Capstone Project: Pizza Store - Full Stack Development(Angular)

Project Overview: The Pizza Store application will be developed with the following key components:

MEAN Stack:

- **MongoDB or (MySQL)** for the database.
- **Express.js** for the backend framework.
- **Angular** for the frontend framework.
- **Node.js** as the runtime environment.

Java Spring Boot Microservices:

- Separate microservices for admin and customer functionalities.

Detailed Project Breakdown:

User Stories:

Admin:

- As an admin, I should be able to log in and log out of the application.
- I should be able to perform CRUD operations on the items available in the menu.
- I can accept or reject orders from users.
- I should be able to send messages or pop-ups to users about order status.
- I should be able to generate the bill for a particular user.
- I should be able to see the monthly revenue of the shop.

Customer:

- As a user, I should be able to register, log in, and log out of the application.
- I should be able to see different categories of the menu, like pizza, sides, beverages, combos, new launches, and bestsellers.
- I should be able to select more than one item from the same or different categories.
- I should be able to place or cancel an order.
- Once the order is placed, I should receive a message or pop-up about the order status.
- I should be able to see the bill amount for the order along with payment options.
- I should be able to see the mode of delivery.

Sprint Plan:

Sprint I Objective:

Database Setup:

- Create the database schema with relationships.
- Set up **MongoDB/MySql** for the **MEAN** stack.
- Use H2 database for Java Spring Boot services.

Backend Development:

- Implement CRUD operations for users and admins.
- Develop templates using Angular (frontend) and Spring (backend).

Sprint II Objective:

Feature Development:

- Develop search functionality based on different criteria.
- Implement menu items CRUD for Admin.
- Implement order placement and cancellation for users.
- Implement billing options (generate for Admin and view for User).
- Implement Spring Security JWT for secure authentication.
- Perform component and end-to-end testing.

Sprint III Objective:

Service Layer and Integration:

- Create Data Transfer Objects (DTOs).
- Develop service layer logic.
- Create REST API controllers.
- Implement a messaging microservice for order status updates.
- Implement a payment mode microservice.
- Integrate frontend with backend.
- Ensure application responsiveness.

Instructions:

Database Setup:

- Use MongoDB for the MEAN stack and H2 database for the Java Spring Boot services.
- Each microservice should have its own database instance.

Microservices:

- Create separate microservices for admins and customers using Spring Boot.
- Register all microservices using Eureka Server.
- Develop an independent microservice for dispatching email notifications.

Frontend Development (Angular):

- Create an Angular project for the frontend.
- Implement components for login, registration, menu listing, order placement, user profile, etc.
- Use Angular Material or Bootstrap for UI components.
- Ensure the application is responsive and functions as a Single Page Application (SPA).

Backend Development (Node.js and Express.js):

- Set up a Node.js project with Express.js for the backend.
- Implement RESTful APIs for user authentication and CRUD operations for menu items.
- Ensure interaction with MongoDB.

Integration and Testing:

- Use HttpClientModule to integrate the frontend with the backend.
- Write unit tests for Angular components and services.
- Conduct end-to-end testing to ensure the application works as expected.