ASSIGNMENT 2

CI/CD Pipeline Setup Using Jenkins

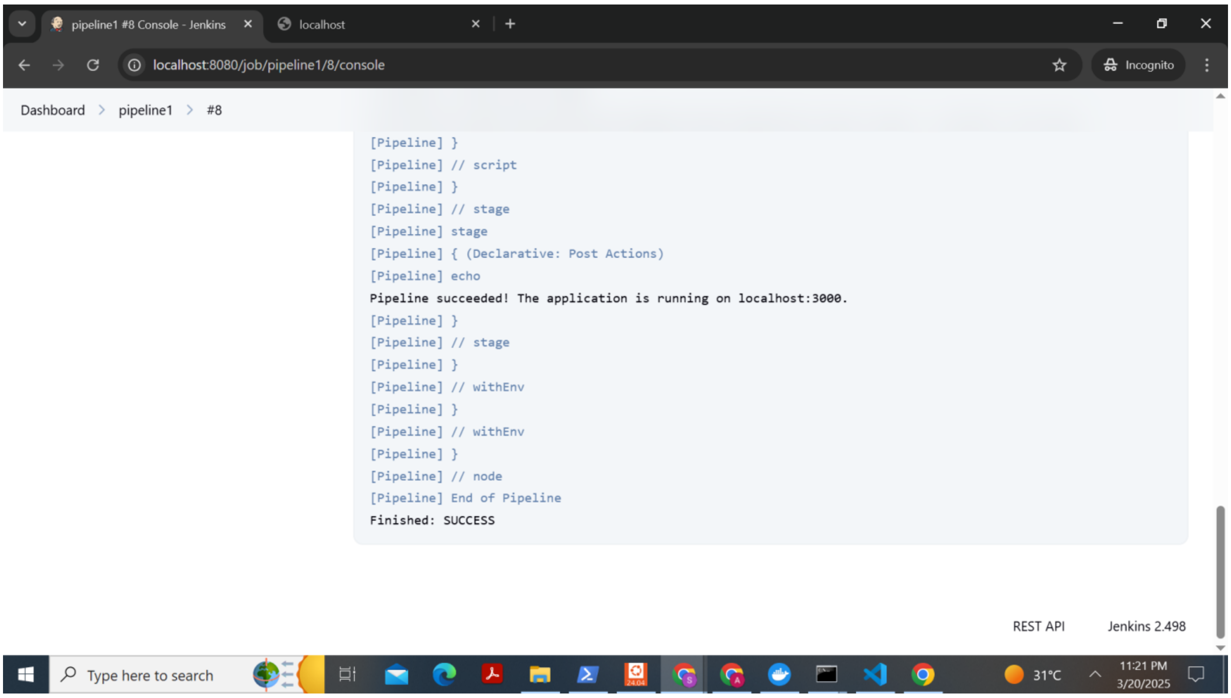
Task Description:

This task involves setting up a Continuous Integration and Continuous Deployment (CI/CD) pipeline using Jenkins to automate the build, test, and push process of a containerized web application. The pipeline integrates GitHub for source code management, Docker for containerization, and a container registry (such as Docker Hub) for storing the container image.

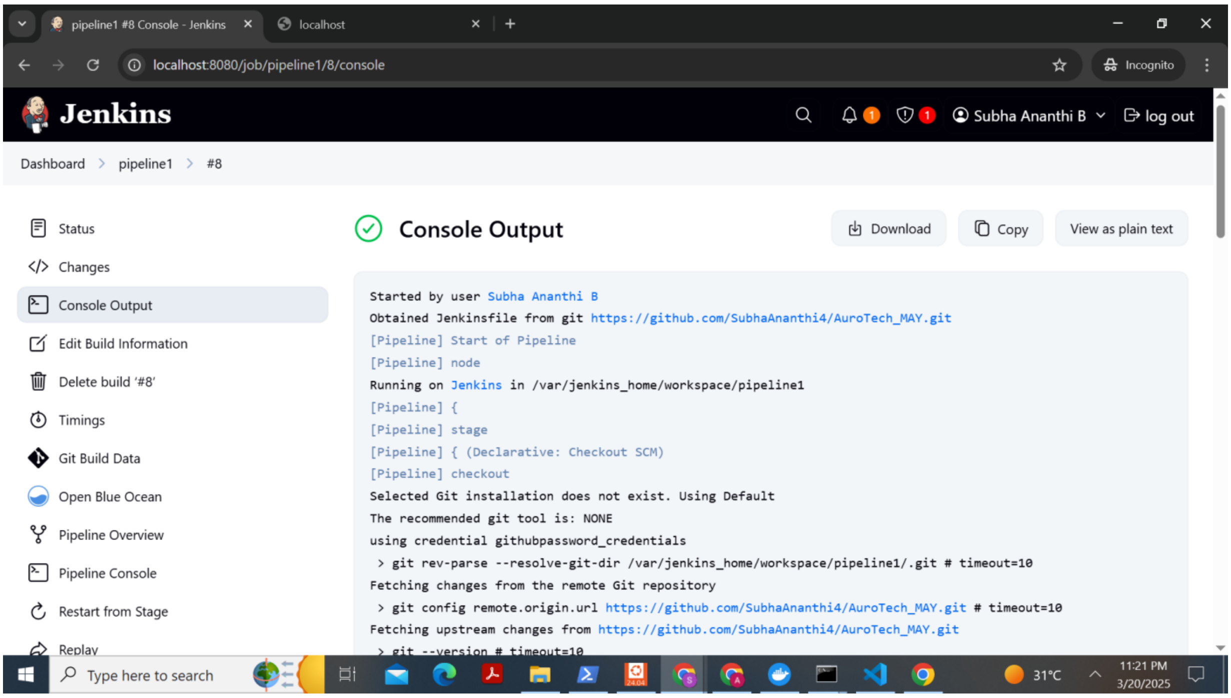
Steps to Set Up the CI/CD Pipeline:

1. **Install Jenkins:**
   - Ensure Jenkins is running and install necessary plugins (Git, Docker).
2. **Create a New Pipeline Job:**
   - Create a new Pipeline job in Jenkins to automate the build, test, and deployment process.
3. **Configure the GitHub Repository:**
   - Link your GitHub repository to Jenkins to automatically pull the latest code.
4. **Write the Pipeline Script (Jenkinsfile):**
   - Define stages in the Jenkinsfile:
     - **Clone Repository**: Pull the latest code from GitHub.
     - **Build Docker Image**: Build the image using Docker.
     - **Push Docker Image**: Push the image to a container registry (e.g., Docker Hub).
5. **Add Docker Credentials (if needed):**
   - Add Docker credentials to Jenkins if using a private registry for authentication.
6. **Trigger the Pipeline:**
   - Trigger the pipeline manually or set up GitHub webhooks for automatic triggers on code changes.

OUTPUT:


pipeline1 #8 Console - Jenkins
localhost
localhost:8080/job/pipeline1/8/console
Incognito
Dashboard > pipeline1 > #8
REST API
Jenkins 2.498
Type here to search
31°C
11:21 PM
3/20/2025

```
[Pipeline] }
[Pipeline] // script
[Pipeline] }
[Pipeline] // stage
[Pipeline] stage
[Pipeline] { (Declarative: Post Actions)
[Pipeline] echo
Pipeline succeeded! The application is running on localhost:3000.
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // withEnv
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
```



```
Started by user Subha Ananthi B
Obtained Jenkinsfile from git https://github.com/SubhaAnanthi4/AuroTech_MAY.git
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/pipeline1
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
Selected Git installation does not exist. Using Default
The recommended git tool is: NONE
using credential githubpassword_credentials
 > git rev-parse --resolve-git-dir /var/jenkins_home/workspace/pipeline1/.git # timeout=10
Fetching changes from the remote Git repository
 > git config remote.origin.url https://github.com/SubhaAnanthi4/AuroTech_MAY.git # timeout=10
Fetching upstream changes from https://github.com/SubhaAnanthi4/AuroTech_MAY.git
 > git --version # timeout=10
```