CI/ CD DEPLOYMENT FOR SPRINGBOOT APPLICATION PROJECT

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Project Objective :

As a Full Stack Developer, you have to build a CI/CD pipeline to demonstrate continuous deployment and host the application on AWS EC2 instance.

Following Requirements Should Be Met :

- A part of the source code should be tracked on the GitHub repository. You need to document the tracked files that are ignored during the final push to the GitHub repository.
- The submission of your GitHub repository link is mandatory. In order to track your task, you need to share the link of the repository in the document.
- The step-by-step process involved in completing this task should be documented.

Background of the problem statement:

As the project is in the final stage, management has asked you to automate the integration and deployment of the web application. You are required to set up an environment where the application will be hosted and accessed by users. The source code is supposed to be fetched from a GitHub repository.

Step by step process :

This project aims to build a CI/CD pipeline to demonstrate continuous deployment and host the application on AWS EC2 instance. The website is an Angular application that enables users to search and buy the available products.

Products Backlog:

- Create an AWS account
- Create a t3.medium instance for master.
- Create a t3.micro instance for slave.
- Connect the two instances to the system.
- Install Java on the instances.
- Install Jenkins on the master instance.
- Install Apache on the slave instance.
- Configure Jenkins and Apache.
- Create the Angular application.
- Upload the Angular application to GitHub.

Products Backlog:

- **Create a Pipeline project on Jenkins.**
- **Create a Jenkins file.**
- **Generate a SSH key for GitHub.**
- **Build the pipeline project.**
- **Solve the "out of memory" problem.**
- **Test the project.**
- **Deploy the project.**

Technologies and tools Used :

- Angular: used in the front-end side to build modern single-page applications
- AWS EC2 instance: to use the instances as a VM and deploy the application
- Jenkins: to build the project from GitHub.
- GitHub: to upload the source code of the project.
- MobaXterm: to the instance from Windows OS.
- Apache: to use it as a web server.
- HTML/CSS: to create and format the content of the pages.
- Bootstrap: to use some CSS and JavaScript designs.
- Visual Studio Code: to write and run the Angular code.

Flowcharts of the Application :

GitHub source code

Get the SM using Jenkins

Master Instance

Build the application

Slave Instance

Deploy to the server

AWS