

Task2

Task 2: CI/CD Pipeline Implementation

CI/CD Pipeline YAML Using GitHub Actions

```
name: Remote SSH Command

on: [push]

jobs:
  build:
    name: Build
    runs-on: ubuntu-latest
    steps:
      - name: Executing Remote SSH Commands Using PEM File
        uses: appleboy/ssh-action@v1
        with:
          host: ${ secrets.HOST }
          username: ec2-user
          key: ${ secrets.EC2_SSH_KEY }
          port: 22
          script: |
            whoami
            echo "Deploying on EC2, logged IN"
            sudo chown -R ec2-user:ec2-user /home/ec2-user/a-
very-simple-webapp-for-assignment
            git config --global --add safe.directory
/home/ec2-user/a-very-simple-webapp-for-assignment
            cd /home/ec2-user/a-very-simple-webapp-for-
assignment
            git pull
            echo "Deployment script ran successfully!"
```

Explanation of Different Pipeline Stages

In this implementation, I have used a single stage to deploy the changes to the EC2 instance that is hosting the web application. The GitHub Action `appleboy/ssh-action@v1` is utilized to SSH into the EC2 instance. It uses the contents of the PEM file stored in the GitHub repository secrets for deployment.

The script runs `git pull` from the origin because `uvicorn --reload` is used to automatically reload the application when changes in the repository are detected.

How Environment Variables/Secrets Are Managed

Environment variables are managed using GitHub Secrets for the entire repository. I have saved the following secrets:

- The public IP address of the EC2 instance (HOST).
- The contents of the PEM file used to log in to the EC2 machine (EC2_SSH_KEY).