Final Assessment

You have to develop a web application using Angular and Spring Boot. The application is an online shopping portal that allows customers to browse products, add them to their cart. In addition, the application will have an administrative panel where administrators can manage products, customers, and orders.

ER Diagram :

As we can see, the database has following entities:

Product: represents a product in our online shopping portal. It has a unique product ID, a name, a description, a price, and an image.

Category: represents a category of products. It has a unique category ID and a name.

Customer: represents a customer of our online shopping portal. It has a unique customer ID, a name, an email, a phone number, and an address.

User: represents a user of our web application. It has a unique user ID, a username, a password, and a role (i.e., customer or administrator).

Angular Frontend:

The Angular frontend of our web application will have the following components:

Home component: displays a list of featured products and a search box.

Product list component: displays a list of products filtered by category and search criteria. The list can be sorted by name, price, or popularity.

Login component: allows the user to login with a username and password.

Registration component: allows the user to register as a new customer.

In addition, there will be an administrative panel with the following components:

Product management component: allows the administrator to view, add, update, and delete products.

Customer management component: allows the administrator to view and delete customers.

Spring Boot Backend :

The Spring Boot backend of our web application will have the following components:

Product service: provides CRUD operations for products and queries for featured products and product statistics (e.g., top selling products).

Category service: provides CRUD operations for categories.

Customer service: provides CRUD operations for customers.

User service: provides authentication and authorization for users.

In addition, there will be a database access layer that interacts with the database using Java Persistence API (JPA) and Hibernate. The database schema will be created automatically by Hibernate based on the entity classes

Implementation :

You should implement the web application using the following technologies:

Angular for the frontend.

Spring Boot for the backend.

MySQL for the database.

Hibernate or JPA for object-relational mapping.

JWT for authentication.