

ASSIGNMENT 2

CI/CD Pipeline Setup Using Jenkins

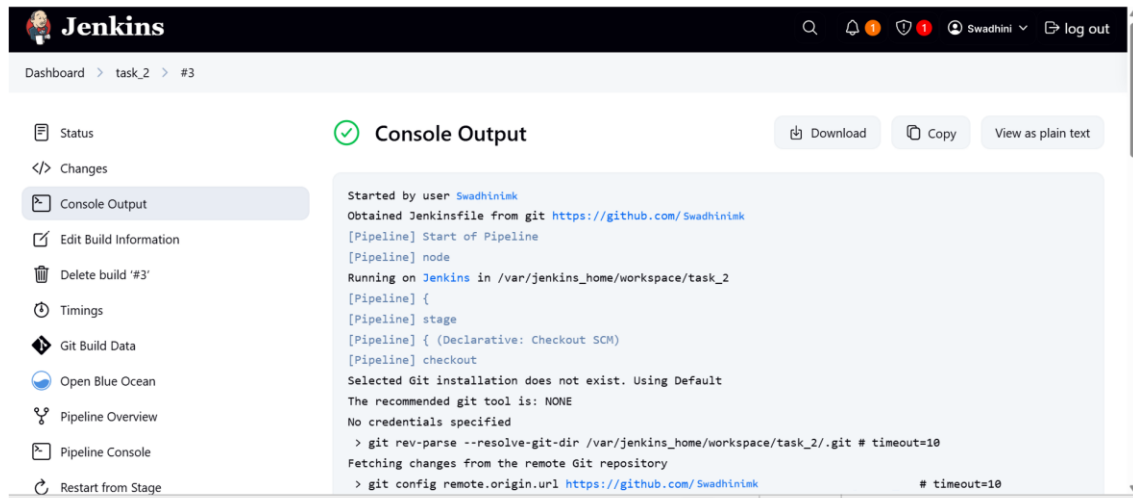
Task Description:

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:



The screenshot shows the Jenkins web interface. At the top is the Jenkins logo and navigation links. Below the header, the breadcrumb trail reads "Dashboard > task_2 > #3". On the left sidebar, the "Console Output" option is selected. The main area displays the "Console Output" for a pipeline build, marked with a green checkmark. The output text shows the pipeline starting, checking out a repository from GitHub, and running on a Jenkins node. The output is as follows:

```
Started by user Swadhinik
Obtained Jenkinsfile from git https://github.com/Swadhinik
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/jenkins_home/workspace/task_2
[Pipeline] {
[Pipeline] stage
[Pipeline] { (Declarative: Checkout SCM)
[Pipeline] checkout
Selected Git installation does not exist. Using Default
The recommended git tool is: NONE
No credentials specified
> git rev-parse --resolve-git-dir /var/jenkins_home/workspace/task_2/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Swadhinik # timeout=10
```