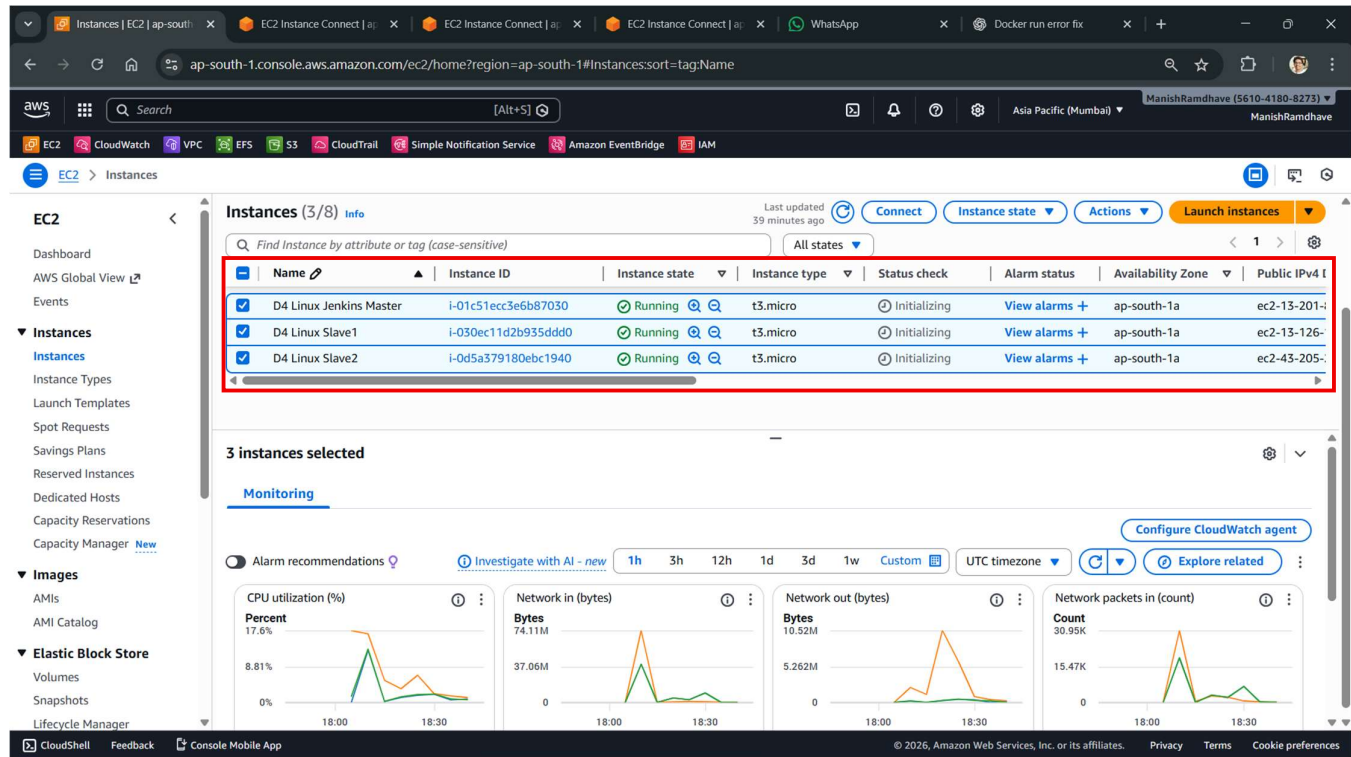


# Docker Assignment 4

## Step 1: Launched three instances, D4-Jenkins Master, D4-Slave1 and D4-Slave2



The screenshot shows the AWS Management Console with three EC2 instances listed. The instances are:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
D4 Linux Jenkins Master	i-01c51ecc3e6b87030	Running	t3.micro	Initializing	View alarms +	ap-south-1a	ec2-13-201-
D4 Linux Slave1	i-030ec11d2b935ddd0	Running	t3.micro	Initializing	View alarms +	ap-south-1a	ec2-13-126-
D4 Linux Slave2	i-0d5a379180ebc1940	Running	t3.micro	Initializing	View alarms +	ap-south-1a	ec2-43-205-

Below the table, there are monitoring graphs for CPU utilization, Network in (bytes), Network out (bytes), and Network packets in (count).

## Step 2: Installed Java-17, Git and Docker on all the instance:



The screenshot shows the terminal output of the installation of Java-17, Git, and Docker on the D4 Linux Jenkins Master instance. The commands and their outputs are:

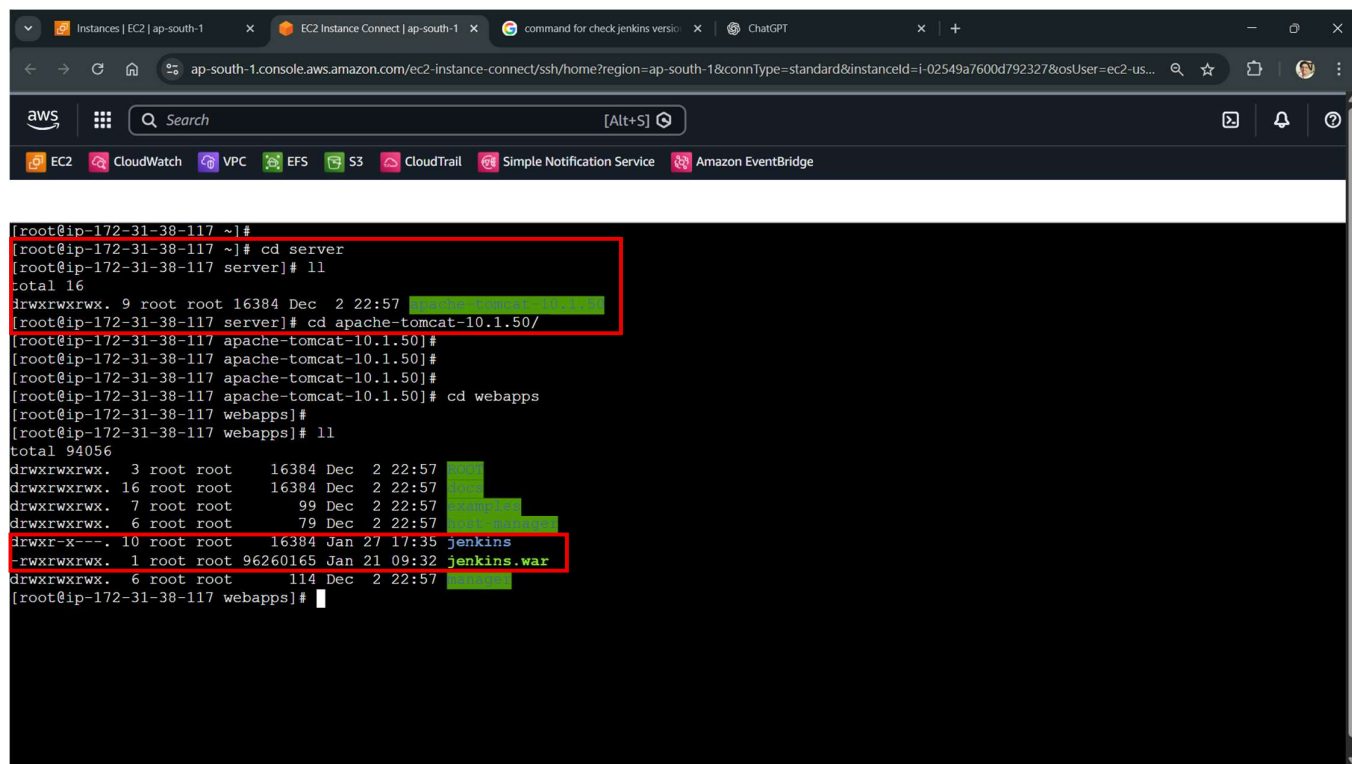
```
[root@ip-172-31-40-216 ~]# java --version
openjdk 17.0.18 2026-01-20 LTS
OpenJDK Runtime Environment Corretto-17.0.18.9.1 (build 17.0.18+9-LTS)
OpenJDK 64-Bit Server VM Corretto-17.0.18.9.1 (build 17.0.18+9-LTS, mixed mode, sharing)

[root@ip-172-31-40-216 ~]# git -v
git version 2.50.1

[root@ip-172-31-40-216 ~]# docker -v
Docker version 25.0.14, build 0bab007
```

The terminal output is displayed in a red box. Below the terminal output, the instance details for i-0bb0216d314c17b07 (Linux Jenkins Master) are shown, including the Public IP (13.233.132.0) and Private IP (172.31.40.216).

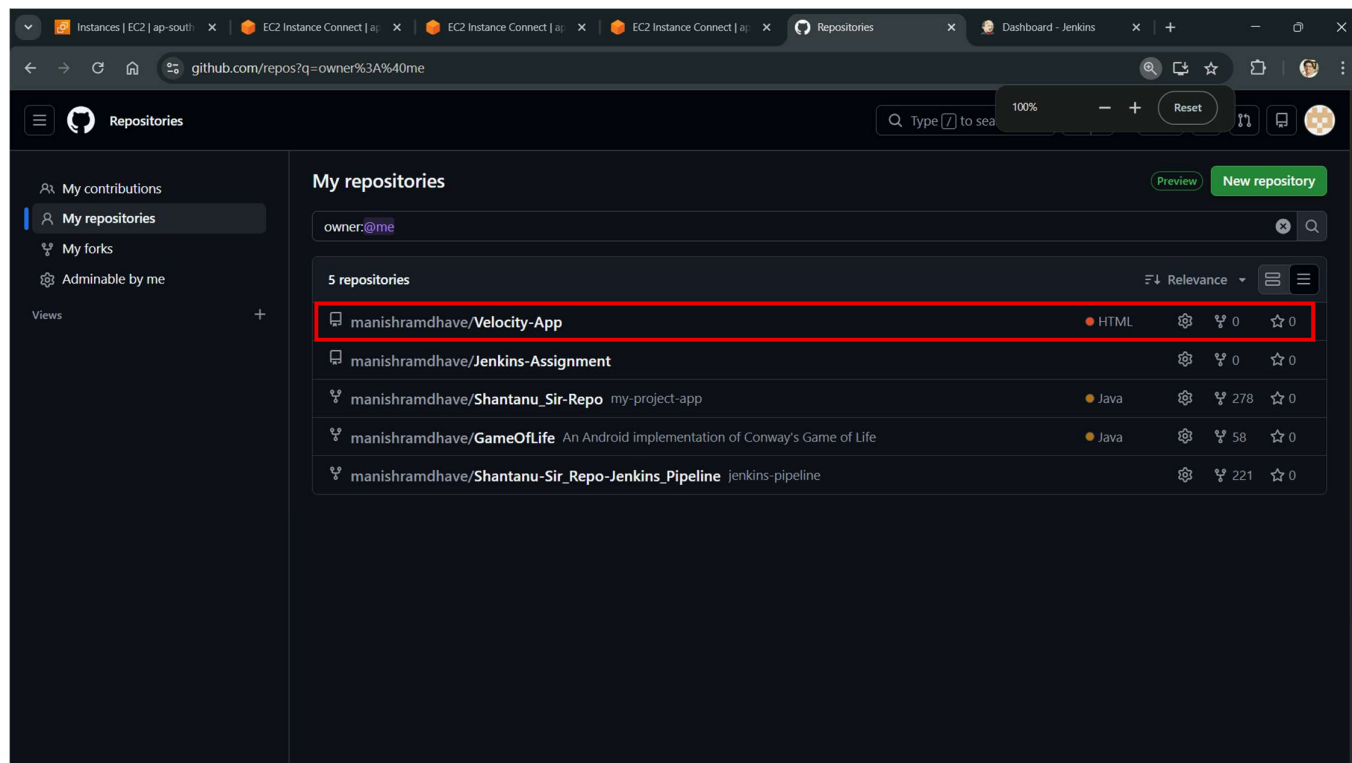
### Step 3: Installed Apache-Tomcat-10 and Jenkins on the Jenkins Master Instance:



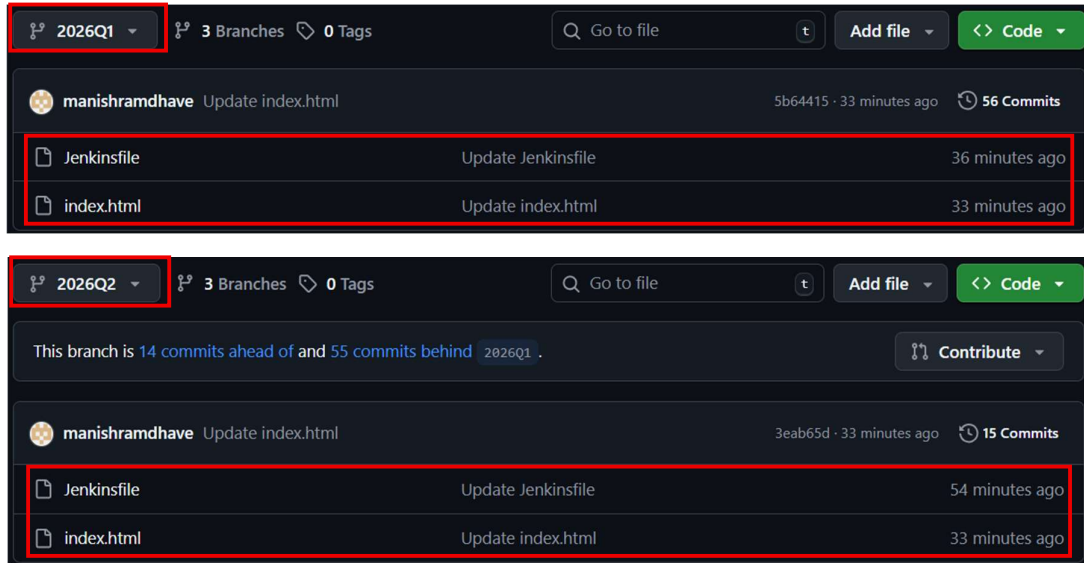
The screenshot shows the AWS Management Console with a terminal window open for an EC2 instance named 'ap-south-1'. The terminal output shows the user navigating to the 'server' directory, then to 'apache-tomcat-10.1.50', and finally to 'webapps'. The 'ls' command is run in the 'webapps' directory, showing a list of files including 'jenkins' and 'jenkins.war', which are highlighted with red boxes. The terminal output is as follows:

```
[root@ip-172-31-38-117 ~]#  
[root@ip-172-31-38-117 ~]# cd server  
[root@ip-172-31-38-117 server]# ll  
total 16  
drwxrwxrwx. 9 root root 16384 Dec 2 22:57 apache-tomcat-10.1.50/  
[root@ip-172-31-38-117 apache-tomcat-10.1.50]#  
[root@ip-172-31-38-117 apache-tomcat-10.1.50]#  
[root@ip-172-31-38-117 apache-tomcat-10.1.50]# cd webapps  
[root@ip-172-31-38-117 webapps]#  
[root@ip-172-31-38-117 webapps]# ll  
total 94056  
drwxrwxrwx. 3 root root 16384 Dec 2 22:57 .  
drwxrwxrwx. 16 root root 16384 Dec 2 22:57 ..  
drwxrwxrwx. 7 root root 99 Dec 2 22:57 .svn  
drwxrwxrwx. 6 root root 79 Dec 2 22:57 .svn  
-rwxr-xr-x. 10 root root 16384 Jan 27 17:35 jenkins  
-rwxrwxrwx. 1 root root 96260165 Jan 21 09:32 jenkins.war  
drwxrwxrwx. 6 root root 114 Dec 2 22:57 .svn  
[root@ip-172-31-38-117 webapps]#
```

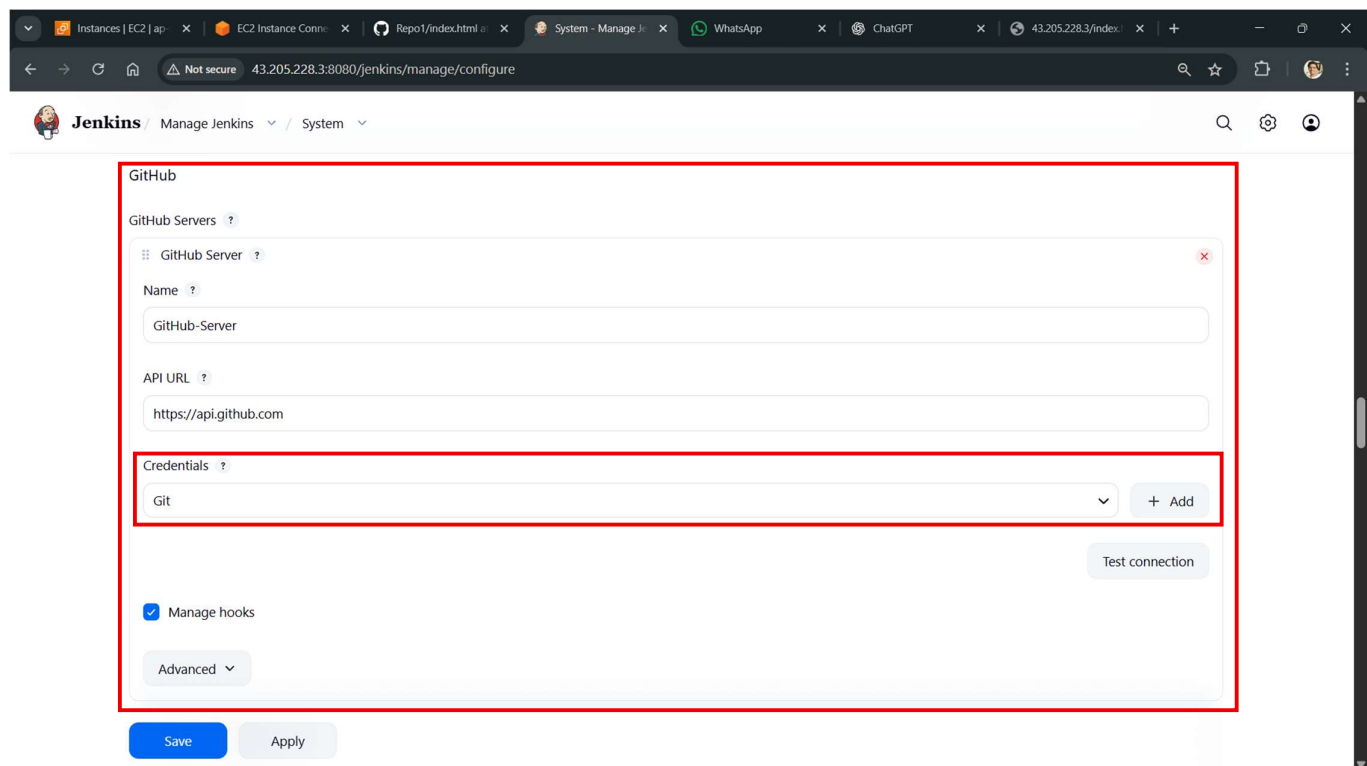
### Step 4: Made a Private Repository named 'Velocity-App' in GitHub account:



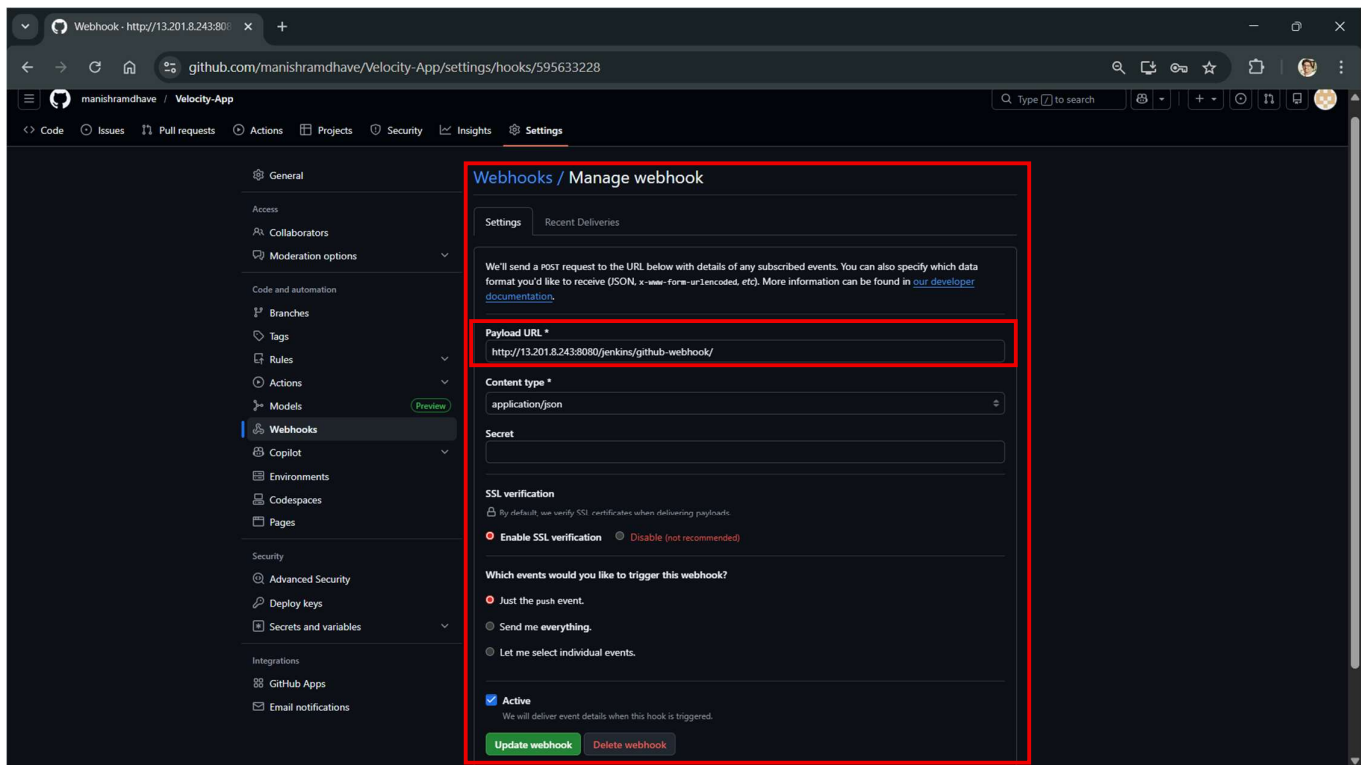
Step 5: Created two branches, **2026Q1** and **2026Q2** in the ‘**Velocity-App**’ Repository and pushed **two different ‘index.html’** files and also created **two different ‘Jenkinsfile’** files in respective branches:



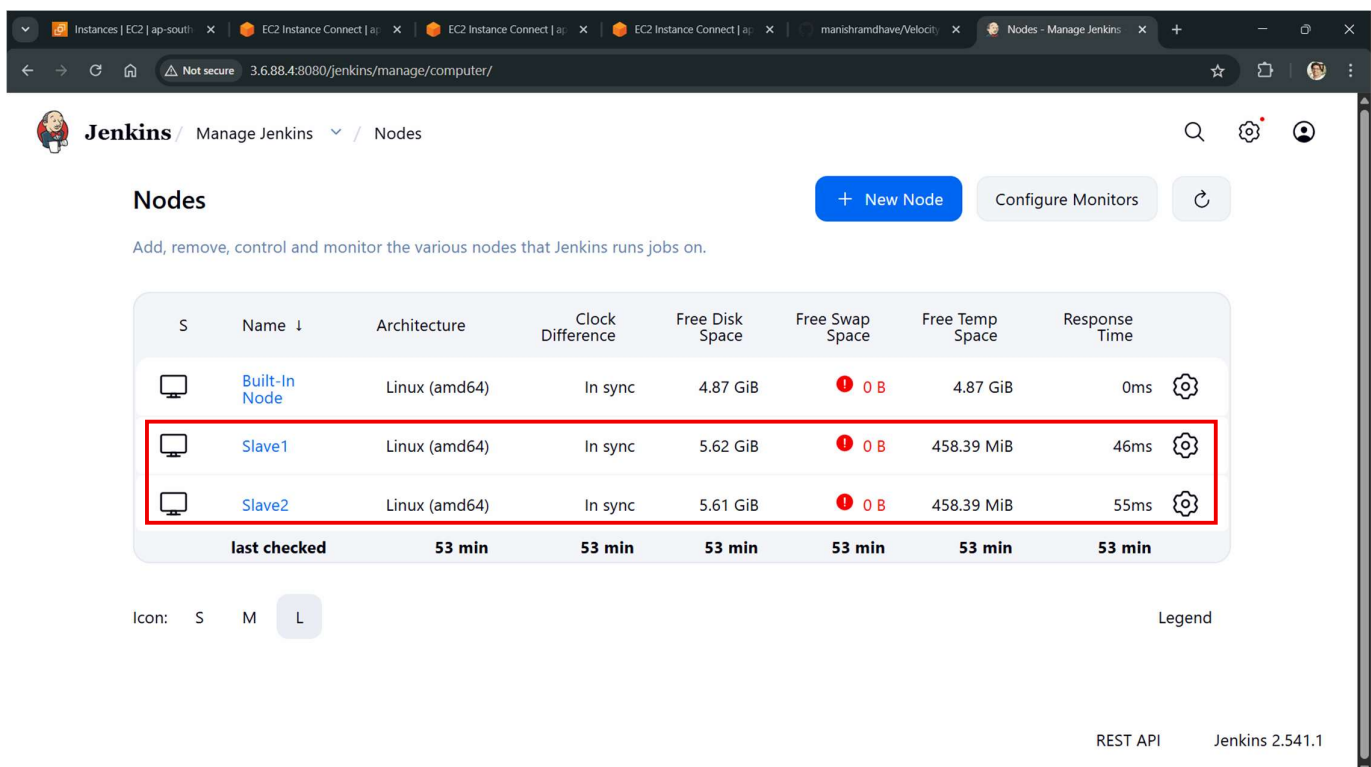
Step 6: Created an **API Connection between Jenkins to GitHub** Repositories in ‘**Manage Jenkins**’ by creating a **Secret Text (Credential)** using a GitHub Token in Jenkins:



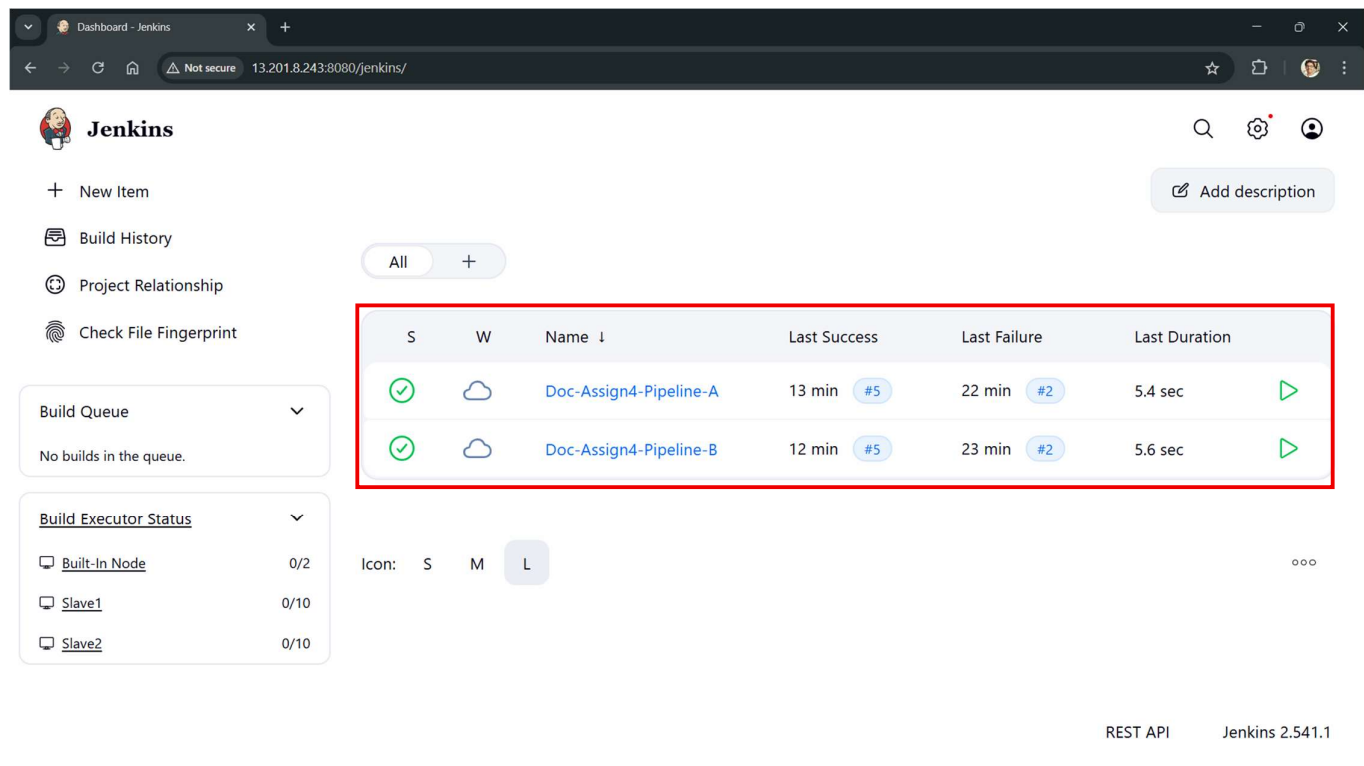
Step 7: Created an **API Connection between Jenkins and GitHub Repositories** by using ‘Git Webhooks’ (i.e. setting up Jenkins URL in Git) :



Step 8: Created two Nodes for to establish the connection between Jenkins Master and each Slave Instances using the ‘**Credential**’ and ‘**Manually trusted key Verification Strategy**’:



## Step 9: Launched the Jenkins and created two different Pipeline Jobs. **Job1 and Job2:**

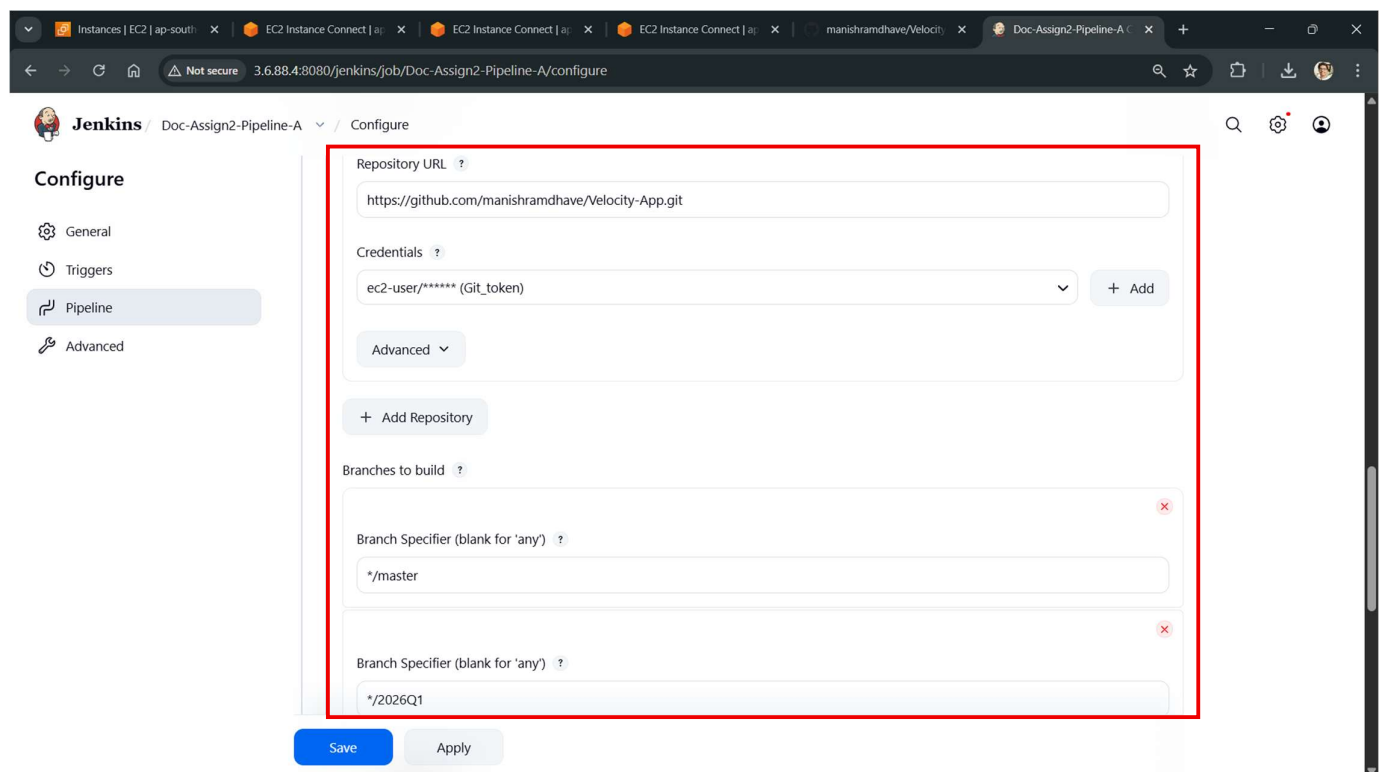


The screenshot shows the Jenkins Dashboard. On the left, there are links for 'New Item', 'Build History', 'Project Relationship', and 'Check File Fingerprint'. Below these are sections for 'Build Queue' (No builds in the queue) and 'Build Executor Status' (Built-In Node: 0/2, Slave1: 0/10, Slave2: 0/10). The main area displays a table of pipeline jobs, with two jobs highlighted in a red box:

S	W	Name ↓	Last Success	Last Failure	Last Duration
✓	☁	Doc-Assign4-Pipeline-A	13 min #5	22 min #2	5.4 sec
✓	☁	Doc-Assign4-Pipeline-B	12 min #5	23 min #2	5.6 sec

Below the table, there are icons for 'S', 'M', and 'L'. At the bottom right, it says 'REST API' and 'Jenkins 2.541.1'.

## Step 10: Integrated Git branches with Jenkins by creating 'Credentials' by using the Git Token on both the pipeline jobs:



The screenshot shows the Jenkins 'Configure' page for a pipeline job. The 'Repository URL' is set to 'https://github.com/manishramdhav/VelocityEngine-App.git'. The 'Credentials' dropdown is set to 'ec2-user/\*\*\*\*\* (Git\_token)'. The 'Branches to build' section is expanded, showing two branch specifiers: '\*/master' and '\*/2026Q1'. The 'Save' button is highlighted in blue.

Step 11: Used **‘Pipeline script from SCM’** and selected the SCM as a **‘Git’** which will follow the Jenkins pipeline script by using the **‘Jenkinsfile’** in the repository:

The screenshot shows the Jenkins configuration page for a pipeline named 'Doc-Assign2-Pipeline-A'. The left sidebar has 'Configure' selected, with sub-options: General, Triggers, Pipeline (highlighted), and Advanced. The main content area is titled 'Configure' and contains the following fields:

- Repository URL**: `https://github.com/manishramdhav/VelocityEngine-App.git`
- Credentials**: `ec2-user/***** (Git_token)` with an '+ Add' button.
- Advanced**: A dropdown menu.
- + Add Repository**: A button.
- Branches to build**: A section with two entries:
  - Branch Specifier (blank for 'any')**: `*/master`
  - Branch Specifier (blank for 'any')**: `*/2026Q1`

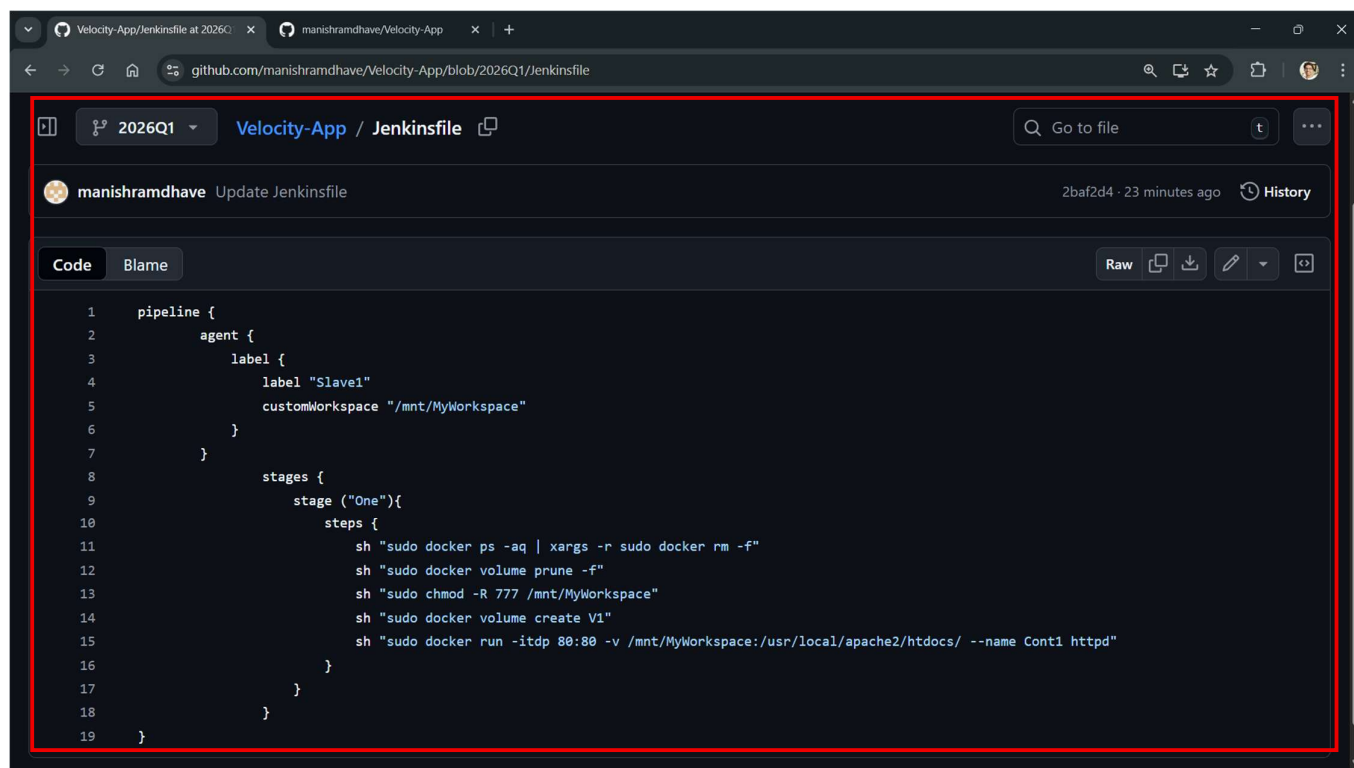
At the bottom, there are 'Save' and 'Apply' buttons. The 'Save' button is highlighted in blue.

Step 12: Integrated Git branches, 2026Q1 and 2026Q2 with Jenkins by creating ‘Credentials’ by using the Git Token **on both the pipeline Job-A and Job-B** respectively:

This screenshot is identical to the one in Step 11, showing the Jenkins configuration page for 'Doc-Assign2-Pipeline-A'. The configuration is the same: Repository URL is 'https://github.com/manishramdhav/VelocityEngine-App.git', Credentials is 'ec2-user/\*\*\*\*\* (Git\_token)', and Branches to build are '\*/\*master' and '\*/2026Q1'. The 'Save' button is highlighted in blue.

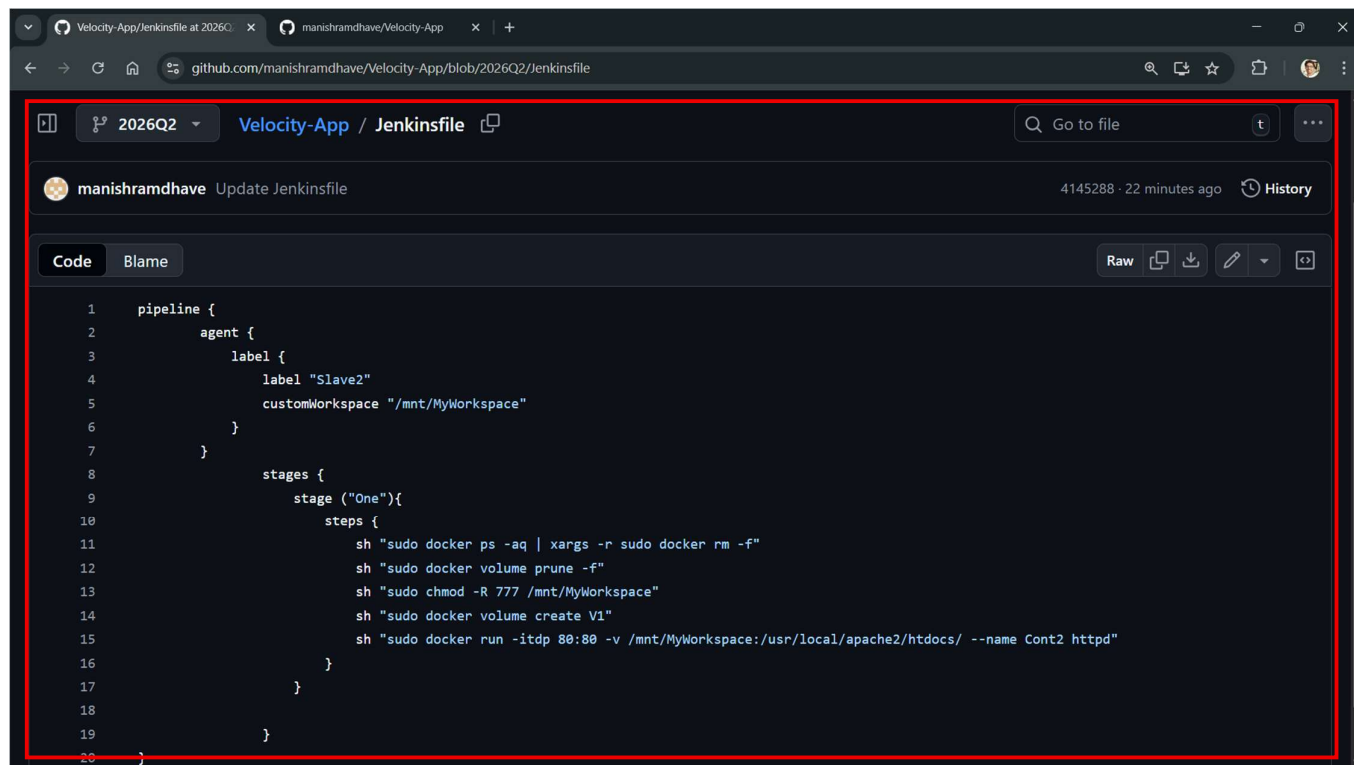


Step 13: Created a 'Jenkinsfile' on 2026Q1 branch in which out script is mentioned:



```
1 pipeline {
2   agent {
3     label {
4       label "Slave1"
5       customWorkspace "/mnt/MyWorkspace"
6     }
7   }
8   stages {
9     stage ("One"){
10      steps {
11        sh "sudo docker ps -aq | xargs -r sudo docker rm -f"
12        sh "sudo docker volume prune -f"
13        sh "sudo chmod -R 777 /mnt/MyWorkspace"
14        sh "sudo docker volume create V1"
15        sh "sudo docker run -itdp 80:80 -v /mnt/MyWorkspace:/usr/local/apache2/htdocs/ --name Cont1 httpd"
16      }
17    }
18  }
19 }
```

Step 14: Created a 'Jenkinsfile' on 2026Q2 branch in which out script is mentioned:



```
1 pipeline {
2   agent {
3     label {
4       label "Slave2"
5       customWorkspace "/mnt/MyWorkspace"
6     }
7   }
8   stages {
9     stage ("One"){
10      steps {
11        sh "sudo docker ps -aq | xargs -r sudo docker rm -f"
12        sh "sudo docker volume prune -f"
13        sh "sudo chmod -R 777 /mnt/MyWorkspace"
14        sh "sudo docker volume create V1"
15        sh "sudo docker run -itdp 80:80 -v /mnt/MyWorkspace:/usr/local/apache2/htdocs/ --name Cont2 httpd"
16      }
17    }
18  }
19 }
20 }
```

**Result:**

1. When changes are done in 2026Q1 branch, Build is triggered by '**Doc-Assign4-Pipeline-A**' and the updated index.html file is hosted from the **container 'Cont1'** of a **Slave1** instance by using the Pipeline script in the '**Jenkinsfile**' file of the same branch:

The screenshot displays two browser windows. The top window shows the GitHub repository for 'Velocity-App' on the '2026Q1' branch, with a commit by 'manishramdhare' updating 'index.html'. The commit message is 'Update index.html' and the code contains three lines: 'Hosting updated index.html from Container 1 of 2026Q1 Branch', 'Manish here', and 'Change 12:10AM'. The bottom window shows the Jenkins build interface for 'Doc-Assign4-Pipeline-A' #5, which is successful. The build was started by a GitHub push and took 5.4 seconds.

Velocity-App/index.html at 2026Q1 · manishramdhare · Update index.html · 16a55ed · now

3 lines (3 loc) · 92 Bytes

Code Blame Raw

```
1 Hosting updated index.html from Container 1 of 2026Q1 Branch
2 Manish here
3 Change 12:10AM
```

Hosting updated index.html from Container 1 of 2026Q1 Branch  
Manish here  
Change 12:10AM

Doc-Assign4-Pipeline-A #5 - Jenkins

#5 (10 Feb 2026, 18:38:48)

Add description Keep this build forever

Started by GitHub push by manishramdhare Started 8.2 sec ago Took 5.4 sec

2. When changes are done in 2026Q2 branch, Build is triggered by '**Doc-Assign4-Pipeline-B**' and the updated index.html file is hosted from the **container 'Cont2'** of a **Slave2** instance by using the Pipeline script in the '**Jenkinsfile**' file of the same branch:

The screenshot displays two browser windows. The top window shows the GitHub repository for 'Velocity-App' on the '2026Q2' branch, with a commit by 'manishramdhare' updating 'index.html'. The commit message is 'Update index.html' and the code contains three lines: 'Hosting updated index.html from Container 2 of 2026Q2 Branch', 'change 1', and 'Done with Docker Assignment 4'. The bottom window shows the Jenkins build interface for 'Doc-Assign4-Pipeline-B' #5, which is successful. The build was started by a GitHub push and took 5.6 seconds.

Velocity-App/index.html at 2026Q2 · manishramdhare · Update index.html · 89295f4 · 1 minute ago

3 lines (3 loc) · 105 Bytes

Code Blame Raw

```
1 Hosting updated index.html from Container 2 of 2026Q2 Branch
2 change 1
3 Done with Docker Assignment 4
```

Hosting updated index.html from Container 2 of 2026Q2 Branch  
change 1  
Done with Docker Assignment 4

Doc-Assign4-Pipeline-B #5 - Jenkins

#5 (10 Feb 2026, 18:39:43)

Add description Keep this build forever

Started by GitHub push by manishramdhare Started 54 sec ago Took 5.6 sec