

# ASSIGNMENT-4

**Course:** DevOps

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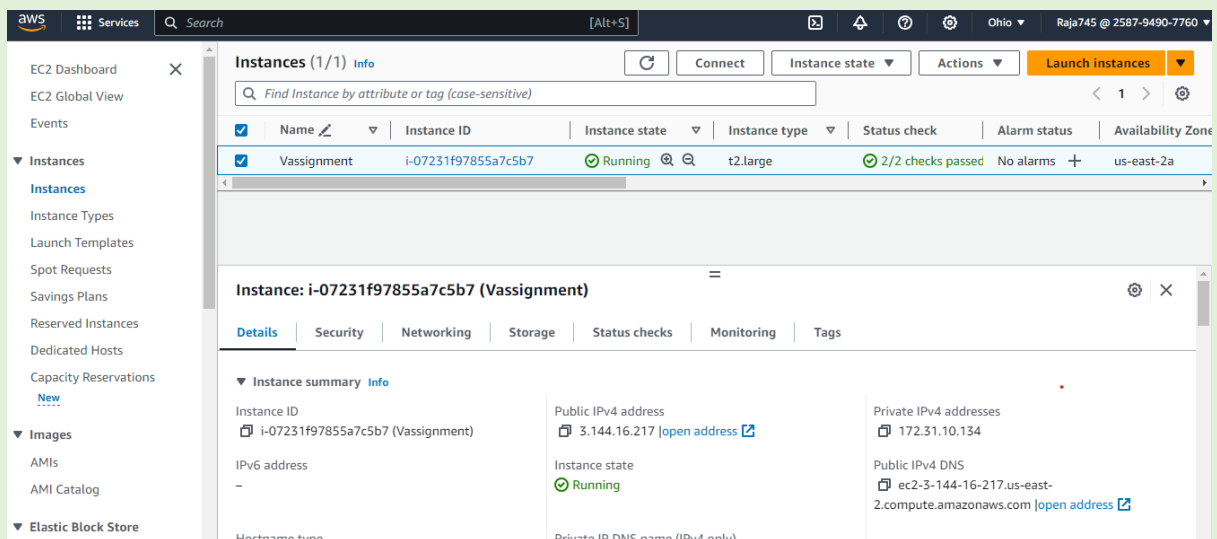
**Date:** 22-12-23

**Topic:** BY below URL Please do the following things

<https://github.com/Venna12/dockerjenkin.git>

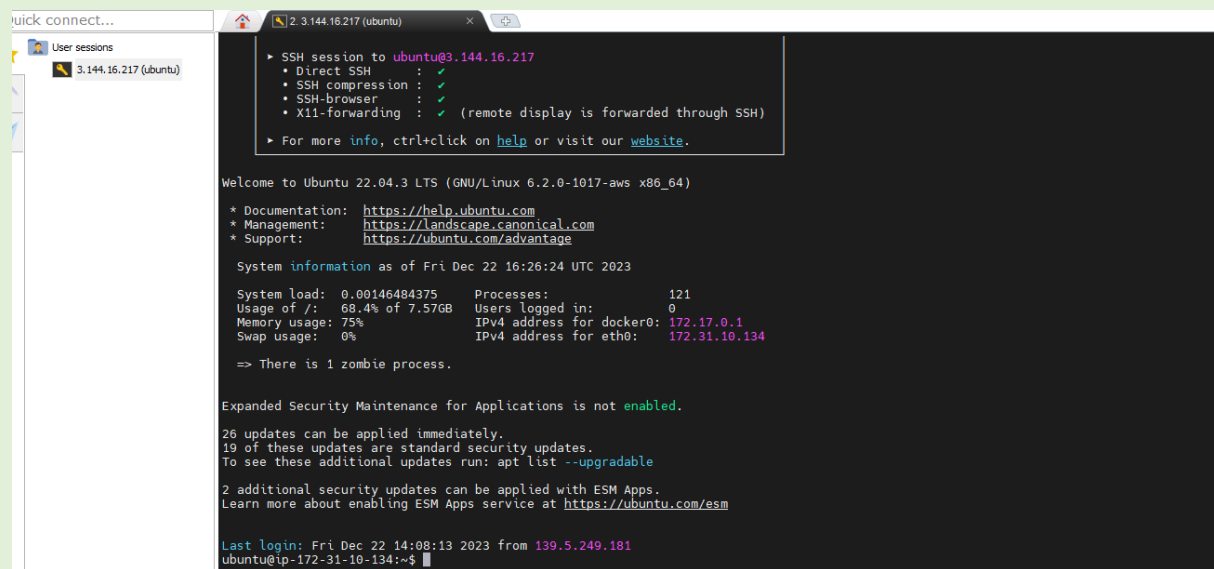
- 1) by using sonarqube do code quality analysis
- 2) store in nexus artefacts
- 3) deploy in tomcat.

## AWS:



By using the AWS EC2, instance is created and installed the Jenkins, SonarQube, Nexus, and Tomcat in single server.

## SERVER CONECTIONS:



```
quick connect...
User sessions
3.144.16.217 (ubuntu)

SSH session to ubuntu03.144.16.217
• Direct SSH : ✓
• SSH compression : ✓
• SSH-browser : ✓
• X11-forwarding : ✓ (remote display is forwarded through SSH)
• For more info, ctrl+click on help or visit our website.

Welcome to Ubuntu 22.04.3 LTS (GNU/Linux 6.2.0-1017-aws x86_64)

* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage

System information as of Fri Dec 22 16:26:24 UTC 2023

System load: 0.00146484375 Processes: 121
Usage of /: 68.4% of 7.57GB Users logged in: 0
Memory usage: 75% IPv4 address for docker0: 172.17.0.1
Swap usage: 0% IPv4 address for eth0: 172.31.10.134

=> There is 1 zombie process.

Expanded Security Maintenance for Applications is not enabled.

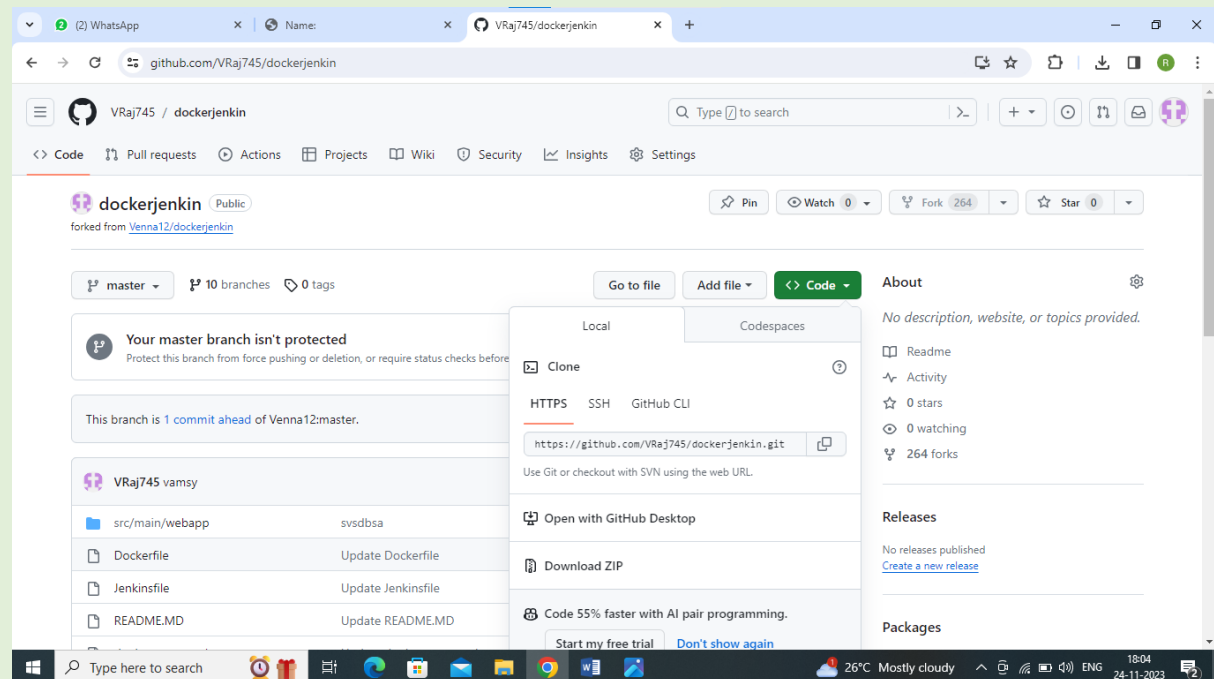
26 updates can be applied immediately.
19 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

2 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

Last login: Fri Dec 22 14:08:13 2023 from 139.5.249.181
ubuntu@ip-172-31-10-134:~$
```

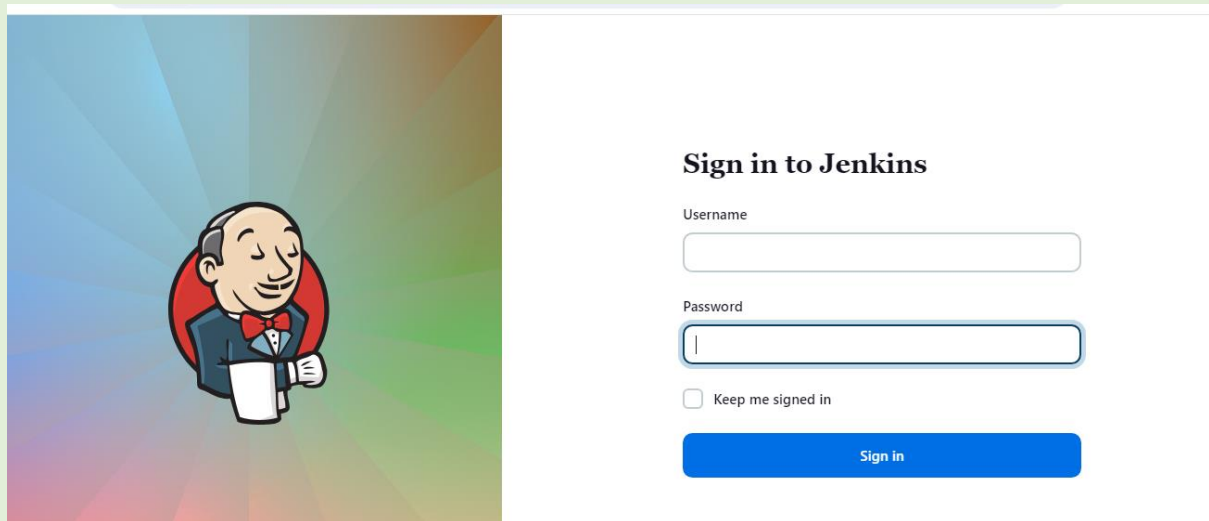
Above fig shows that the connection of instance in mobaxterm, which is used to install the jenkins, tomcat and required packages and more.

## GITHUB:

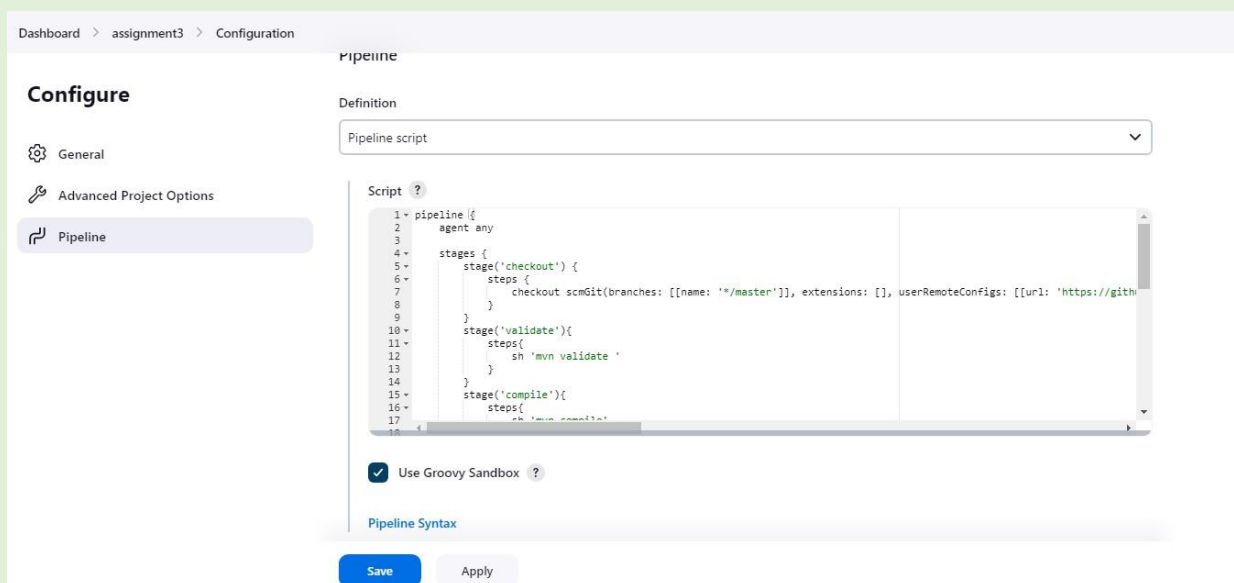


Above fig shows that the git repository that which is used to deploy the webapp in the tomcat server. It is forked by the <https://github.com/Venna12/dockerjenkin.git>.

## JENKINS:



This is the Sign page for Jenkins.



Above shows the pipeline job creation in the Jenkins.

### Pipeline code:

```
pipeline {  
    agent any  
  
    stages {  
        stage('checkout') {  
            steps {
```

```
        checkout scmGit(branches: [[name: '*/master']], extensions: [],
userRemoteConfigs: [[url: 'https://github.com/VRaj745/dockerjenkin.git']])
    }
}
stage('validate'){
    steps{
        sh 'mvn validate '
    }
}
stage('compile'){
    steps{
        sh 'mvn compile'
    }
}
stage('test'){
    steps{
        sh 'mvn test'
    }
}
stage('build'){
    steps{
        sh 'mvn package'
    }
}
stage('Sonarqube'){
    steps{
        sh "mvn clean verify sonar:sonar -
Dsonar.projectKey=dockerjenkins -Dsonar.projectName='dockerjenkins' -
Dsonar.host.url=http://3.144.16.217:9000 -
Dsonar.token=sqp_faa33f1f6c8773e6eeacdc22ff9d407662c6faf9"
    }
}
stage('Nexus artifact'){
```

```

steps{
    nexusArtifactUploader artifacts: [[artifactId: 'java-tomcat-maven-
example', classifier: '', file:
'/var/lib/jenkins/workspace/assignment3/target/java-tomcat-maven-
example.war', type: 'war']], credentialsId: 'nexus123', groupId:
'com.example', nexusUrl: '3.144.16.217:8081', nexusVersion: 'nexus3',
protocol: 'http', repository: 'maven-snapshots', version: '1.0-SNAPSHOT'

    }

}

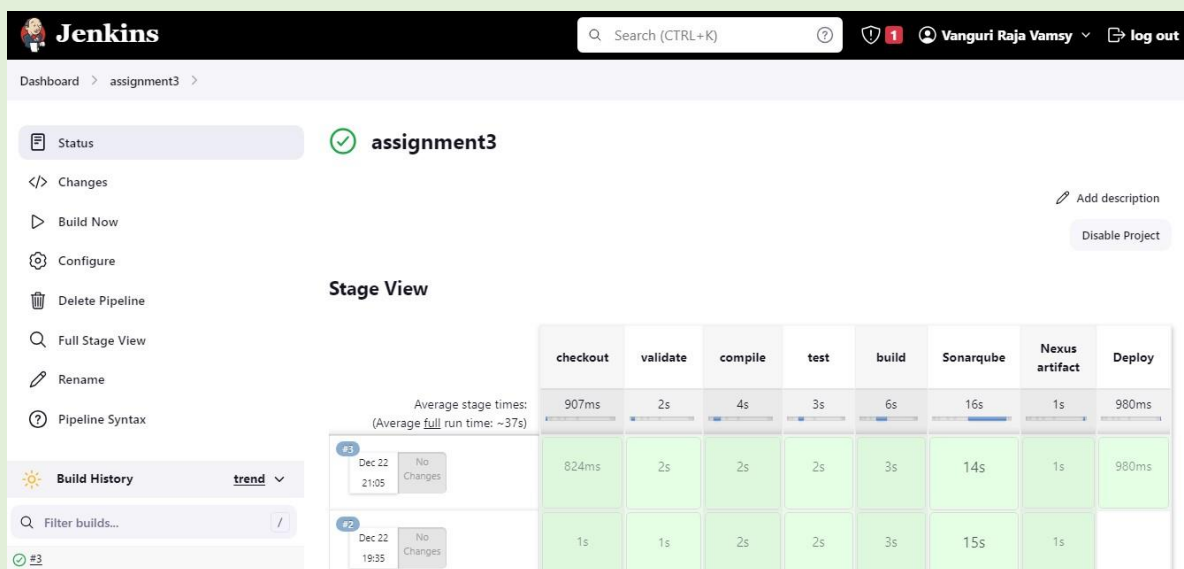
stage('Deploy'){
    steps{
        deploy adapters: [tomcat9(credentialsId: '1cb331cb-9f39-4b21-
b38e-25010a00089d', path: '', url: 'http://3.144.16.217:8086')],
contextPath: 'assignment3', war: '**/*.war'

    }

}

}

```



This shows the creation and building the pipeline job and it shows the stage view.

Jenkins

Search (CTRL+K) Vanguri Raja Vamsy log out

Dashboard > assignment3 > #3

Status

Changes

Console Output

View as plain text

Edit Build Information

Delete build '#3'

Git Build Data

Restart from Stage

Replay

Pipeline Steps

Workspaces

Previous Build

### Console Output

```
Started by user Vanguri Raja Vamsy
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/assignment3
[Pipeline] {
[Pipeline] stage
[Pipeline] { (checkout)
[Pipeline] checkout
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/assignment3/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/VRaj745/dockerjenkin.git # timeout=10
Fetching upstream changes from https://github.com/VRaj745/dockerjenkin.git
> git --version # timeout=10
> git --version # 'git version 2.34.1'
> git fetch --tags --force --progress -- https://github.com/VRaj745/dockerjenkin.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision be72c4be1aff1be210f97eeb1b10a0f4643b3ba0 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f be72c4be1aff1be210f97eeb1b10a0f4643b3ba0 # timeout=10
Commit message: "Update README.md"
> git rev-list --no-walk be72c4be1aff1be210f97eeb1b10a0f4643b3ba0 # timeout=10
```

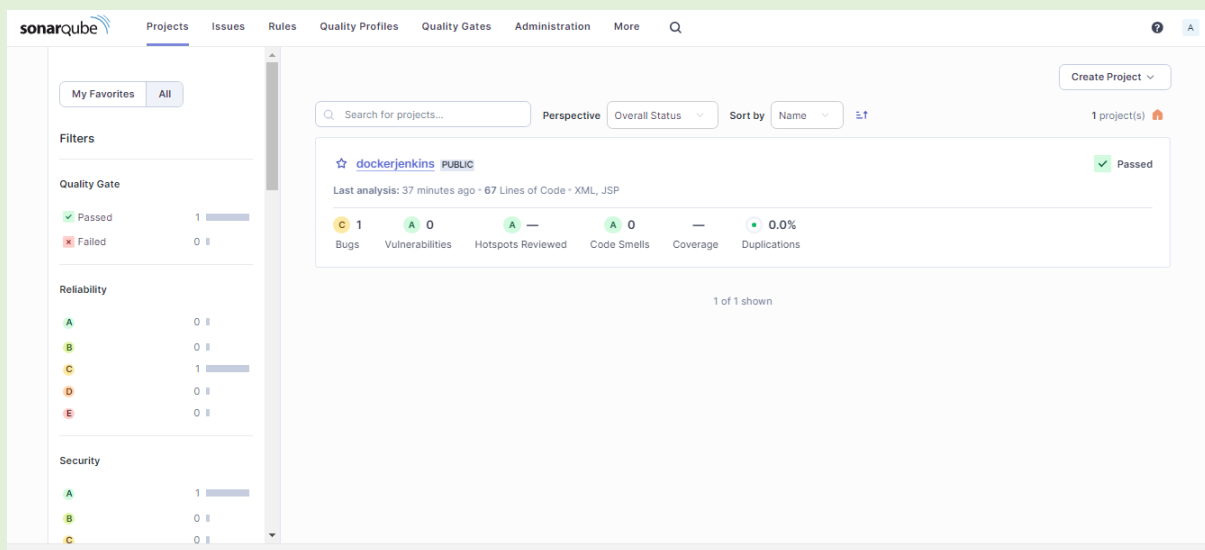
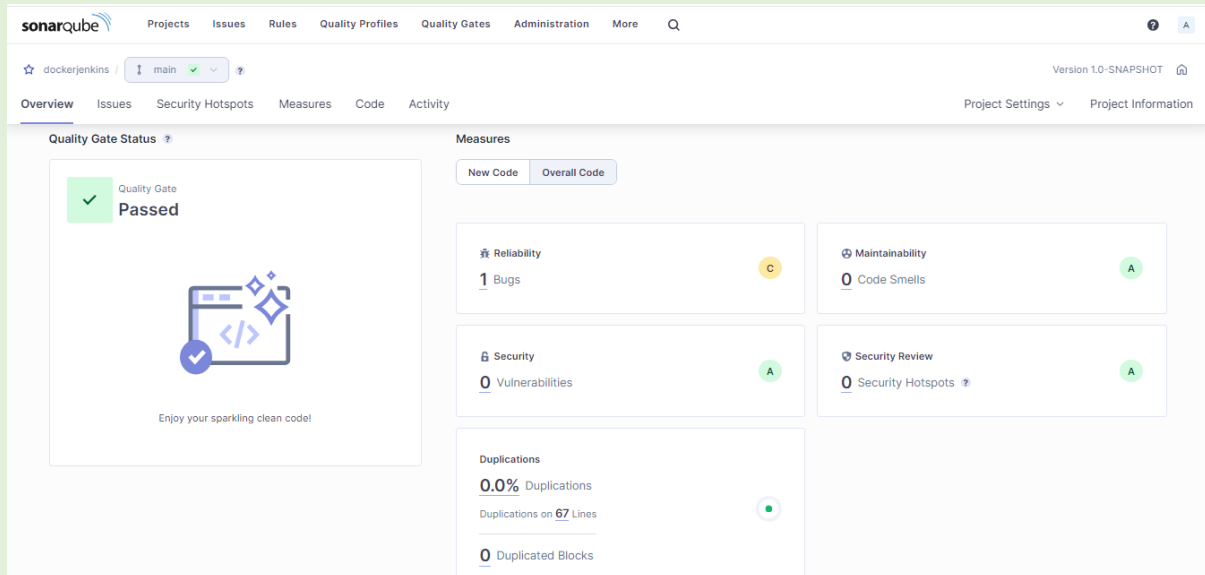
Dashboard > assignment3 > #3

```
Downloading: http://3.144.16.217:8081/repository/maven-snapshots/com/example/java-tomcat-maven-example/1.0-SNAPSHOT/maven-metadata.xml
100 % completed (609 B / 609 B).
Downloaded: http://3.144.16.217:8081/repository/maven-snapshots/com/example/java-tomcat-maven-example/1.0-SNAPSHOT/maven-metadata.xml (609 B at
2.6 KB/s)
Uploading: http://3.144.16.217:8081/repository/maven-snapshots/com/example/java-tomcat-maven-example/1.0-SNAPSHOT/java-tomcat-maven-example-1.0-
20231222.153603-2.war
Uploaded: http://3.144.16.217:8081/repository/maven-snapshots/com/example/java-tomcat-maven-example/1.0-SNAPSHOT/java-tomcat-maven-example-1.0-
20231222.153603-2.war (2.1 KB at 10 KB/s)
Uploading: http://3.144.16.217:8081/repository/maven-snapshots/com/example/java-tomcat-maven-example/1.0-SNAPSHOT/maven-metadata.xml
Uploaded: http://3.144.16.217:8081/repository/maven-snapshots/com/example/java-tomcat-maven-example/1.0-SNAPSHOT/maven-metadata.xml (609 B at 5.5
KB/s)
Uploading artifact java-tomcat-maven-example.war completed.
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Deploy)
[Pipeline] deploy
[DeployPublisher][INFO] Attempting to deploy 1 war file(s)
[DeployPublisher][INFO] Deploying /var/lib/jenkins/workspace/assignment3/target/java-tomcat-maven-example.war to container Tomcat 9.x Remote with
context assignment3
[/var/lib/jenkins/workspace/assignment3/target/java-tomcat-maven-example.war] is not deployed. Doing a fresh deployment.
Deploying [/var/lib/jenkins/workspace/assignment3/target/java-tomcat-maven-example.war]
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

Above figures shoes the **console output** of the pipeline job.

## SONARQUBE:

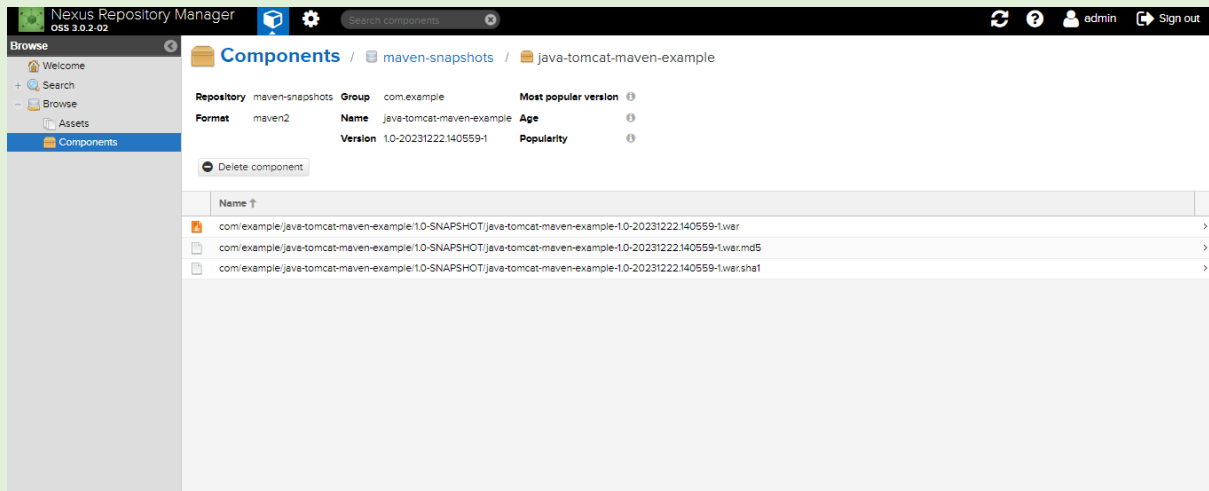
By using the sonarqube we done the code quality analysis. It says us about the details about code which shows the vulnerabilities, bugs etc.



The above fig shows that the Analysis of code.

## NEXUS:

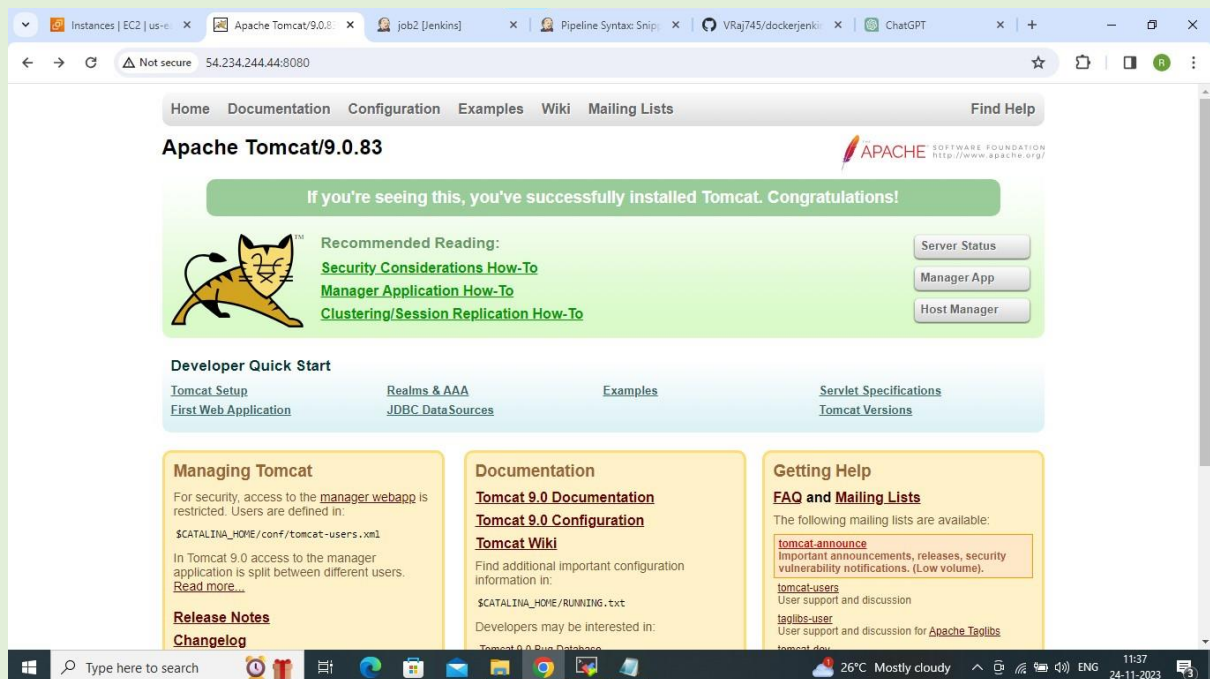
Nexus is a Sonatype Artifactory repository manager [OSS]. It allows you to store, distribute, and retrieve build artifacts whenever it's required. Using Nexus, developers can easily access and deploy build artifacts in an organization from a single location.



Above fig shows the nexus artifacts.



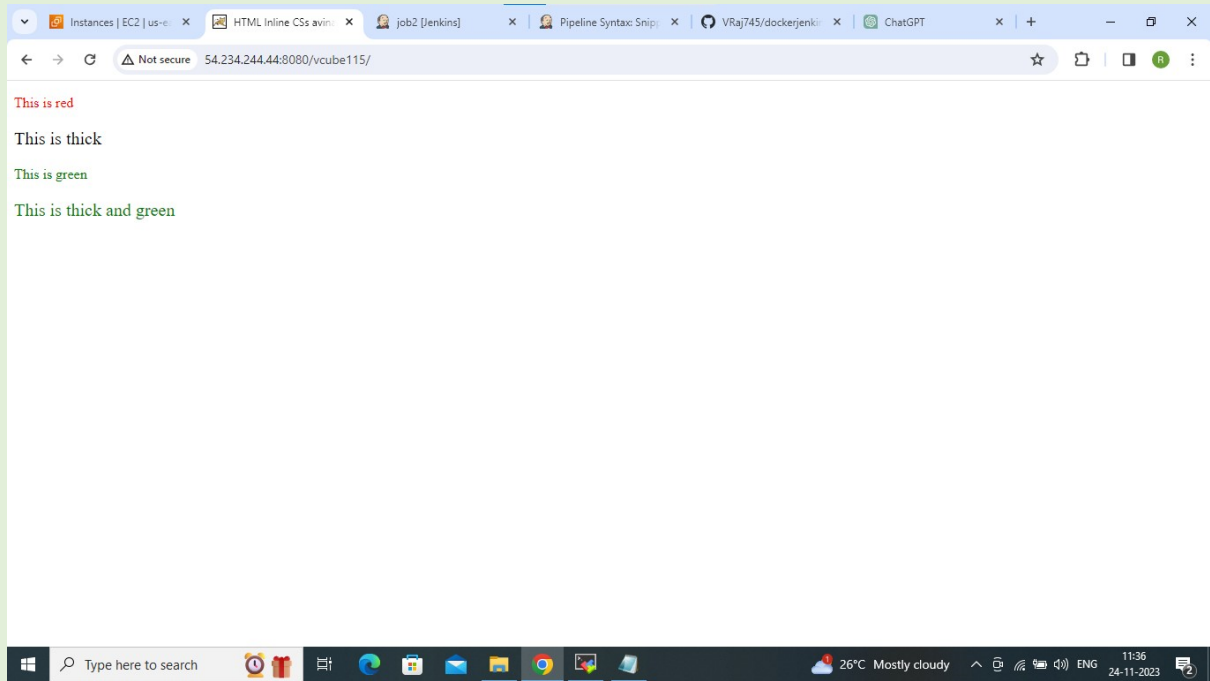
## TOMCAT:



Above fig shows that the open page of the TOMCAT server. By clicking on the manager app button, it takes us into the below view of the web page.

Manager						
List Applications	HTML Manager Help			Manager Help		Server Status
Applications						
Path	Version	Display Name	Running	Sessions	Commands	
/	None specified	Welcome to Tomcat	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes	
/assignment3	None specified	Archetype Created Web Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes	
/docs	None specified	Tomcat Documentation	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes	
/examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes	
/host-manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes	
/manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes	
Deploy						
Deploy directory or WAR file located on server						

In this page we can see the deployed webapp in the list as 'assignment'.



This is the Final output of the assignment.