

TASK 5

Step 1: Clone the Git Repository

Clone the repository

```
git clone https://github.com/original-repo/spring-framework.git
```

Change to the project directory

```
cd spring-framework
```

Add your GitHub repository as the remote

```
git remote set-url origin https://github.com/Dhanushree1401/javaproject
```

Push the project to your own repo

```
git push origin main
```

Step 2: Install Maven

Update package lists

```
sudo apt update
```

Install Maven

```
sudo apt install maven -y
```

```
mvn -version
```

Remove existing Maven

```
sudo apt remove maven -y
```

Download the latest Maven version

```
cd /opt
```

```
sudo wget https://downloads.apache.org/maven/maven-
```

```
3/3.9.6/binaries/apache-maven-3.9.6-bin.tar.gz
```

Extract and move Maven

```
sudo tar -xvzf apache-maven-3.9.6-bin.tar.gz
```

```
sudo mv apache-maven-3.9.6 /opt/maven
```

Set up environment variables

```
echo 'export M2_HOME=/opt/maven' | sudo tee -a /etc/profile.d/maven.sh
```

```
echo 'export PATH=$M2_HOME/bin:$PATH' | sudo tee -a
```

```
/etc/profile.d/maven.sh
```

```
source /etc/profile.d/maven.sh
```

Verify installation:

```
mvn -version
```

```
which mvn
```

If necessary, create a symbolic link:

```
sudo ln -s /opt/maven/bin/mvn /usr/bin/mvn
```

Step 3: Build the Project with Maven

Navigate to the Jenkins workspace and build the project:

```
cd /var/lib/jenkins/workspace/Spring-framework
```

```
# Clean and package the project (skipping tests)
```

```
mvn clean package -DskipTests
```

Step 4: Set Up Jenkins Pipeline

1. Open Jenkins Dashboard → Click New Item → Select Pipeline.

2. Go to Pipeline section and add the following script:

```
pipeline {
  agent any
  environment {
    DOCKER_IMAGE = "dhanushree14/social-app"
    DOCKER_TAG = "latest"
    DOCKER_CREDENTIALS_ID = "docker-hub-creds"
    GITHUB_CREDENTIALS_ID = "github"
    KUBECONFIG = "/var/lib/jenkins/.kube/config"
  }

  stages {
    stage('Checkout Code') {
      steps {
        git credentialsId: GITHUB_CREDENTIALS_ID, url:
'https://github.com/Dhanushree1401/javaproject.git', branch: 'main'
      }
    }

    stage('Build Application') {
      steps {
        script {
          sh '${MAVEN_HOME}/bin/mvn clean package -DskipTests'
        }
      }
    }
  }
}
```

```

    }
}

stage('Run Maven Tests') {
    steps {
        script {
            try {
                sh 'mvn test'
            } catch (Exception e) {
                echo "Tests failed, but proceeding..."
            }
        }
    }
}

stage('Build Docker Image') {
    steps {
        script {
            sh "docker build -t ${DOCKER_IMAGE}:${DOCKER_TAG} ."
        }
    }
}

stage('Push Docker Image') {
    steps {
        withDockerRegistry([credentialsId: DOCKER_CREDENTIALS_ID, url: ""]) {
            sh "docker push ${DOCKER_IMAGE}:${DOCKER_TAG}"
        }
    }
}

// stage('Deploy to Kubernetes') {
//     steps {
//         script {
//             sh """
//                 chmod +x scripts/deploy.sh
//                 ./scripts/deploy.sh
//             """
//         }
//     }
// }

post {
    success {
        echo "Deployment Successful!"
    }
    failure {
        echo "Deployment Failed!"
    }
}

```

```
}  
}  
}
```

Step 5: Fix Permissions for Jenkins

Ensure Jenkins has the correct permissions:

```
sudo chown -R jenkins:jenkins /var/lib/jenkins/workspace/Spring-framework
```

```
sudo chmod -R 775 /var/lib/jenkins/workspace/Spring-framework
```

Restart Jenkins to apply changes:

```
sudo systemctl restart jenkins
```

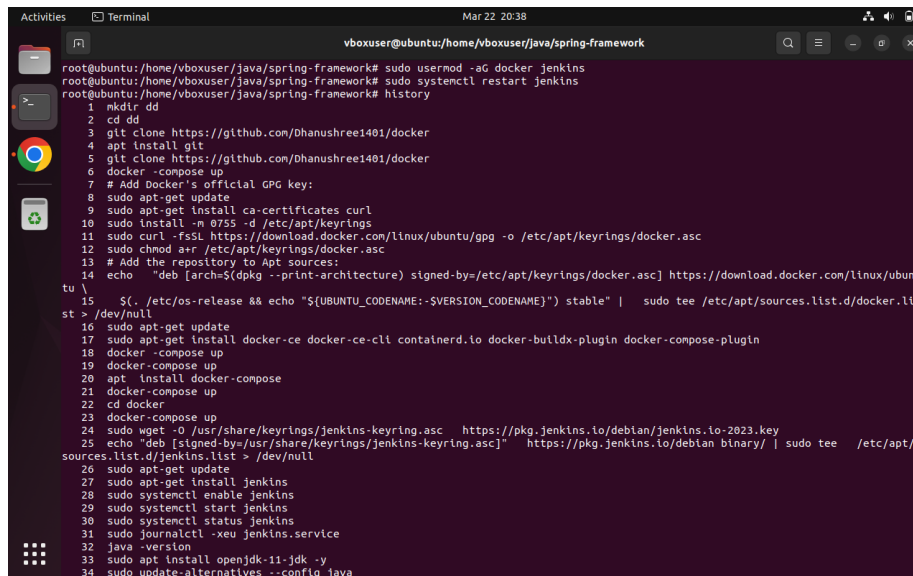
Step 6 : Run and Debug the Pipeline

After setting up everything, go to Jenkins and trigger the build. If there are any errors:

docker images # Check if the image exists

docker ps -a # Check running containers

docker logs <container_id> # View container logs



```
Activities Terminal Mar 22 20:38  
vboxuser@ubuntu:/home/vboxuser/java/spring-framework  
root@ubuntu:/home/vboxuser/java/spring-framework# sudo usermod -aG docker jenkins  
root@ubuntu:/home/vboxuser/java/spring-framework# sudo systemctl restart jenkins  
root@ubuntu:/home/vboxuser/java/spring-framework# history  
1 mkdir dd  
2 cd dd  
3 git clone https://github.com/Dhanushree1401/docker  
4 apt install git  
5 git clone https://github.com/Dhanushree1401/docker  
6 docker -compose up  
7 # Add Docker's official GPG key:  
8 sudo apt-get update  
9 sudo apt-get install ca-certificates curl  
10 sudo install -m 0755 -d /etc/apt/keyrings  
11 sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc  
12 sudo chmod a+r /etc/apt/keyrings/docker.asc  
13 # Add the repository to Apt sources:  
14 echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu  
tu \n  
15 $(. /etc/os-release && echo "${UBUNTU_CODENAME:-$VERSION_CODENAME}") stable" | sudo tee /etc/apt/sources.list.d/docker.li  
st > /dev/null  
16 sudo apt-get update  
17 sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin  
18 docker -compose up  
19 docker-compose up  
20 apt install docker-compose  
21 docker-compose up  
22 cd docker  
23 docker-compose up  
24 sudo wget -O /usr/share/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian/jenkins.io-2023.key  
25 echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" https://pkg.jenkins.io/debian binary/ | sudo tee /etc/apt/  
sources.list.d/jenkins.list > /dev/null  
26 sudo apt-get update  
27 sudo apt-get install jenkins  
28 sudo systemctl enable jenkins  
29 sudo systemctl start jenkins  
30 sudo systemctl status jenkins  
31 sudo journalctl -xeu jenkins.service  
32 java -version  
33 sudo apt install openjdk-11-jdk -y  
34 sudo update-alternatives --config java
```

```
Activities Terminal Mar 22 20:38
vboxuser@ubuntu:/home/vboxuser/java/spring-framework

75 sudo apt update
76 sudo apt install openjdk-17-jdk -y
77 sudo systemctl status jenkins
78 sudo systemctl restart jenkins
79 sudo systemctl status jenkins
80 sudo cat /var/lib/jenkins/secrets/initialAdminPassword
81 cd java_project
82 mkdir java
83 cd java
84 mkdir spring-framework
85 cd spring-framework
86 git clone https://github.com/Jervinjena/spring-framework.git
87 wget https://dlcdn.apache.org/maven/maven-3/3.9.9/binaries/apache-maven-3.9.9-bin.tar.gz
88 sudo systemctl restart jenkins
89 mvn -version
90 mvn -version
91 echo 'export PATH=$PATH:/opt/maven/bin' | sudo tee -a /etc/profile
92 source /etc/profile
93 sudo systemctl restart jenkins
94 sudo usermod -aG docker jenkins
95 sudo systemctl restart docker
96 sudo usermod -aG docker jenkins
97 sudo systemctl restart docker
98 sudo nano /etc/environment
99 which mvn
100 source /etc/environment
101 sudo -u jenkins mvn -version
102 which mvn
103 sudo nano /etc/environment
104 source /etc/environment
105 ls -l /opt/maven/bin/mvn
106 sudo nano /etc/default/jenkins
107 source /etc/default/jenkins
108 sudo systemctl restart jenkins
109 sudo -u jenkins /opt/maven/bin/mvn -version
110 which mvn
111 which mvn
112 sudo -u jenkins /opt/maven/bin/mvn -version
113 sudo -u jenkins env | grep MAVEN
114 docker info
```

```
Activities Terminal Mar 22 20:44
vboxuser@ubuntu:/home/vboxuser/java/spring-framework

93 source /etc/profile
94 sudo systemctl restart jenkins
95 sudo usermod -aG docker jenkins
96 sudo systemctl restart docker
97 sudo usermod -aG docker jenkins
98 sudo systemctl restart docker
99 which mvn
100 source /etc/environment
101 sudo -u jenkins mvn -version
102 which mvn
103 sudo nano /etc/environment
104 source /etc/environment
105 ls -l /opt/maven/bin/mvn
106 sudo nano /etc/default/jenkins
107 source /etc/default/jenkins
108 sudo systemctl restart jenkins
109 sudo -u jenkins /opt/maven/bin/mvn -version
110 which mvn
111 which mvn
112 sudo -u jenkins /opt/maven/bin/mvn -version
113 sudo -u jenkins env | grep MAVEN
114 docker info
115 sudo usermod -aG docker jenkins
116 sudo systemctl restart jenkins
117 history
root@ubuntu:/home/vboxuser/java/spring-framework# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
root@ubuntu:/home/vboxuser/java/spring-framework# docker ps -a
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS   NAMES
98c32c284b3   docker_grafana   "/run.sh"   9 hours ago   Exited (0) 9 hours ago   ports   grafana
3d6d9b1eb611   docker_prometheus   "/bin/prometheus --c-"   9 hours ago   Exited (0) 9 hours ago   ports   prometheus
root@ubuntu:/home/vboxuser/java/spring-framework# docker images
REPOSITORY    TAG       IMAGE ID   CREATED   SIZE
dhanushree14/social-app   latest   7d10ec842994   2 hours ago   563MB
<none>         <none>    8a62aa043ef6   2 hours ago   563MB
<none>         <none>    d837e93fa811   3 hours ago   563MB
docker_prometheus   latest   0c41ead2a2ae   9 hours ago   271MB
docker_grafana      latest   92c2c98df364   22 months ago   309MB
root@ubuntu:/home/vboxuser/java/spring-framework#
```

Activities Google Chrome Mar 22 18:28

Files (no subject) - dhanushree x Linux x Docker Home x t5 #14 Console - Jenkins x

localhost:8080/job/t5/14/console

Jenkins

Dashboard > t5 > #14

- Status
- Changes
- Console Output
- Edit Build Information
- Timings
- Git Build Data
- Pipeline Overview
- Pipeline Console
- Thread Dump
- Pause/resume
- Replay
- Pipeline Steps
- Workspaces
- Previous Build

Console Output

Started by user **Dhanushree R R**

[Pipeline] Start of Pipeline

[Pipeline] node

Running on **Jenkins** in /var/lib/jenkins/workspace/t5

[Pipeline] {

[Pipeline] withEnv

[Pipeline] {

[Pipeline] stage

[Pipeline] { (Checkout Code)

[Pipeline] git

The recommended git tool is: NONE

using credential github

> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/t5/.git # timeout=10

Fetching changes from the remote Git repository

> git config remote.origin.url https://github.com/Dhanushree1401/javaproject.git # timeout=10

Fetching upstream changes from https://github.com/Dhanushree1401/javaproject.git

> git --version # 'git version 2.34.1'

using GIT_ASKPASS to set credentials

> git fetch --tags --force --progress --

```
Activities Google Chrome Mar 22 18:29
(no subject) - dhanushree x Linux Docker Home t5 #14 Console - Jenkins +
localhost:8080/job/t5/14/console

Dashboard > t5 > #14

[INFO] --- compiler:3.11.0:testCompile (default-testCompile) @ spring-framework-petclinic ---
[INFO] Changes detected - recompiling the module! :dependency
[INFO] Compiling 11 source files with javac [debug target 17] to target/test-classes
[INFO]
[INFO] --- surefire:3.2.3:test (default-test) @ spring-framework-petclinic ---
[INFO] Tests are skipped.
[INFO]
[INFO] --- jacoco:0.8.11:report (report) @ spring-framework-petclinic ---
[INFO] Skipping JaCoCo execution due to missing execution data file.
[INFO]
[INFO] --- war:3.4.0:war (default-war) @ spring-framework-petclinic ---
[INFO] Packaging webapp
[INFO] Assembling webapp [spring-framework-petclinic] in
[/var/lib/jenkins/workspace/t5/target/petclinic]
[INFO] Processing war project
[INFO] Copying webapp resources [/var/lib/jenkins/workspace/t5/src/main/webapp]
[INFO] Building war: /var/lib/jenkins/workspace/t5/target/petclinic.war
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 9.143 s
[INFO] Finished at: 2025-03-22T18:18:51+05:30
[INFO] -----
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
```

```
Activities Google Chrome Mar 22 18:30
(no subject) - dhanushree x Linux Docker Home t5 #14 Console - Jenkins +
localhost:8080/job/t5/14/console

Dashboard > t5 > #14

#6 [2/2] COPY target/*.war /usr/local/tomcat/webapps/ROOT.war
#6 DONE 1.0s

#7 exporting to image
#7 exporting layers
#7 exporting layers 0.5s done
#7 writing image sha256:7d10ec842994943549f8401164283379a704c6d59f17bbb43404c63a991a9587
0.0s done
#7 naming to docker.io/dhanushree14/social-app:latest 0.0s done
#7 DONE 0.6s
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Push Docker Image)
[Pipeline] withDockerRegistry
$ docker login -u dhanushree14 -p ***** https://index.docker.io/v1/
WARNING! Using --password via the CLI is insecure. Use --password-stdin.

WARNING! Your credentials are stored unencrypted in
'/var/lib/jenkins/workspace/t5@tmp/b32df2b1-565c-4752-8395-735c581ca091/config.json'.
Configure a credential helper to remove this warning. See
https://docs.docker.com/go/credential-store/

Login Succeeded
rm -rf /tmp/t5-build
```

```
Activities Google Chrome Mar 22 18:30
(no subject) - dhanushree x Linux Docker Home t5 #14 Console - Jenkins +
localhost:8080/job/t5/14/console

Dashboard > t5 > #14

Login Succeeded
[Pipeline] {
[Pipeline] sh
+ docker push dhanushree14/social-app:latest
The push refers to repository [docker.io/dhanushree14/social-app]
306261676a0b: Preparing
5f70bf18a086: Preparing
6fdbf02a6a33: Preparing
5f70bf18a086: Preparing
49c1bc2daeb: Preparing
4e5b554b7345: Preparing
39cf0ac89a5a: Preparing
f844dcf94898: Preparing
3359bc3d7a6a: Preparing
4b7c01ed0534: Preparing
3359bc3d7a6a: Waiting
4b7c01ed0534: Waiting
f844dcf94898: Waiting
39cf0ac89a5a: Waiting
4e5b554b7345: Layer already exists
6fdbf02a6a33: Layer already exists
5f70bf18a086: Layer already exists
49c1bc2daeb: Layer already exists
39cf0ac89a5a: Layer already exists
3359bc3d7a6a: Layer already exists
f844dcf94898: Layer already exists
4b7c01ed0534: Mounted from library/tomcat
```

Activities Google Chrome Mar 22 18:30

localhost:8080/job/t5/14/console

Dashboard > t5 > #14


```
48cb1bc2daeb: Layer already exists
3ac19ac0a2a0: Layer already exists
3359bc3d7a6a: Layer already exists
f844dcf94898: Layer already exists
4b7c01ed0534: Mounted from library/tomcat
306261676a0b: Retrying in 5 seconds
306261676a0b: Retrying in 4 seconds
306261676a0b: Retrying in 3 seconds
306261676a0b: Retrying in 2 seconds
306261676a0b: Retrying in 1 second
306261676a0b: Pushed
latest: digest: sha256:48bd475633feca24ace291df36f72c1b3b7c8a00840070439b7566e2ab9bb8da
size: 2413
[Pipeline] }
[Pipeline] // withDockerRegistry
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
Deployment Successful!
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```

Activities Google Chrome Mar 22 20:36

localhost:8080/job/t5/14/

Jenkins

Dashboard > t5 > #14

Status  #14 (Mar 22, 2025, 6:18:36 PM) Add description Keep this build forever

</> Changes

Console Output

Edit Build Information

Delete build '#14'

Timings

Git Build Data

Pipeline Overview

Pipeline Console

Restart from Stage

Replay

Pipeline Steps

Workspaces

Started by user [Dhanushree R R](#) Started 2 hr 16 min ago Took 7 min 3 sec

This run spent:

- 29 ms waiting;
- 7 min 3 sec build duration;
- 7 min 3 sec total from scheduled to completion.

Revision: 90b9deae8a96dc3964f14192b13dc49fc876a4e6

Repository: <https://github.com/Dhanushree1401/javaproject.git>

- refs/remotes/origin/main

No changes.

localhost:8080/job/t5/14/timings