TECHNOLOGY

Caltech Coding Bootcamp

Capstone Project

Domain: Food Delivery

Objectives

To build a dynamic and responsive food delivery app to display food items, filter based on user preferences, manage orders, and user details

Problem Statement and Motivation

Problem Statement:
In this project, you should be able to develop a front-end web app using Angular and a Java backend using Spring Boot, configure the applications using Docker containers, deploy the project on AWS using CI CD Pipeline

Real-World Scenario:
You are a Full Stack Developer at Foodie Inc., and your company is developing an online platform where users can place an order to buy the food online.
The company is aggregating various restaurants of a city with their famous dishes which is supposed to be stored on a central system.
You're asked to build a proof of concept using Angular for the Front End and Java for the Backend using MySQL or MongoDB as a database.
Your solution should run on the AWS EC2 Instance, where applications will be containerized using the Docker. You should implement Jenkins pipeline for easing the development operations.

Industry Relevance

Skills used in the project and their usage in the industry are given below:

- **Angular** - Platform for building mobile and desktop web applications
- **Java and SpringBoot** - Leading technology to develop backend
- **Docker** - Deliver Software as Containers
- **AWS** - Host and Deploy your Apps in World's leading Cloud Platform
- **Jenkins** - Use Jenkins to build CI CD Pipelines

Tasks

1. Develop the Front End with Angular for the Admin to add Restaurants and Dishes from the Interface with authentication for the Admin User.

2. Develop an End User Web Application listing the Restaurant and the dishes using Angular.

3. Define the structure of a database and create necessary tables using SQL in MySQL Database or MongoDB as per your preference.

4. Develop a Java Backend using Spring Boot containing various microservices.

Tasks

5. Perform the Front-End and Back-End communication using HTTP ClientDefine Jenkinsfile for both Angular and Java Projects for the automated builds.

6. Define Dockerfile for both Angular and Java Projects to develop images and run them as containers.

7. Develop a CI CD Pipeline in Jenkins for both Angular and Java Backend Projects.

8. Using AWS Launch EC2 Instances and configure other required ServicesDeploy the Projects on EC2 Instance

Project Reference

- **Task 1, 2:** Angular Components, Routing, Services and AuthGuard, Forms
- **Task 3:** SQL CRUD Commands, Primary and Foreign Key Relationship
- **Task 4:** Spring Boot Web Dependency, RestController, RequestMapping, Post and Get Requests
- **Task 5:** Jenkinsfile stages and step declarations
- **Task 6:** Dockerfile and commands to assemble an image
- **Task 7:** Jenkins Pipeline Project Creation with git SCM
- **Task 8:** AWS, EC2, SSH/CloudShell Connection, Tool Configuration

TECHNOLOGY

Thank You

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