



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 very simple online shopping application to sell their 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 simply a simple web page that shows all products on which customers can filter and search for products based on different criteria such as product category, name, price, brand, color.
2. If the customer finds a product that they like, they can view its details and add it to their shopping cart and proceed to place an order.
3. No online payment is supported yet. The customer is required to pay by cash when the product got delivered.

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. 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 (include full request endpoints, HTTP Headers and request payload if any).

* **Additional requirement:** Provide security (Spring Security) for the application.