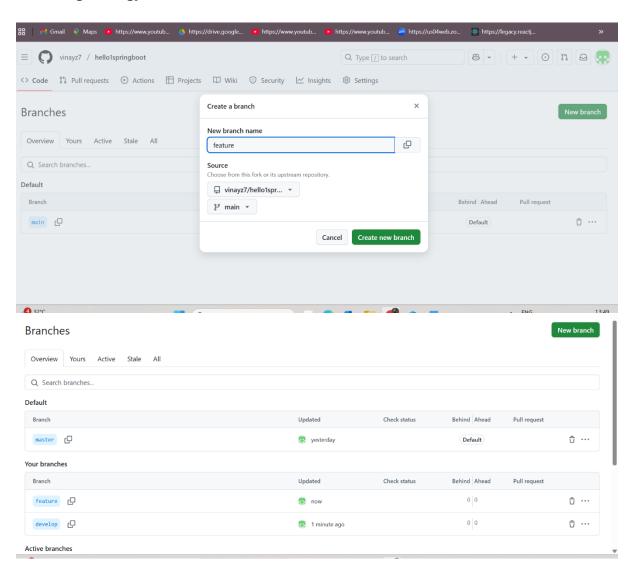
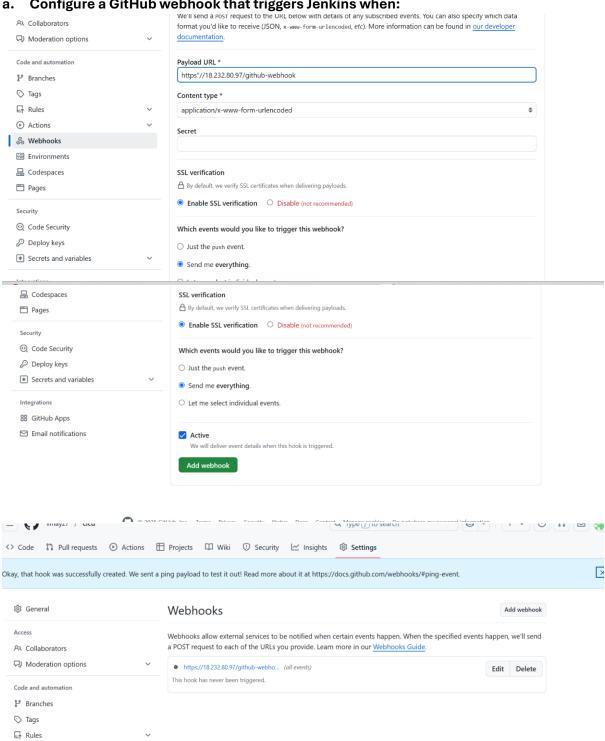
## I. Branching Strategy and Execution Rules



## II. **Webhook Integration**

Actions

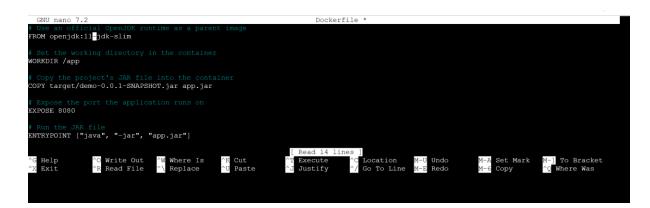
a. Configure a GitHub webhook that triggers Jenkins when:



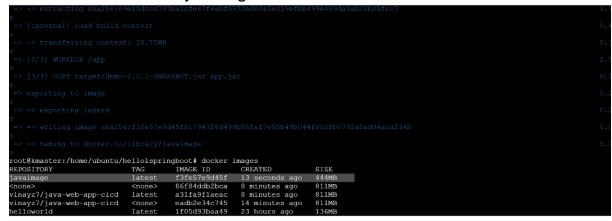
- III. Building Java Code with Maven
- a. Compile the application using Maven.
- b. Generate .jar file as the build artifact.

```
Running com.example.demo.Hello1ApplicationTests
[INEO] Nunning com.example.demo.HellolApplicationTests
08:47:46.960 [main] INFO org.springframework.test.context.support.AnnotationConfigContextLoaderUtils -- Could not detect default configuration classes for test class [com.example.demo.HellolApplicationTests]: HellolApplicationTests does not declare any static, non-private, non-final, nested classes annotated with @Configuration.
08:47:46.075 [main] INFO org.springframework.boot.test.context.SpringBootTestContextBootstrapper -- Found @SpringBootConfiguration com.example.demo.HellolApplication for test class com.example.demo.HellolApplicationTests
  025-04-10T08:47:46.805Z INFO 9715
                                                                                                                                                         [hello1] [
                                                                                                                                                                                                                                          main] c.example.demo.HellolApplicationTests : Starting HellolApplicationTe
    1025-04-10709:47:46.8052 INBO 9715 --- [hello1] [ main] c.example.demo.Hello1appilcationTests : Starting Hello1appilcationTests : Starting Hello1appilcationTests : No active profile so g back to 1 default profile: "default" [ main] c.example.demo.Hello1appilcationTests : No active profile so g back to 1 default profile: "default" [ main] c.example.demo.Hello1applicationTests : Started Hello1applic so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : Started Hello1applic so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : Started Hello1applic so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : Started Hello1applic so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for 3.643) [ main] c.example.demo.Hello1applicationTests : No active profile so in 2.207 seconds (process running for
                                                                                                                                                                                                                                                                                                                                                                                                                               : Started HellolApplicationTes
     Σ Φ ② ⑤ United States (N. Virginia) ▼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (3)
                        Results:
                        Tests run: 1, Failures: 0, Errors: 0, Skipped: 0
                       --- maven-jar-plugin:3.4.2:jar (default-jar) @ demo --- Building jar: /home/ubuntu/hellolspringboot/target/demo-0.0.1-SNAPSHOT.jar
                     --- spring-boot-maven-plugin:3.4.4:repackage (repackage) @ demo ---
Replacing main artifact /home/ubuntu/hellolspringboot/target/demo-0.0.1-SNAPSHOT.jar with repackaged archive, adding nested depende
in BOOT-INF/.
The original artifact has been renamed to /home/ubuntu/hellolspringboot/target/demo-0.0.1-SNAPSHOT.jar.original
                        --- maven-install-plugin:3.1.4:install (default-install) @ demo ---
Installing /home/ubuntu/hellolspringboot/pom.xml to /root/.m2/repository/com/example/demo/0.0.1-SNAPSHOT/demo-0.0.1-SNAPSHOT.pom
Installing /home/ubuntu/hellolspringboot/target/demo-0.0.1-SNAPSHOT.jar to /root/.m2/repository/com/example/demo/0.0.1-SNAPSHOT/dem
ORNAPSHOT demo-0.0.1-SNAPSHOT.jar to /root/.m2/repository/com/example/demo/0.0.1-SNAPSHOT/dem
                    .1-SNAPSHOT.jar
                        Total time: 10.008 s
Finished at: 2025-04-10T08:47:51Z
                         aster:/home/ubuntu/hello1springboot#
Cockerfile HELP.md Jenkinsfile deploy.yaml mvnw mvnw.cmd pom.xml service.yaml src target
root@kmaster:/home/ubuntu/hellolspringboot# cd target/
root@kmaster:/home/ubuntu/hellolspringboot/target# 1s
classes demo-0.0.1-SNAPSHOT.jar.original generated-test-sources maven-status
clemo-0.0.1-SNAPSHOT.jar generated-sources maven-archiver surefire-reports
root@kmaster:/home/ubuntu/hellolspringboot/target#
                                                                                                                                                                                                                                                                                                                                                                                                   test-classes
```

- a. Write a Dockerfile with the following specifications:
- i. Base Image: openjdk:11-jre-slim
- ii. Copies the application JAR from the build output.
- iii. Exposes port 8080 (the application port).
- iv. Uses ENTRYPOINT ["java", "-jar", "/app.jar"].



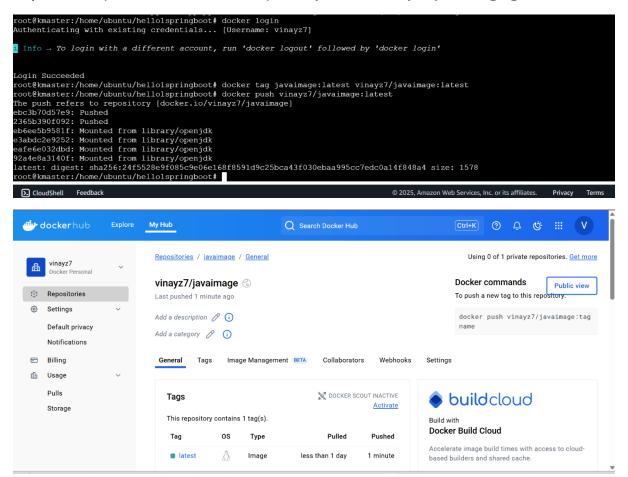
Command: docker build-t javaimage.



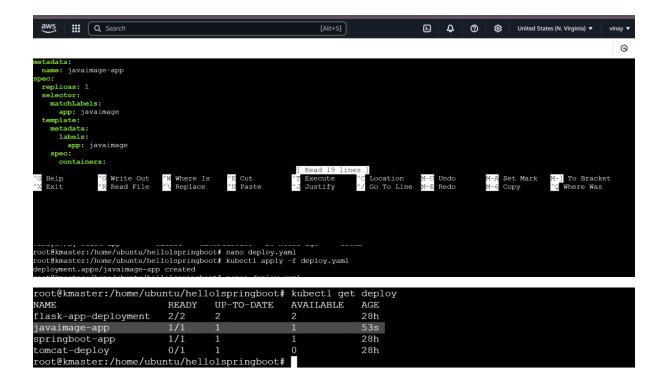
```
-d -it javaimage bash
97836936e3b62c7295e66e3cbe73705be6742834f807139e88d5f8ddclecc716
oot@kmaster:/home/ubuntu/hello1springboot# docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS
oot@kmaster:/home/ubuntu/hello1springboot# docker ps
                                 COMMAND
"java -jar app.jar b..."
"java -jar app.jar b..."
"java -jar app.jar"
"java -jar app.jar"
 ONTAINER ID
                 IMAGE
                                                                CREATED
                                                                                     STATUS
                                                                                                                       PORTS
                                                                                                                                    NAMES
                                                                                     Exited (1) 7 seconds ago
7836936e3b6
                  javaimage
                                                                8 seconds ago
                                                                                                                                    trusting_sutherland
                                                                29 seconds ago
45 seconds ago
                                                                                     Exited (1) 28 seconds ago
Exited (1) 44 seconds ago
Exited (137) 20 hours ago
192a2ac049c
                  javaimage
                                                                                                                                    jovial_snyder
                                                                                                                                    condescending chaplygin
ecda4aecf49
                  javaimage
                                 "python app.py
                                                                23 hours ago
 c9dfca710d3
                 helloworld
                                                                                                                                    flask-container
root@kmaster:/home/ubuntu/hello1springboot#
```

## Docker push:

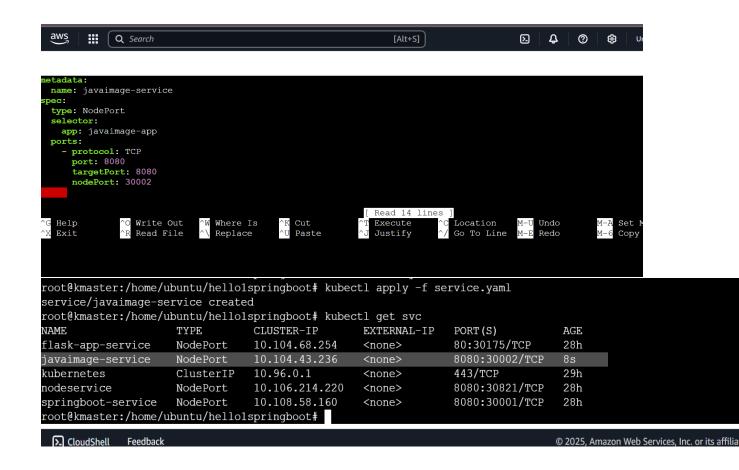
Repo link: https://hub.docker.com/repository/docker/vinayz7/javaimage/general



- VI. Kubernetes Deployment
- a. Write Kubernetes manifest files that include:
- i. deployment.yaml (Defines the app deployment and replicas).
- ii. service.yaml (Exposes the application internally).
- b. Add Kubernetes apply command to Jenkinsfile to enable deployment.

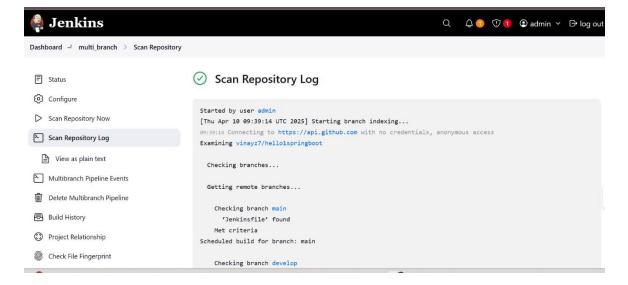


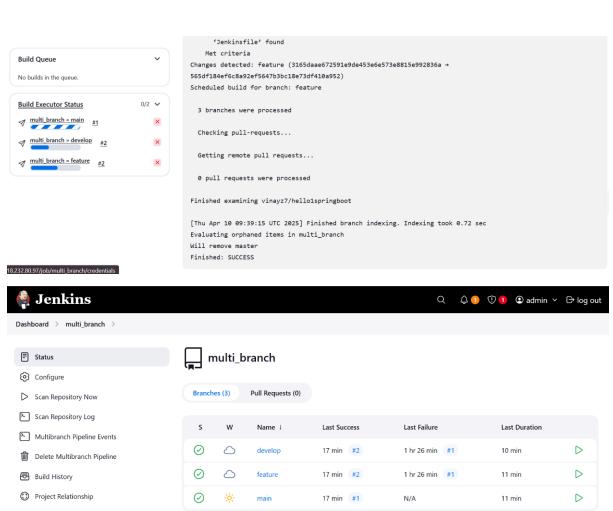
service.yaml (Exposes the application internally).

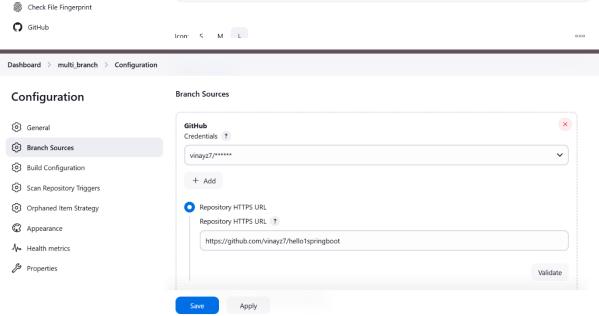


 Implement a CI/CD pipeline using Jenkins multi-branch pipelines, Docker for containerization, GitHub webhooks and Kubernetes for deployment.

Github repo: https://github.com/vinayz7/hello1springboot







```
Jenkins pipe line script:
pipeline {
 agent any
 environment {
   DOCKER_IMAGE = 'vinayz7/hello1springboot:v1'
 }
 stages {
   stage('Clone Repository') {
     steps {
      git url: 'https://github.com/vinayz7/hello1springboot', branch: 'main'
    }
   }
  stage('build mvn for jar') {
     steps {
      sh 'mvn clean install'
    }
   }
  stage('Build Docker Image') {
     steps {
      sh 'docker build -t $DOCKER_IMAGE .'
    }
   }
   stage('Push Docker Image') {
     steps {
      withCredentials([usernamePassword(credentialsId: 'docker-hub-credentials',
usernameVariable: 'DOCKER_USER', passwordVariable: 'DOCKER_PASS')]) {
        sh """
          docker login -u $DOCKER_USER -p $DOCKER_PASS
        sh 'docker push $DOCKER_IMAGE'
      }
```

```
}
                    }
                    stage('Deploy to Kubernetes') {
                               steps {
                                         sh 'kubectl apply -f deploy.yaml'
                             }
                    }
                    stage('Expose Service') {
                               steps {
                                         sh 'kubectl apply -f service.yaml'
                             }
                    }
        }
}

    $\sigma$ Pin

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                  This branch is 12 commits ahead of vilasvarghese/hello1springboot:main .
                                                                                                                                                                                                                                                                                       Contribute ▼
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                                                                                                                                                                                                                                                                                                         565df18 · 2 days ago 🐧 13 Commits
                 vinavz7 Update service.vaml
                  src
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                  P Dockerfile
                                                                                                                                                                             Updated Dockerfile
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                  HELP.md
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                  deploy.yaml
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                   mvnw.cmd
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```

Commit changes

Commit message

Extended description

Add an optional extended description..

O Commit directly to the main branch

Create a new branch for this commit and start a pull request Learn

Cancel Commit changes

Use Control + Shift + m to toggle the tab key moving focus. Alternatively, use esc then tab to move to the next interactive element on the page.

hello1spr

Edit

≡ vinayz7 / hello1springboot

Files

မှု main

src src Dockerfile HELP.md ] Jenkinsfile

deploy.yaml

mvnw mvnw.cmd

pom.xml service.yaml

+ + Q

(6)

About

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Packages

No releases published

No packages published

Publish your first package

No description, website, or topics provided.

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Cancel changes Commit changes...

