1. **Branching Strategy and Execution Rules**

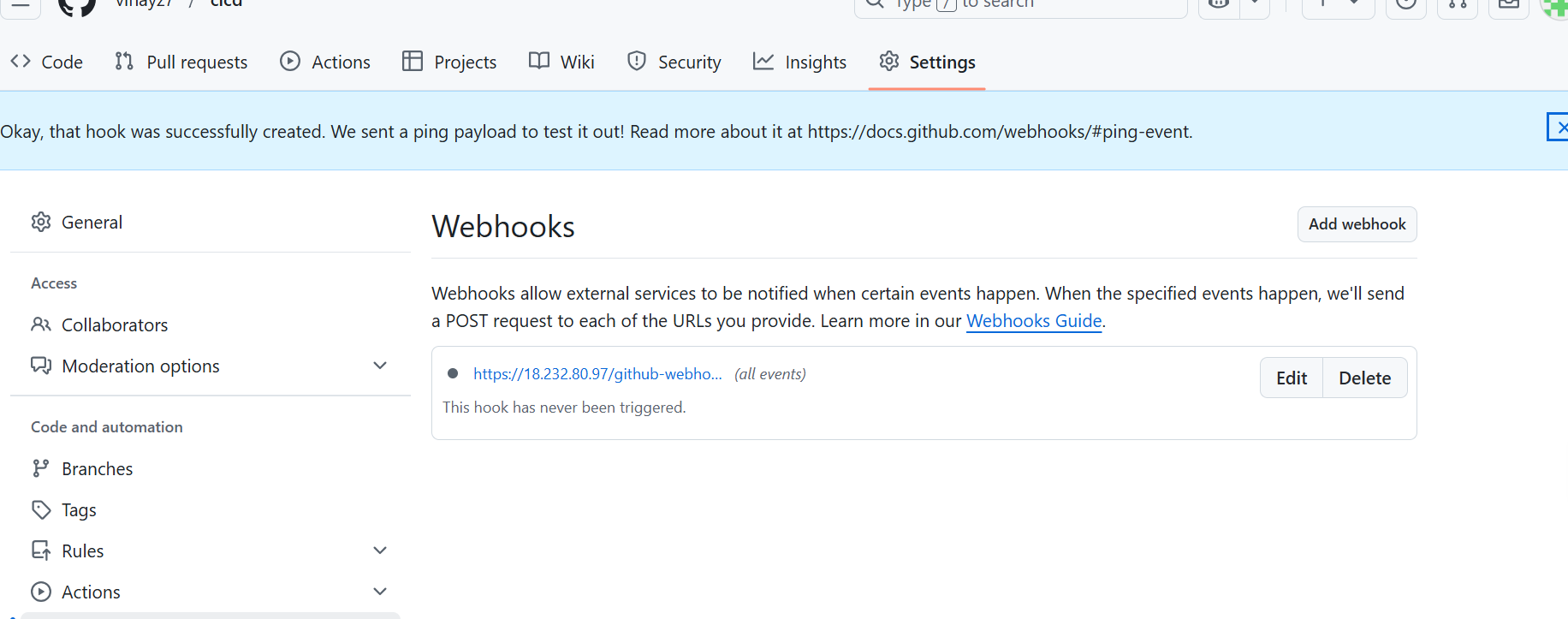
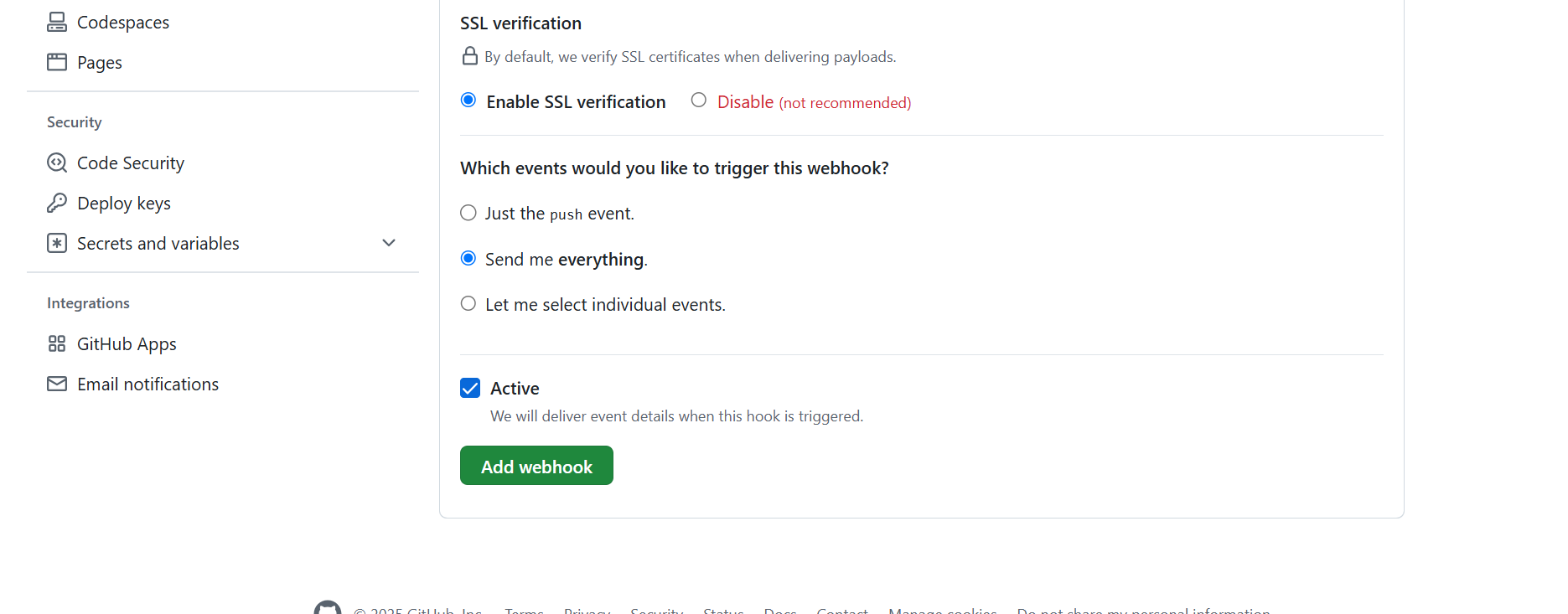
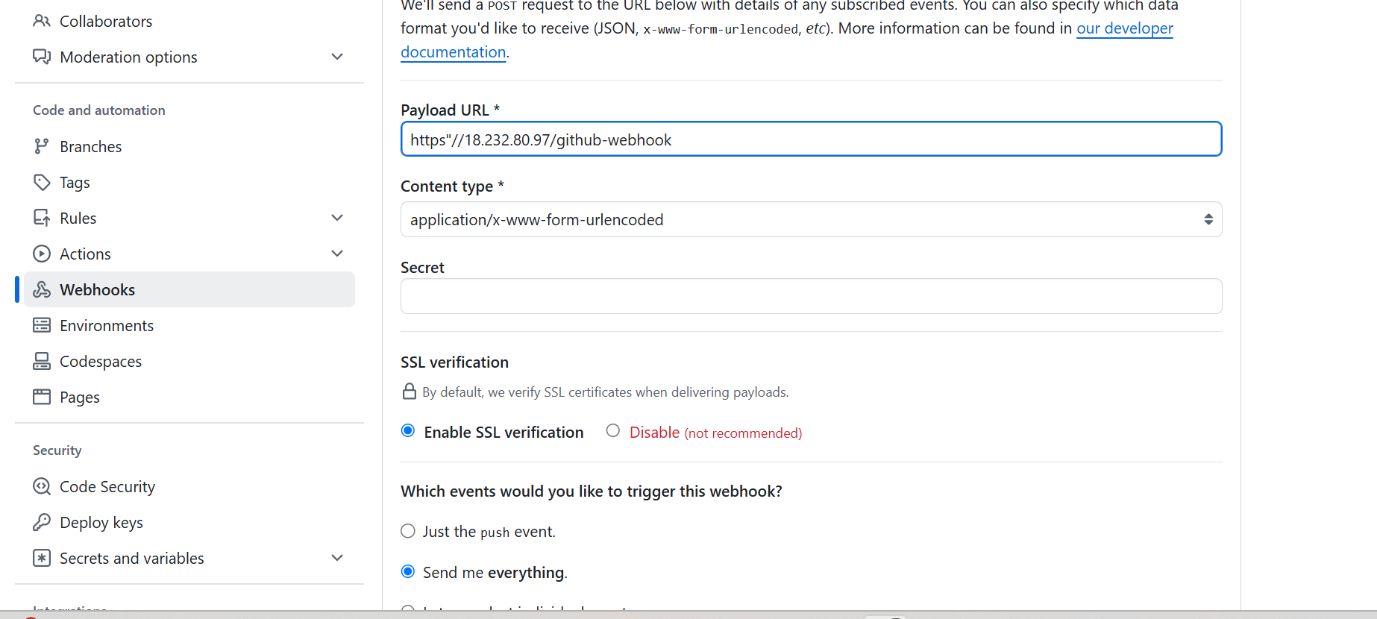
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**II.           Webhook Integration**

**a.     Configure a GitHub webhook that triggers Jenkins when:**

****

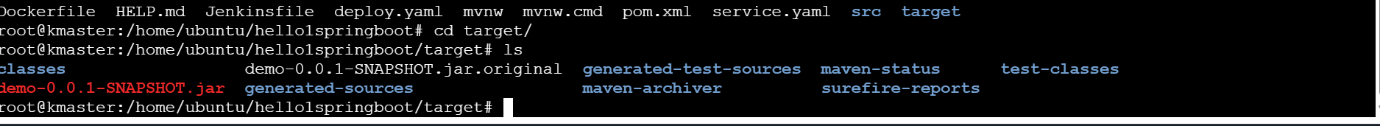
**III.           Building Java Code with Maven**

**a.     Compile the application using Maven.**

**b.     Generate .jar file as the build artifact.**

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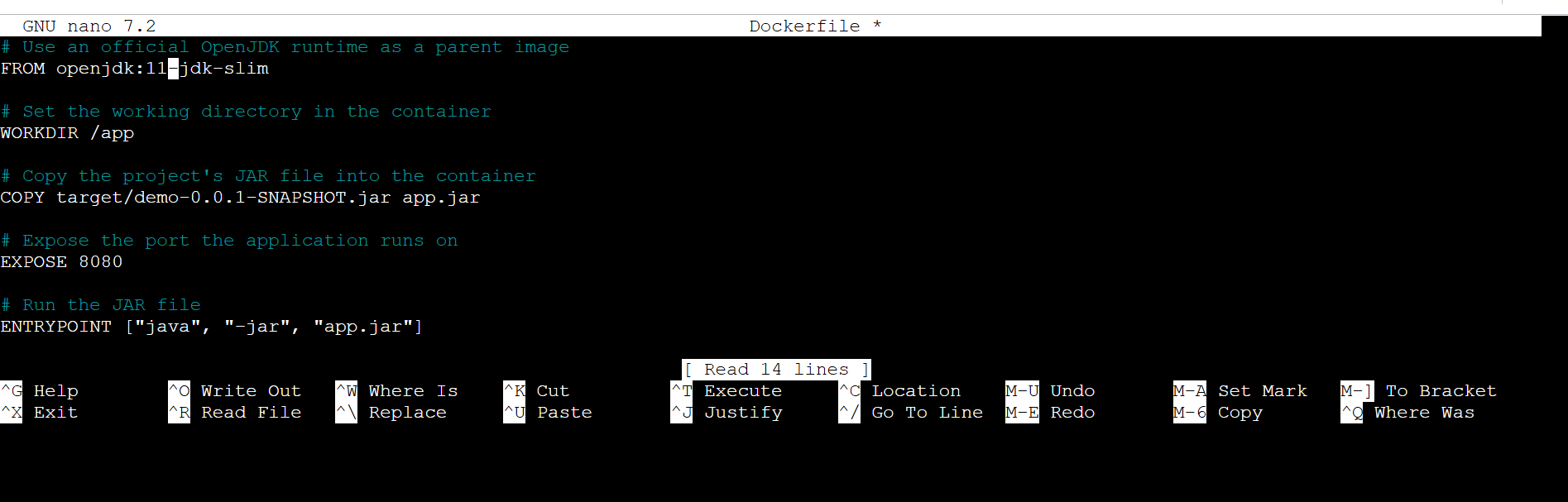
**a.     Write a Dockerfile with the following specifications:**

**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 .**

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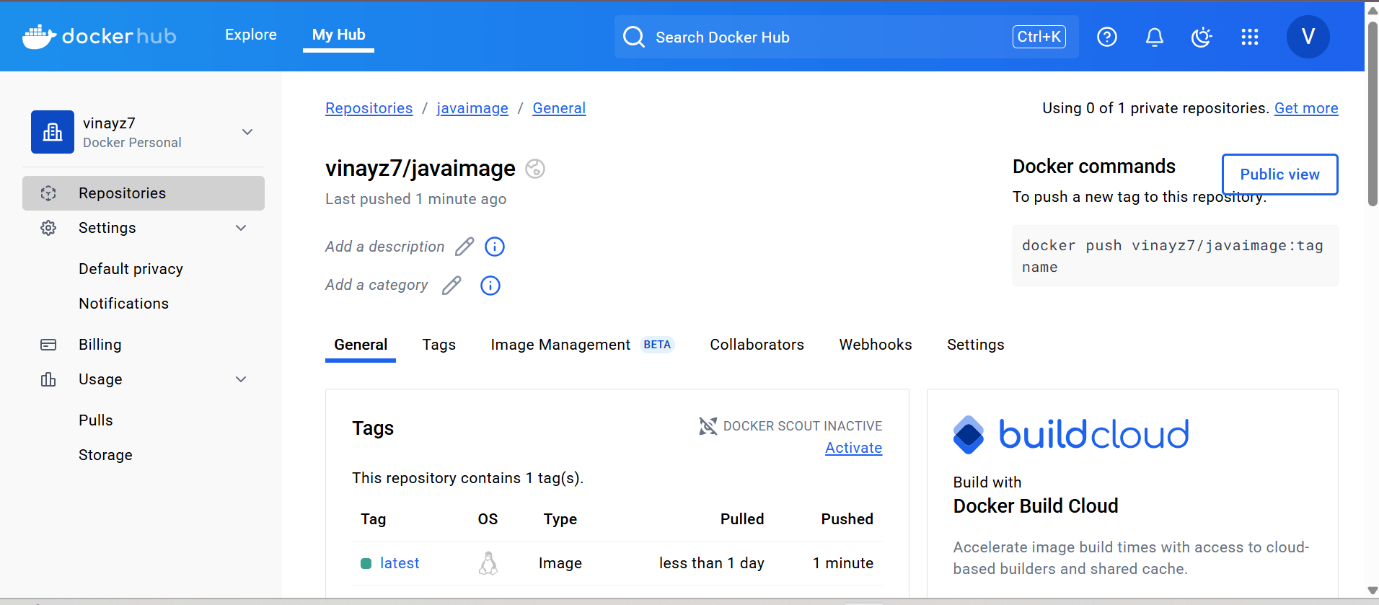
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**Docker push:**

Dochub link: <https://hub.docker.com/repository/docker/vinayz7/javaimage/general>

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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).

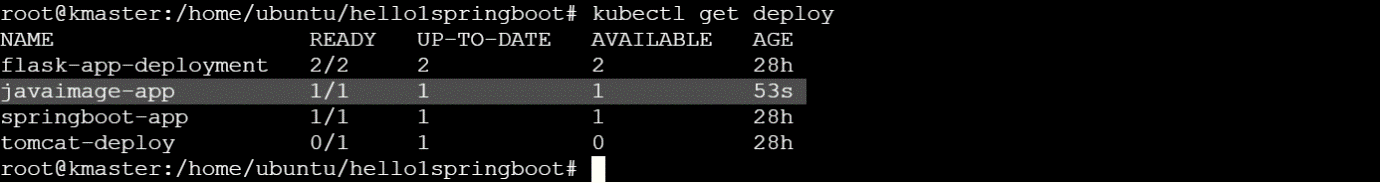
b.     Add Kubernetes apply command to Jenkinsfile to enable deployment.

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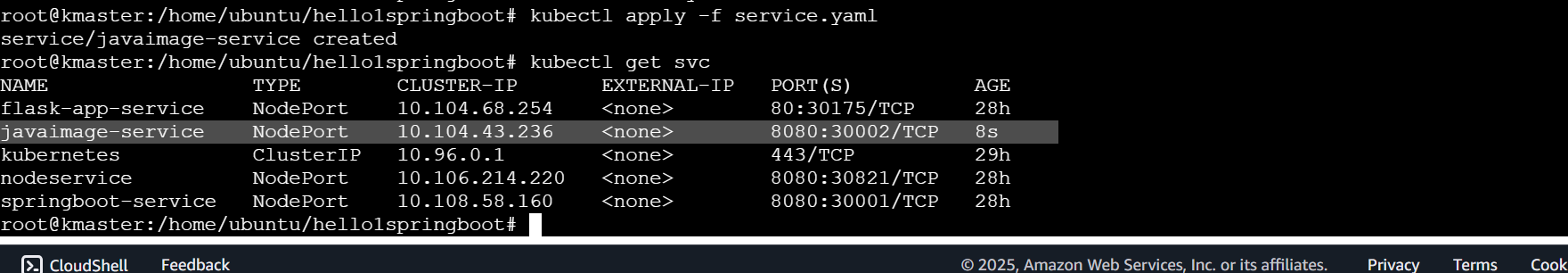
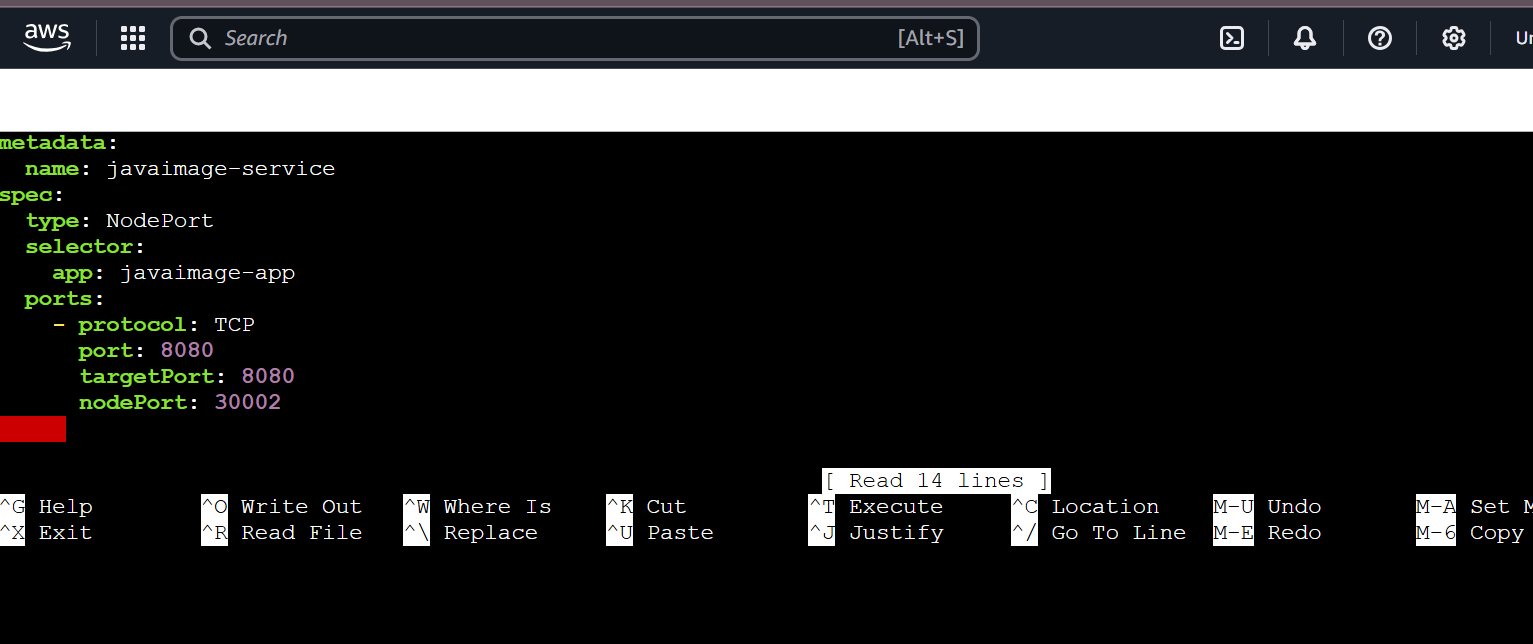
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Kubectl apply -f deploy.yaml



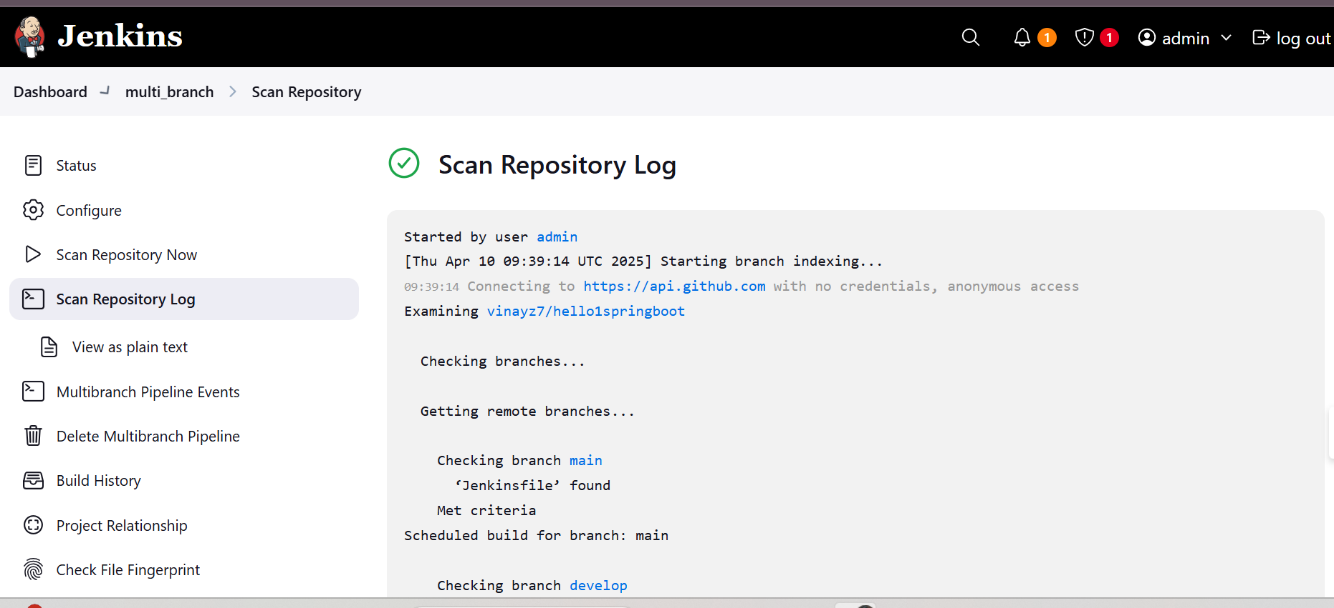


service.yaml (Exposes the application internally).



1. **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](:%20https:/github.com/vinayz7/hello1springboot)





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**Jenkins pipe line script :**

pipeline {

agent any

environment {

DOCKER\_IMAGE = 'vinayz7/javaimage:latest'

}

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'

}

}

}

}

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Webhook-after any changes commints in repo it will automatically triggerA screenshot of a computer

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