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COMPUTER SCIENCE ENGINEERING

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Completed the project named as Phase

1

FRONT END TECHNOLOGY

PRODUCT CATALOG WITH FILTERS

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Project Report

Project Title: IBM-FE-Product Catalog with Filters

1. Introduction

This project is a frontend-based product catalog system where users can browse products, search by name, filter by category, and sort based on price. The goal of this project is to demonstrate frontend development skills using HTML, CSS, and JavaScript.

2. Objective

- To design a simple e-commerce style product catalog.
- To implement search, filter, and sorting functionalities.
- To build a responsive and user-friendly UI.
- To apply concepts of frontend web development (HTML, CSS, JavaScript).

3. Technologies Used

- HTML5 – Structure of the webpage.
- CSS3 – Styling and responsive layout.
- JavaScript (ES6) – Logic for search, filters, and sorting.
- JSON Data – For storing product details.

4. System Requirements

Hardware Requirements:
- Processor: Intel i3 / AMD equivalent or above
- RAM: 4 GB minimum
- Hard Disk: 500 MB free space
- Display: 1024×768 resolution

Software Requirements:
- OS: Windows / Linux / Mac
- Tools: Any Text Editor (VS Code recommended)
- Browser: Chrome / Firefox / Edge

5. Module Description

Home Page: Displays all products in a grid view.
Search Module: Users can search products by name.
Filter Module: Category filter: Laptop, Mobile, Accessories.
Sort Module: Sort by price (Low → High / High → Low).

6. Data Flow Diagram (DFD)

Level 0: User → Product Catalog → Output (Filtered Products)
Level 1:
- Input: Search text / Category / Sort option

- Processing: JavaScript filtering & sorting
- Output: Updated product list

7. Advantages

- Simple and responsive frontend.
- Easy to extend with new features (like Add to Cart).
- User-friendly UI for browsing products.

8. Limitations

- No backend (data not saved permanently).
- Limited to static JSON data.
- No authentication (login/register).

9. Future Enhancement

- Add backend (Node.js / Express + MongoDB).
- Implement Add to Cart & Checkout.
- User login & registration.
- Real product images & database integration.

10. Screenshots

Attach screenshots of:
1. Home Page – Product Grid
2. Search Functionality
3. Category Filter Applied
4. Sorting Example

11. Conclusion

This project successfully demonstrates the implementation of a product catalog with filters and search functionality using HTML, CSS, and JavaScript. It highlights key frontend concepts and provides a base for future expansion into a complete e-commerce system.

12. References

- W3Schools – HTML, CSS, JS (https://www.w3schools.com)
- MDN Web Docs (https://developer.mozilla.org)