

Web Application Development Lab 07

SPRING BOOT & JPA CRUD

Part B – HOMEWORK

I. ADVANCED SEARCH

1. Multi-Criteria Search

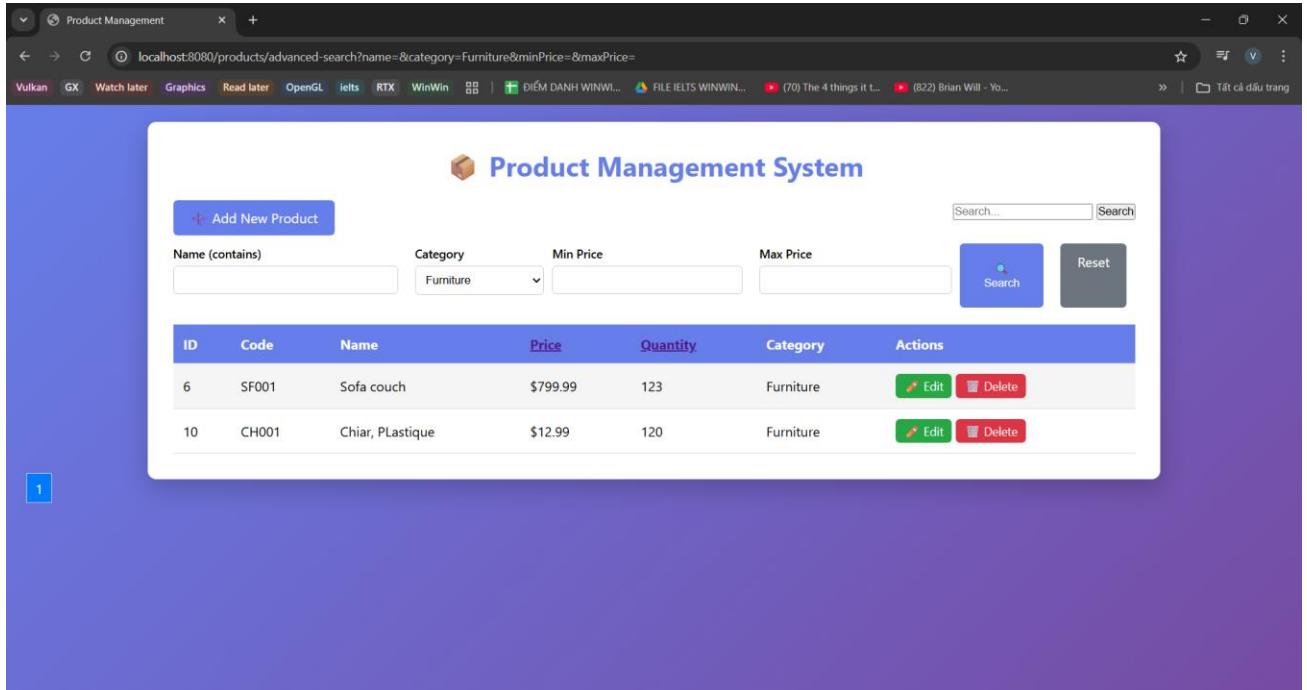
The screenshot shows a web browser window titled "Product Management" with the URL "localhost:8080/products". The main content area is titled "Product Management System" and features a success message "Product saved successfully!". Below this are search and filter controls: "Add New Product", "Search...", "Search", "Name (contains) []", "Category [All]", "Min Price []", "Max Price []", and a "Reset" button. A table lists products with columns: ID, Code, Name, Price, Quantity, Category, and Actions (Edit, Delete). The table contains 8 rows of data.

ID	Code	Name	Price	Quantity	Category	Actions
1	P001	Laptop Dell XPS 13	\$699.99	10	Electronics	<button>Edit</button> <button>Delete</button>
2	P002	iPhone 15 Pro	\$999.99	25	Electronics	<button>Edit</button> <button>Delete</button>
4	LG001	Legion 5i	\$1499.00	20	Electronics	<button>Edit</button> <button>Delete</button>
5	LG002	Legion 5i	\$123999.00	5	Electronics	<button>Edit</button> <button>Delete</button>
6	SF001	Sofa couch	\$799.99	123	Furniture	<button>Edit</button> <button>Delete</button>
8	PE001	PEANUTS	\$1.99	123	Food	<button>Edit</button> <button>Delete</button>
9	LG003	LG monitor	\$400.00	12	Electronics	<button>Edit</button> <button>Delete</button>

Implementation

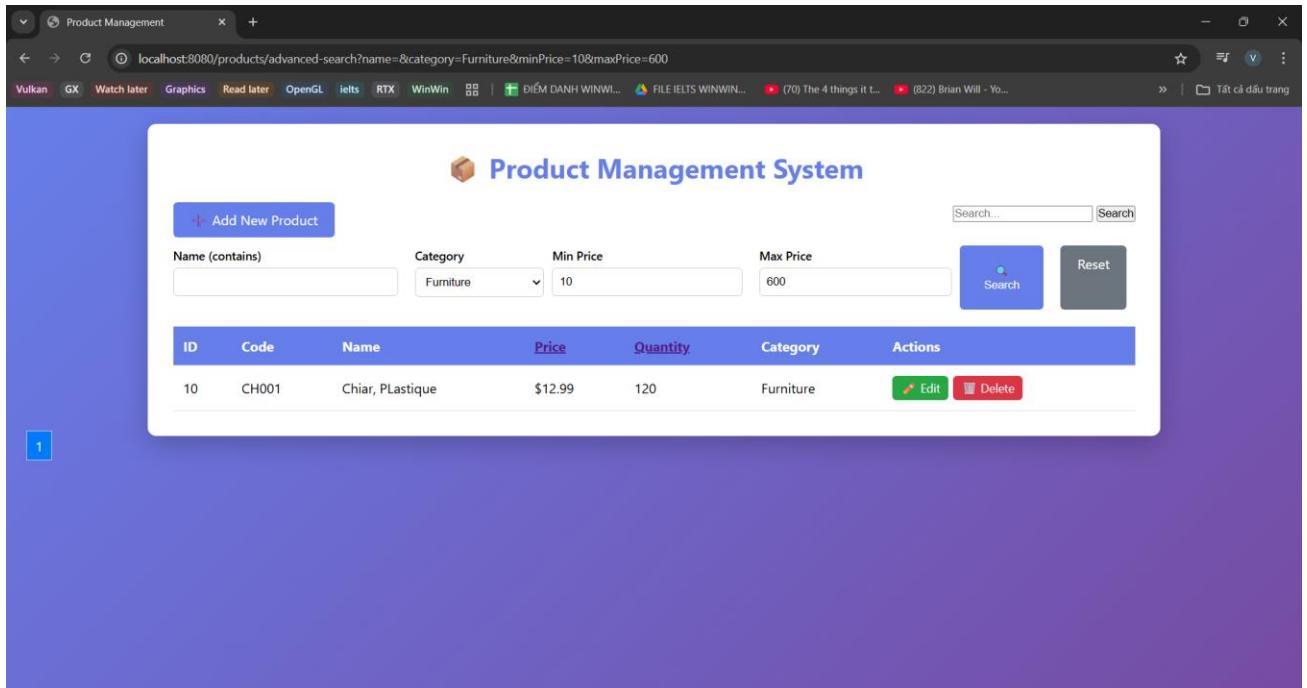
The screenshot shows a web browser window titled "Product Management" with the URL "localhost:8080/products/advanced-search?name=Legion+5i&category=&minPrice=&maxPrice=". The interface is similar to the previous screenshot, featuring search and filter controls: "Add New Product", "Search...", "Search", "Name (contains) [Legion 5i]", "Category [All]", "Min Price []", "Max Price []", and a "Reset" button. The table below shows results for products named "Legion 5i".

ID	Code	Name	Price	Quantity	Category	Actions
4	LG001	Legion 5i	\$1499.00	20	Electronics	<button>Edit</button> <button>Delete</button>
5	LG002	Legion 5i	\$123999.00	5	Electronics	<button>Edit</button> <button>Delete</button>

Searching for legion 5i

The screenshot shows a web browser window titled "Product Management" with the URL "localhost:8080/products/advanced-search?name=&category=Furniture&minPrice=&maxPrice=". The search bar contains "Furniture". The search results table lists two products:

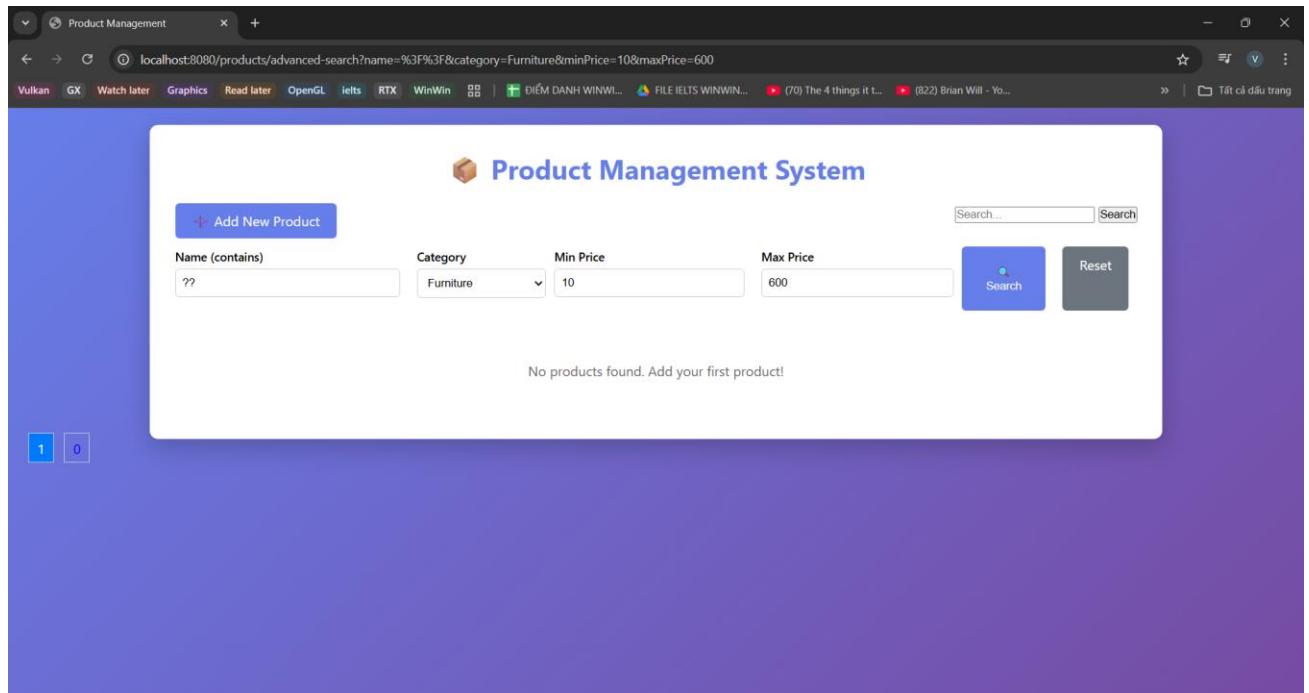
ID	Code	Name	Price	Quantity	Category	Actions
6	SF001	Sofa couch	\$799.99	123	Furniture	<button>Edit</button> <button>Delete</button>
10	CH001	Chiar, PLastique	\$12.99	120	Furniture	<button>Edit</button> <button>Delete</button>

Furniture filter

The screenshot shows a web browser window titled "Product Management" with the URL "localhost:8080/products/advanced-search?name=&category=Furniture&minPrice=10&maxPrice=600". The search bar contains "Furniture", and the "Min Price" and "Max Price" fields are set to 10 and 600 respectively. The search results table lists one product:

ID	Code	Name	Price	Quantity	Category	Actions
10	CH001	Chiar, PLastique	\$12.99	120	Furniture	<button>Edit</button> <button>Delete</button>

Min & max price



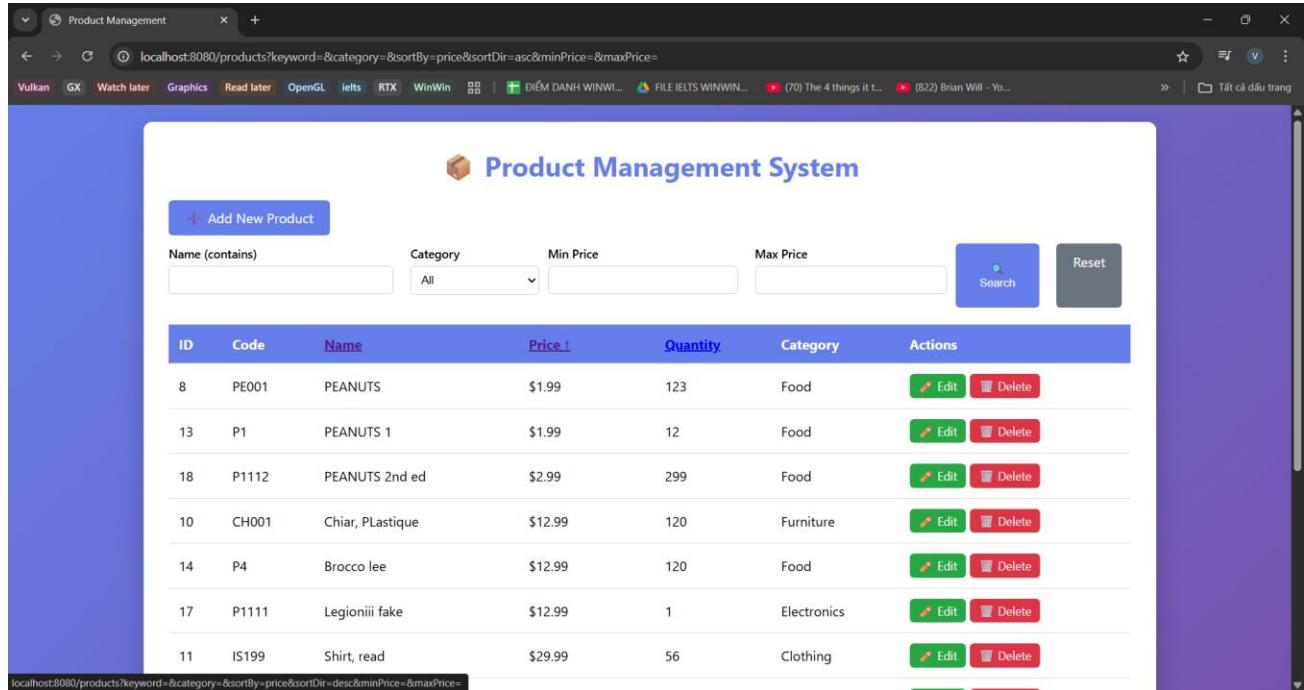
No products handling

II. VALIDATION

A screenshot of a web browser showing the 'Edit Product' form. The title bar says 'Product Form' and the address bar shows 'localhost:8080/products/save'. The main content area has a heading 'Edit Product' with a pencil icon. It contains several input fields: 'Product Code *' with value 'P00' (which has a red border and error message 'Product code must match format P1234'), 'Product Name *' with value 'Laptop Dell XPS 13', 'Price (\$ *)' with value '699.99', 'Quantity *' with value '10', 'Category *' with value 'Electronics', and a 'Description' text area with value 'High-performance laptop'. The entire form is contained within a white card-like box.

***Issue[?]:-** Manual validation added on top of Jakarta validation, which(the Jakarta) did not work.

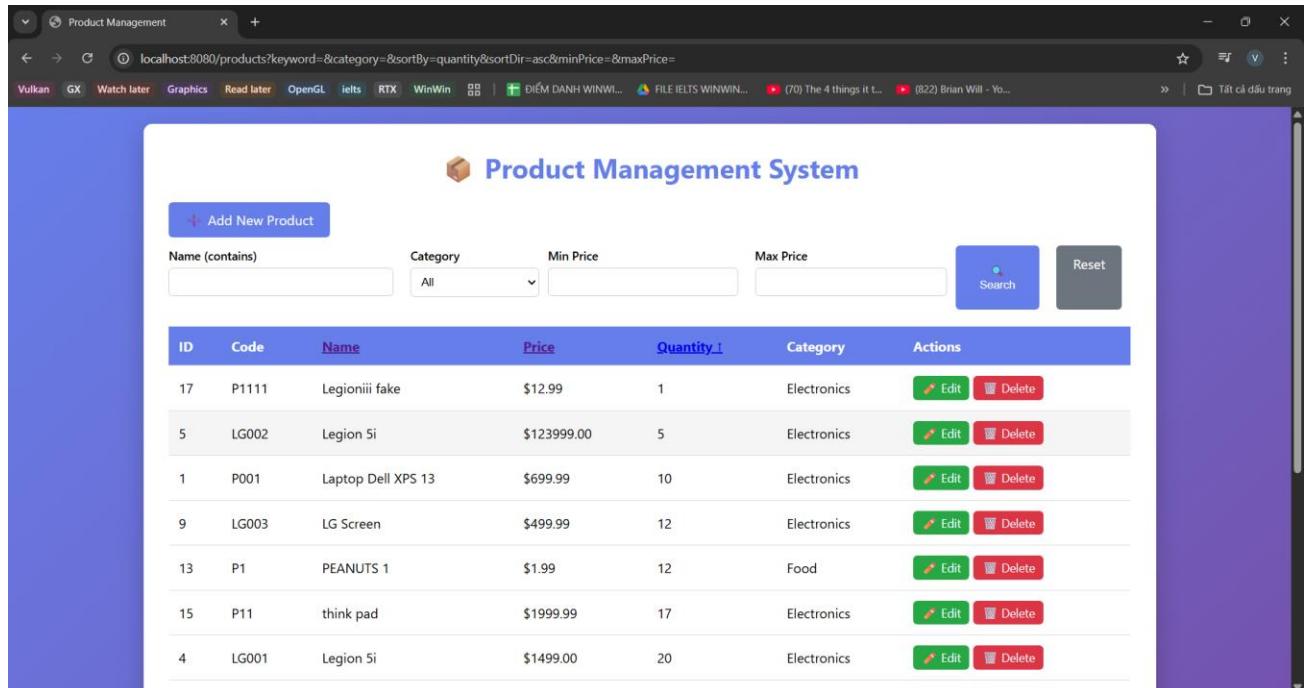
III. SORTING AND FILTERING



The screenshot shows a web-based Product Management System. At the top, there is a search bar with fields for 'Name (contains)', 'Category' (set to 'All'), 'Min Price', and 'Max Price'. Below the search bar is a table with columns: ID, Code, Name, Price, Quantity, Category, and Actions (Edit and Delete buttons). The table contains the following data:

ID	Code	Name	Price	Quantity	Category	Actions
8	PE001	PEANUTS	\$1.99	123	Food	<button>Edit</button> <button>Delete</button>
13	P1	PEANUTS 1	\$1.99	12	Food	<button>Edit</button> <button>Delete</button>
18	P1112	PEANUTS 2nd ed	\$2.99	299	Food	<button>Edit</button> <button>Delete</button>
10	CH001	Chiar, PLastique	\$12.99	120	Furniture	<button>Edit</button> <button>Delete</button>
14	P4	Brocco lee	\$12.99	120	Food	<button>Edit</button> <button>Delete</button>
17	P1111	Legioniii fake	\$12.99	1	Electronics	<button>Edit</button> <button>Delete</button>
11	IS199	Shirt, read	\$29.99	56	Clothing	<button>Edit</button> <button>Delete</button>

Sort by Price ASC



The screenshot shows the same Product Management System interface. The table data has been sorted by 'Quantity' in ascending order. The table now contains the following data:

ID	Code	Name	Price	Quantity	Category	Actions
17	P1111	Legioniii fake	\$12.99	1	Electronics	<button>Edit</button> <button>Delete</button>
5	LG002	Legion 5i	\$123999.00	5	Electronics	<button>Edit</button> <button>Delete</button>
1	P001	Laptop Dell XPS 13	\$699.99	10	Electronics	<button>Edit</button> <button>Delete</button>
9	LG003	LG Screen	\$499.99	12	Electronics	<button>Edit</button> <button>Delete</button>
13	P1	PEANUTS 1	\$1.99	12	Food	<button>Edit</button> <button>Delete</button>
15	P11	think pad	\$1999.99	17	Electronics	<button>Edit</button> <button>Delete</button>
4	LG001	Legion 5i	\$1499.00	20	Electronics	<button>Edit</button> <button>Delete</button>

Sort by Quantity ASC

The screenshot shows a web-based Product Management System. At the top, there is a search bar with fields for 'Name (contains)', 'Category' (set to 'All'), 'Min Price', and 'Max Price'. Below the search bar is a table with columns: ID, Code, Name, Price, Quantity, Category, and Actions. The table contains the following data:

ID	Code	Name	Price	Quantity	Category	Actions
18	P1112	PEANUTS 2nd ed	\$2.99	299	Food	<button>Edit</button> <button>Delete</button>
6	SF001	Sofa couch	\$799.99	123	Furniture	<button>Edit</button> <button>Delete</button>
8	PE001	PEANUTS	\$1.99	123	Food	<button>Edit</button> <button>Delete</button>
10	CH001	Chiar, PLastique	\$12.99	120	Furniture	<button>Edit</button> <button>Delete</button>
14	P4	Brocco lee	\$12.99	120	Food	<button>Edit</button> <button>Delete</button>
11	IS199	Shirt, read	\$29.99	56	Clothing	<button>Edit</button> <button>Delete</button>
2	P002	iPhone 15 Pro	\$999.99	25	Electronics	<button>Edit</button> <button>Delete</button>

A message at the bottom of the table says "Sort by Quantity DESC".

IV. STATISTICS DASHBOARD

The screenshot shows a Product Dashboard. It includes the following sections:

- Total Inventory Value:** 826345.82
- Average Product Price:** 9326.705714
- Products by Category:**
 - Electronics: 7
 - Clothing: 1
 - Food: 4
- Low Stock Alerts (less than 10):**

Product	Quantity
Legion 5i	5
Legionii fake	1
- Recently Added Products:**

Product	Created
PEANUTS 2nd ed	2025-12-05T21:08:50
Legionii fake	2025-12-05T21:02:24
think pad	2025-12-05T20:55:50
Brocco lee	2025-12-05T20:49:24