COLLEGE CODE : 9623

COLLEGE NAME : Amrita College of Engineering And Technology

DEPARTMENT   : Computer Science and Engineering

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Completed the project named as

Phase 1 Problem Understanding and Requirements

PROJECT NAME: PRODUCT CATALOG WITH FILTERS

SUBMITTED BY,

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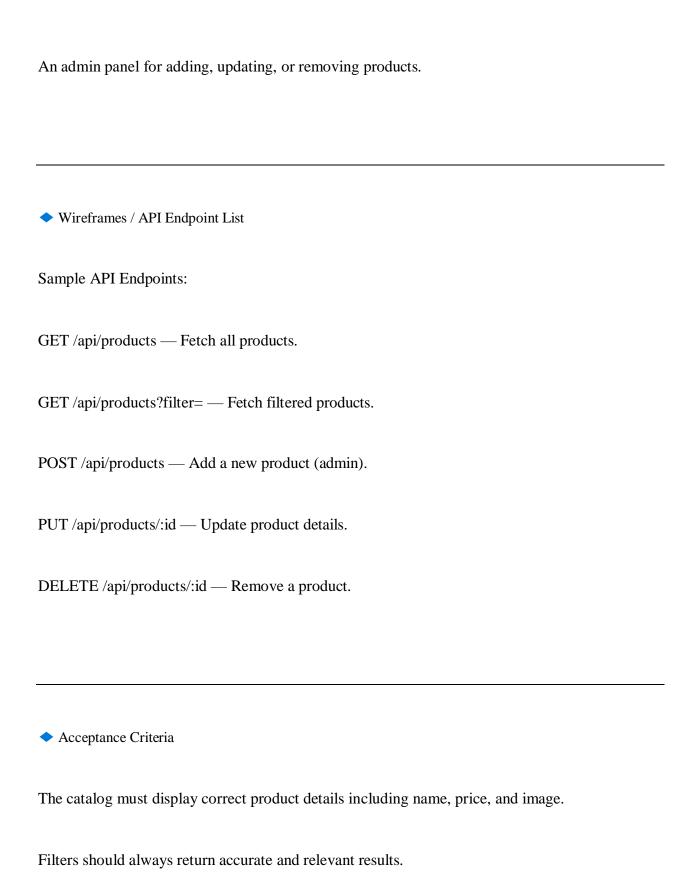Phase 1 — Problem Understanding & Requirements

◆ Problem Statement

In the present digital era, e-commerce platforms are growing rapidly. However, one of the major challenges faced by users is the difficulty in navigating through a large number of products. Without proper filtering and categorization, customers spend more time searching for items, which reduces customer satisfaction and directly impacts sales.

This project aims to design and implement a Product Catalog with Filters that will improve search efficiency, enhance user experience, and provide an organized way of accessing products.

◆ Users & Stakeholders

1. End Users – Customers who will browse the product catalog and purchase items. Their main expectation is a smooth, fast, and intuitive browsing experience.

2. Business Owners – Individuals or organizations managing the product catalog. They need accurate and updated product listings to attract and retain customers.

3. Developers – Responsible for building and maintaining the catalog, filter functionalities, and backend APIs.

4. UI/UX Designers – Focus on creating a simple, responsive, and attractive interface so that users can find products quickly without confusion.

◆ User Stories

As a customer, I want to browse products easily so that I can save time.

As a customer, I want to apply filters like price, brand, and category so that I can find the most relevant products.

As an admin, I want to update product details efficiently so that the catalog always stays accurate.

As a mobile user, I want the catalog to work on all devices so that I can shop on the go.

L. Core Requirements

◆ MVP Features

A product listing page with essential details (name, price, image).

Basic filters such as category, brand, and price range.

A keyword search bar to quickly find products.

Responsive UI that adapts to both desktop and mobile screens.

An admin panel for adding, updating, or removing products.

◆ Wireframes / API Endpoint List

Sample API Endpoints:

GET /api/products — Fetch all products.

GET /api/products?filter= — Fetch filtered products.

POST /api/products — Add a new product (admin).

PUT /api/products/:id — Update product details.

DELETE /api/products/:id — Remove a product.

◆ Acceptance Criteria

The catalog must display correct product details including name, price, and image.

Filters should always return accurate and relevant results.

Search must display products matching entered keywords.

The interface must be responsive and consistent across devices.

Admin should be able to manage products without technical difficulty.

⅃ Conclusion & Next Steps

Phase 1 clearly defines the problem, target users, and system requirements for the Product Catalog with Filters project. With this foundation, the next phase will focus on Design & Planning (Phase 2), where the system architecture, database schema, and UI mockups will be created.

This project, once completed, will not only solve the issue of product discovery but also improve overall customer satisfaction and boost sales for businesses.