

## TASK 2

### CI/CD Pipeline Setup Using Jenkins

#### Task Description:

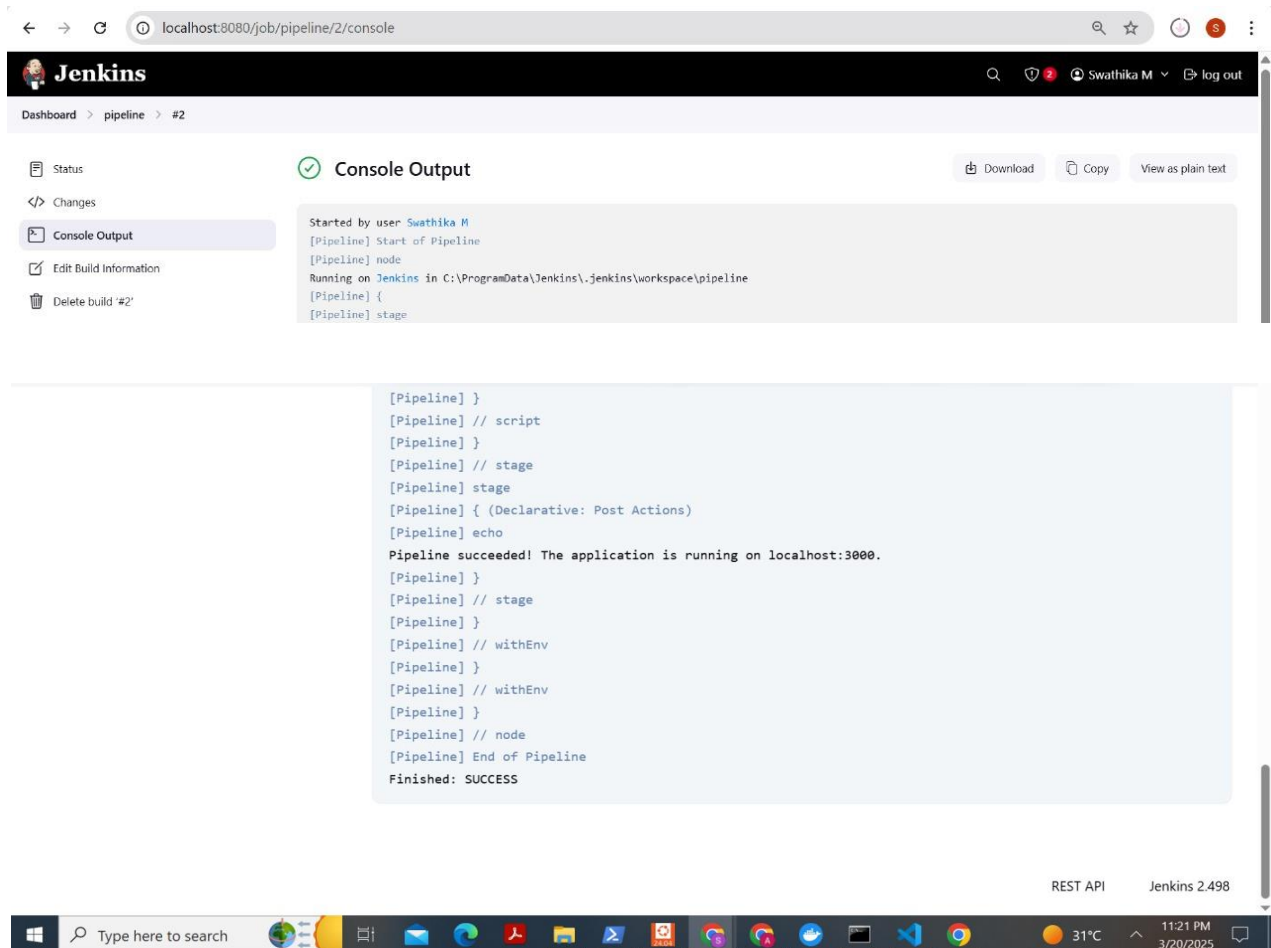
This task involves setting up a Continuous Integration and Continuous Deployment (CI/CD) pipeline using Jenkins to automate the build, test, and push process of a containerized web application. The pipeline integrates GitHub for source code management, Docker for containerization, and a container registry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

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#### 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 in a browser window. The address bar displays 'localhost:8080/job/pipeline/2/console'. The Jenkins logo and navigation links are at the top. The left sidebar contains links for 'Status', 'Changes', 'Console Output' (selected), 'Edit Build Information', and 'Delete build #2'. The main area is titled 'Console Output' with a green checkmark icon and buttons for 'Download', 'Copy', and 'View as plain text'. The console log shows the pipeline's execution details, including the start time, the user 'Swathika M', the running location, and the final success message. The Windows taskbar at the bottom shows the system clock as 11:21 PM on 3/20/2025, with a temperature of 31°C.

localhost:8080/job/pipeline/2/console

Jenkins

Dashboard > pipeline > #2

Status

Changes

Console Output

Edit Build Information

Delete build #2

Console Output

Download Copy View as plain text

Started by user Swathika M

[Pipeline] Start of Pipeline

[Pipeline] node

Running on Jenkins in C:\ProgramData\Jenkins\jenkins\workspace\pipeline

[Pipeline] {

[Pipeline] stage

[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

REST API Jenkins 2.498

Type here to search

31°C

11:21 PM 3/20/2025