TASK 2

CI/CD Pipeline Setup Using Jenkins
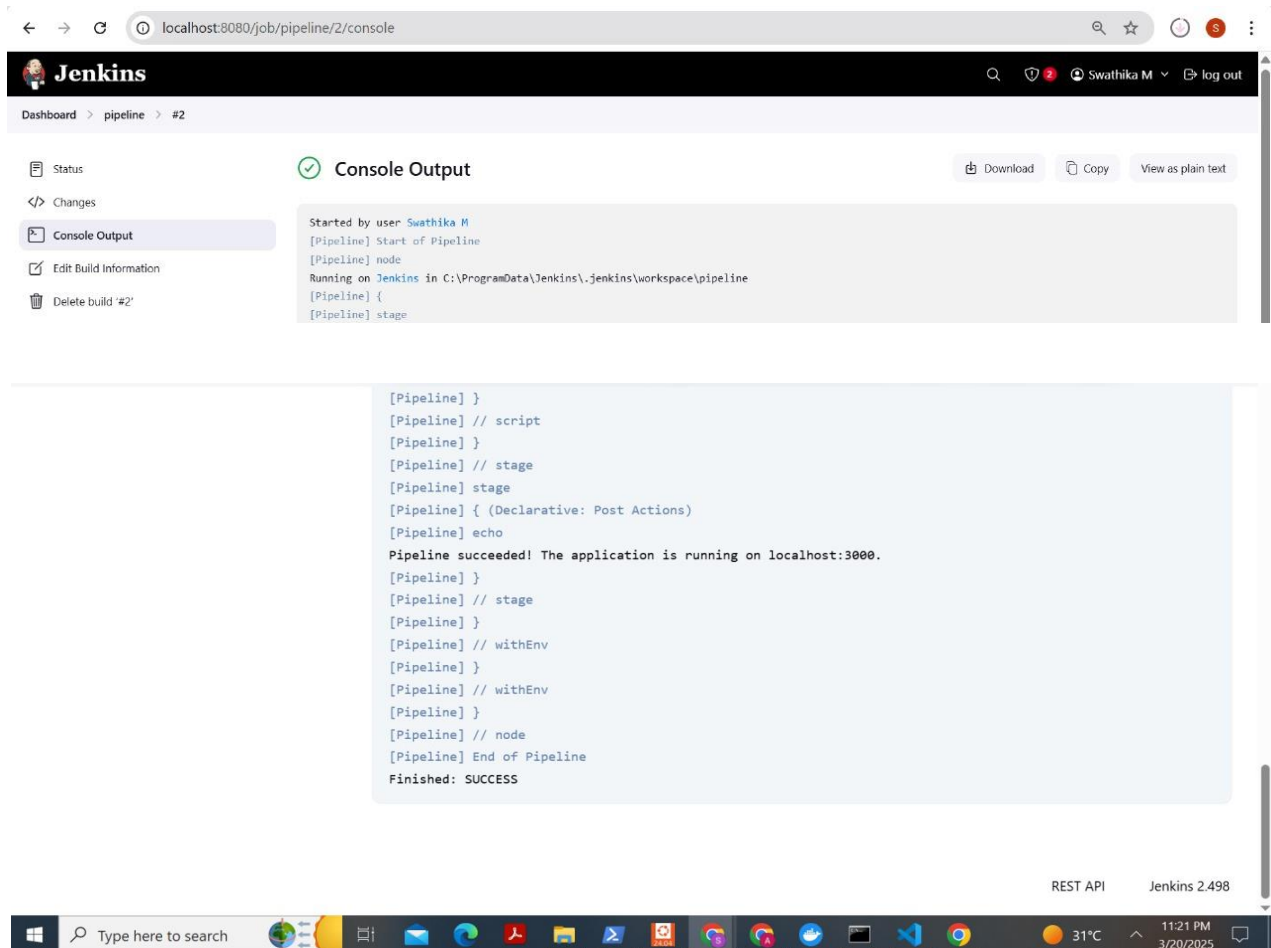
Task Description:

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: