

Assignment: Spring Boot Web MVC E-commerce App

Objective: The objective of this assignment is to develop a basic E-commerce application using Spring Boot Web MVC and Thymeleaf. The application should allow users to add new products and display the product details.

Requirements:

1. Set up a Spring Boot project with the necessary dependencies for Web MVC and Thymeleaf.
2. Create the following entity:
 - Product: id (auto-generated), title, description.
3. Implement CRUD operations for the Product entity using Spring Data JPA.
 - Create a repository interface to handle the CRUD operations.
4. Create a Thymeleaf template to display a form for adding a new product.
 - The form should include fields for the product title and description.
5. Implement the functionality to add a new product:
 - When the form is submitted, the product details should be stored in the database.
6. Create a Thymeleaf template to display the product details.
 - The template should display the product ID, title, and description.
7. Implement the functionality to retrieve and display the product details:
 - When a user visits the product details page, the corresponding product details should be fetched from the database and displayed.
8. Apply appropriate form validation and error handling throughout the application.
9. Write unit tests to test the functionality of important methods and components.

Bonus (Optional):

- Add image upload functionality for the product.
- Implement pagination for displaying multiple products.
- Implement search functionality to search for products by title or description.

An example of a form code using Thymeleaf for adding a new product in your E-commerce application is below

```
<!DOCTYPE html>
<html xmlns:th="http://www.thymeleaf.org">
<head>
  <meta charset="UTF-8">
  <title>Add New Product</title>
</head>
<body>
  <h2>Add New Product</h2>
  <form th:action="@{/products}" th:object="${product}" method="post">
    <div>
      <label for="title">Title:</label>
      <input type="text" id="title" th:field="*{title}" required>
    </div>
    <div>
      <label for="description">Description:</label>
```

```
        <textarea id="description" th:field="*{description}" required></textarea>
    </div>
    <div>
        <button type="submit">Add Product</button>
    </div>
</form>
</body>
</html>
```