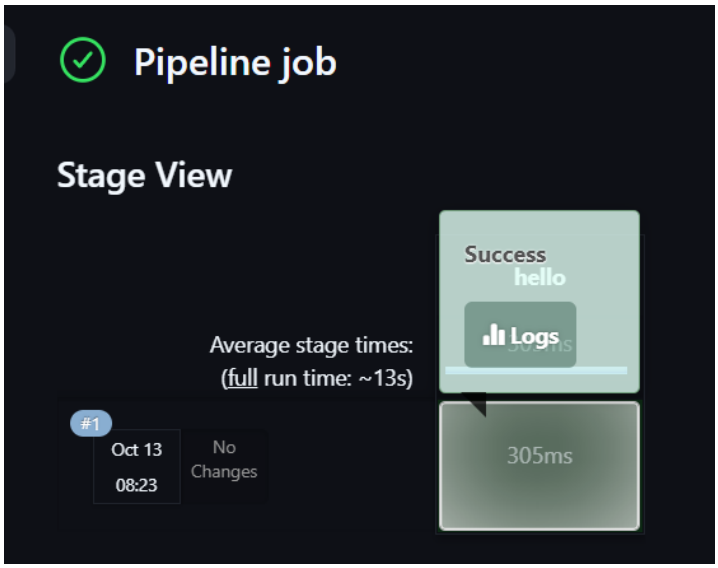
```
pipeline {
   agent any
   stages {
      stage("hello") {
         steps{
            echo"welcome to Jenkins pipeline"
         }
      }
   }
}
```



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



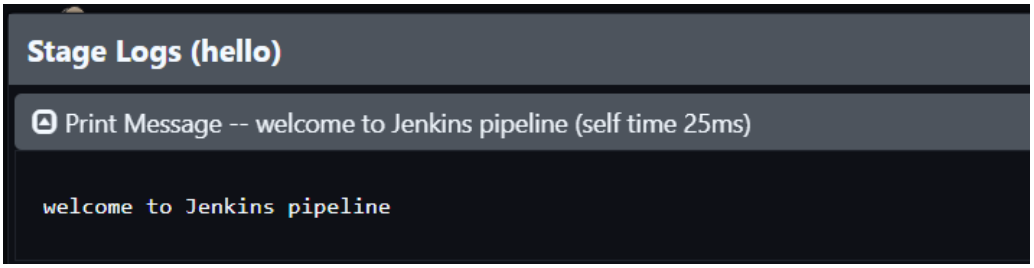
1.7 Hover over the milliseconds number next to the build stage name as shown in the screenshot below:



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

1.8 Click on **Logs** as shown in the screenshot below:

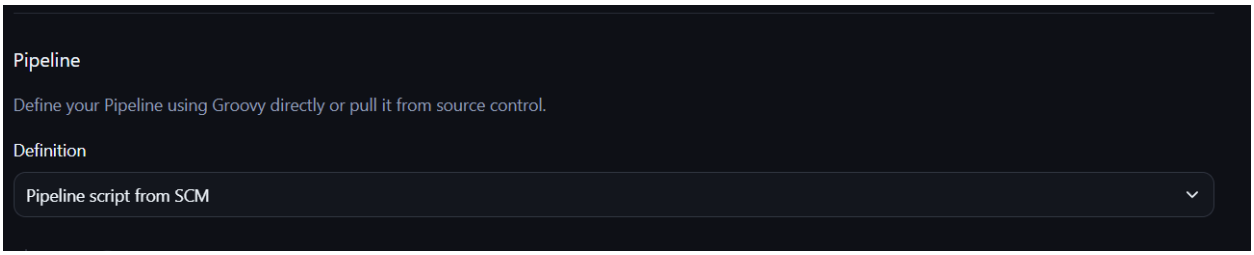
1.9 Check for the message in the top-left corner to confirm the successful execution of the pipeline stage as shown in the screenshot below:



Implementing Pipeline Script from SCM

Step 1: Change Pipeline Definition

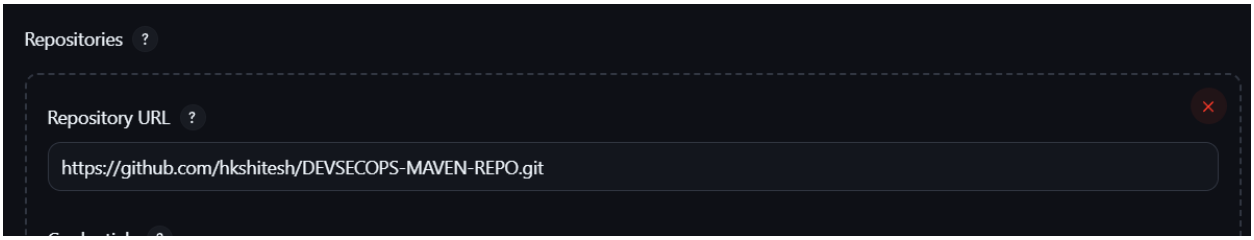
In the pipeline configuration screen, select "Pipeline script from SCM" from the **Definition** dropdown menu. This configures the Jenkins job to retrieve the pipeline script from a version control system like Git.



Step 2: Configure Repository

After selecting "Pipeline script from SCM", new options will appear. In the **Repositories** section, enter the **Repository URL** where the `JenkinsFile` is located.

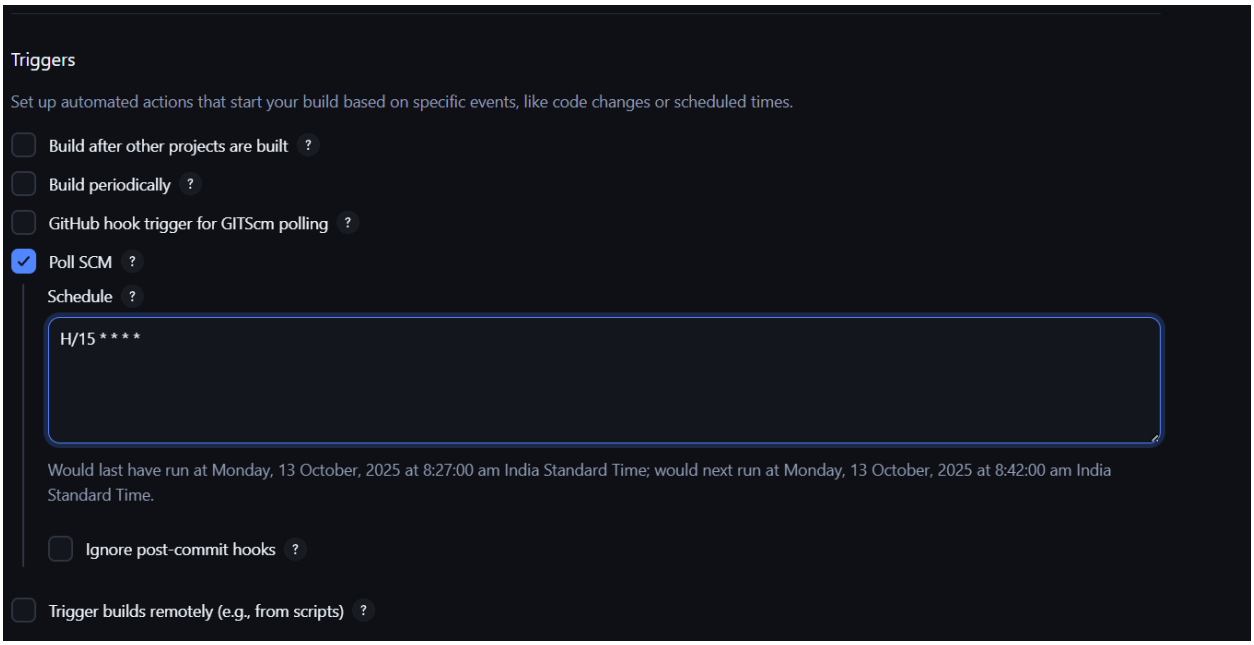
- **Repository URL**: `https://github.com/hkshitesh/DEVSECOPS-MAVEN-REPO.git`



Step 3: Configure Build Triggers

Set up an automated action to start the build based on specific events.

- Select the **Poll SCM** checkbox.
- In the **Schedule** text box, enter `H/15 * * * *` to instruct Jenkins to check the repository for any changes approximately every 15 minutes.



JenkinsFile used:

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

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

                stage('Clean Stage')
                {
                        steps
                        {
                                bat 'mvn clean'
                        }
                }
     stage('Clean Success Stage')
                {
                        steps
                        {
                                echo 'clean success'
                        }
                }
                stage('Build & Install Stage')
                {
                        steps
                        {
                                bat 'mvn install'
                        }
                }

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

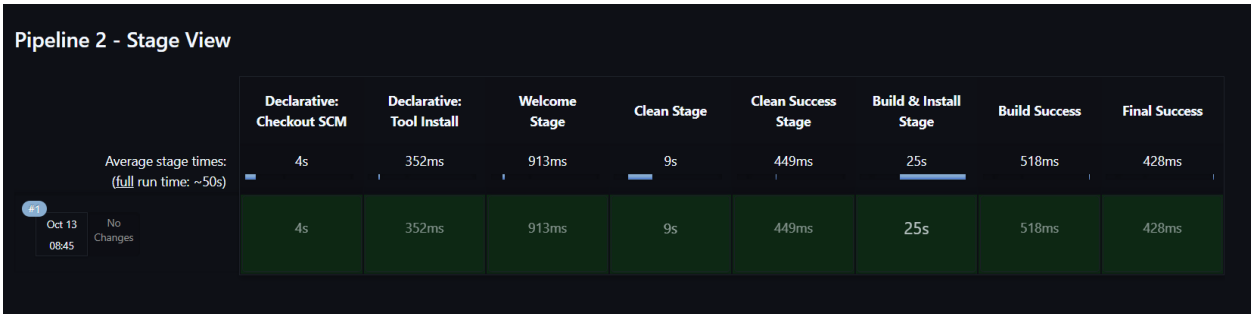
```
        }
        stage('Final Success')
        {
                steps
                {
                        echo 'Final successful'
                }
        }

}}
```

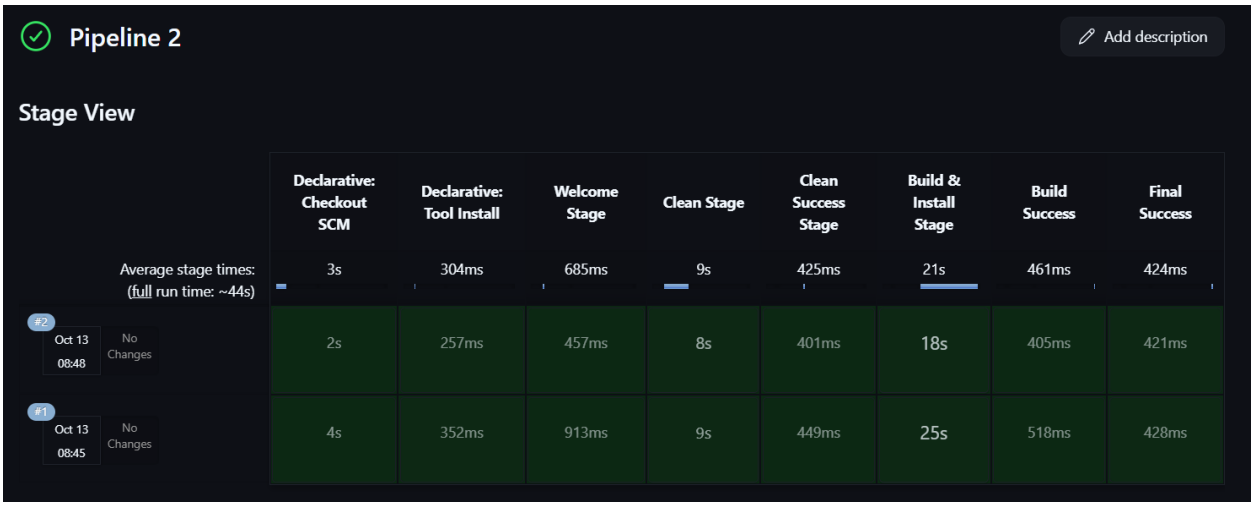
Step 4: Review the JenkinsFile

The repository contains a `JenkinsFile` that defines the pipeline's stages and steps. The script used in this exercise includes the following stages:

- **Welcome Stage**
- **Clean Stage**
- **Clean Success Stage**
- **Build & Install Stage**
- **Build Success**
- **Final Success**

The script also defines `maven` as a required tool and uses the `bat` step to run maven commands like `mvn clean` and `mvn install`.




Pipeline 2
Add description
Stage View
Declarative: Checkout SCM
Declarative: Tool Install
Welcome Stage
Clean Stage
Clean Success Stage
Build & Install Stage
Build Success
Final Success
Average stage times:
(full run time: ~44s)
3s
304ms
685ms
9s
425ms
21s
461ms
424ms
#2
Oct 13
08:48
No Changes
2s
257ms
457ms
8s
401ms
18s
405ms
421ms
#1
Oct 13
08:45
No Changes
4s
352ms
913ms
9s
449ms
25s
518ms
428ms