



TON DUC THANG UNIVERSITY
Faculty of Information Technology

Course: Java Technology

Midterm take-home Assignment

Problem statement

A small start-up named "SpringCommerce" wants to build a simple online shopping application to sell their awesome products. In order to get to the market quickly, they just want to build an MVP (Minimum Viable Product) version with a very limited set of functionalities:

1. The application is just a simple web page that shows all products that the company sells. Customers can filter and search for products with different criteria such as product category, name, price, brand, color.
2. If customers find a product that they like, they can view its details and add it to a shopping cart and place an order.
3. No online payment is supported yet. Customers are required to pay by cash when the products are delivered to their doors.

Delivery Requirements

1. Build a Java Spring Boot application to perform all operations stated above. The data of the application should be stored in MySQL or Postgres DBMS.
2. Implementation of the following operations:

- Get a list of products by filtering multiple criteria including category, price, brand, color.
 - Add a product to shopping cart.
 - Check out the order.
3. Implementation of APIs to perform CRUD operations on the data of products, orders in the application.
 4. Entity-relationship diagram for the database and solution diagrams for the components, infrastructure design if any.
 5. An acceptable amount of unit tests should be covered.
 6. A README file includes:
 - A brief explanation for software development principles, patterns and practices being applied.
 - A brief explanation for the code structure.
 - All required steps in order to get the application run on a local computer.
 - Full CURL commands or Postman snapshots to verify the APIs including request endpoints, HTTP Headers and request payload if any.
 7. Provide security (Spring Security) for the application.
 8. Provide a demo video to show all nice features of your application.