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).

# Create a New Pipeline Job:

* + Create a new Pipeline job in Jenkins to automate the build, test, and deployment process.

# Configure the GitHub Repository:

* + Link your GitHub repository to Jenkins to automatically pull the latest code.

# 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).

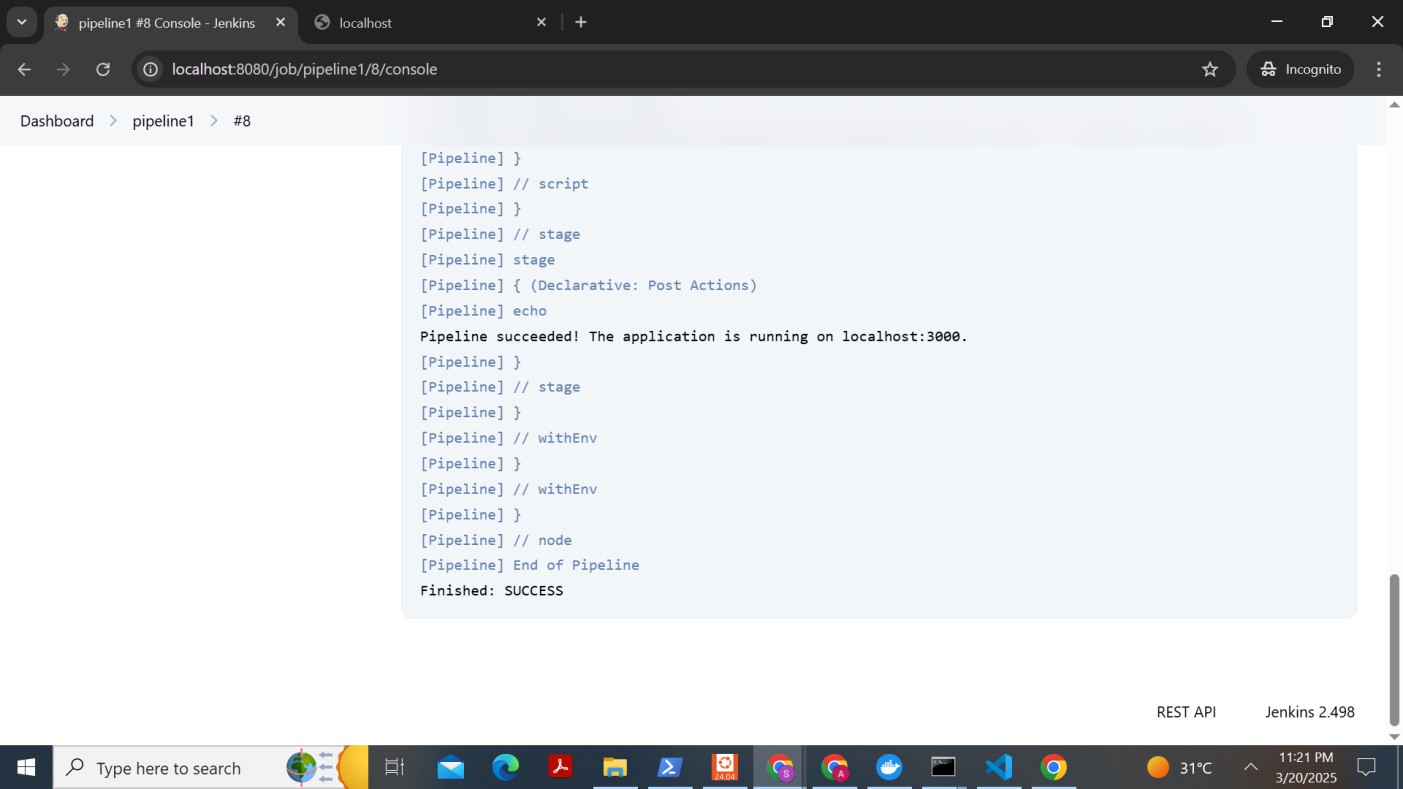
# Add Docker Credentials (if needed):

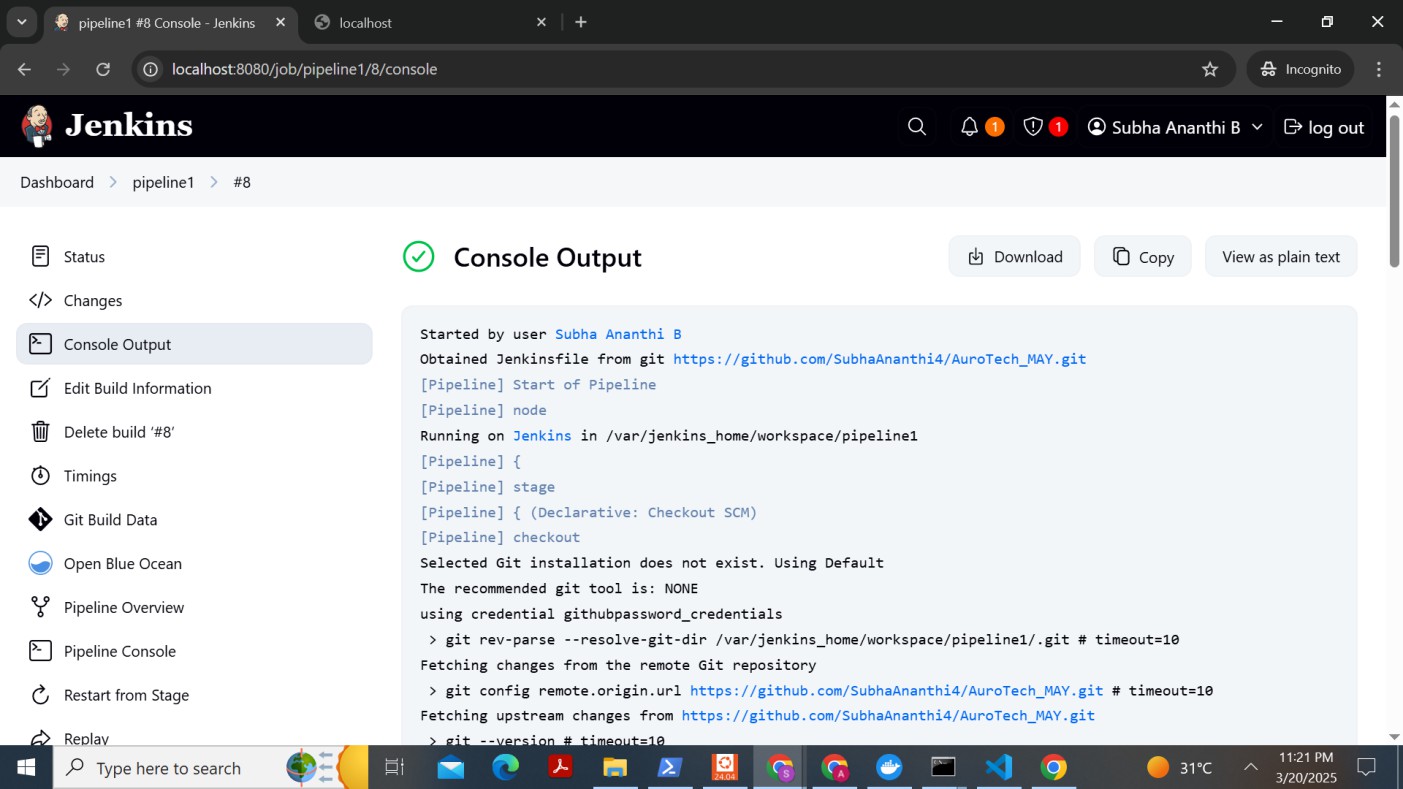
* + Add Docker credentials to Jenkins if using a private registry for authentication.

# Trigger the Pipeline:

* + Trigger the pipeline manually or set up GitHub webhooks for automatic triggers on code changes.

**OUTPUT:**

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