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FRONT END TECHNOLOGY

PRODUCT CATALOG WITH FILTERS

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IBM Products Catalog with Filters – Project Report

Introduction

IBM (International Business Machines Corporation) is one of the leading global technology companies that provides a wide variety of products and services such as cloud computing, artificial intelligence, enterprise software, consulting, cybersecurity solutions, and hardware infrastructure. Due to its vast portfolio, customers often find it challenging to explore and identify the most relevant product for their business needs. A simple product list is not sufficient for such a large catalog, which is why a structured system with filters is highly essential.

Problem Statement

When a customer visits the IBM product catalog, the sheer number of available options creates confusion and increases the time taken to locate the correct solution. Without advanced search and filters, customers may miss important solutions or choose alternatives that do not fully meet their needs. This leads to poor user experience and may impact business opportunities.

Objective

The objective of this project is to design and implement a digital catalog system for IBM products that includes advanced filters and search functionality. The system should allow customers to filter products based on categories, price, industry use-case, deployment type, and other attributes. This improves navigation, saves time, and ensures customers find the right product efficiently.

System Analysis

Existing System

Currently, IBM provides product information on its official website. Although the data is complete, navigating through hundreds of products is often time-consuming. Many customers rely on manual browsing or external search engines to locate specific IBM offerings, which is not convenient. The lack of structured filtering and personalized recommendations is a major drawback of the existing system.

Proposed System

The proposed IBM product catalog system introduces a structured and filter-enabled catalog interface. Users can filter products by multiple attributes such as: - **Category:** Cloud, AI, Security, Software, Consulting, Hardware. - **Price Model:** Subscription, Pay-as-you-go, Free trial, Enterprise license. - **Industry:** Banking, Healthcare, Education, Retail, Government. - **Deployment:** Cloud-based, Hybrid, On-premise. - **Ratings and Reviews:** Filter by customer feedback and ratings. By applying these filters, users can quickly discover the IBM solutions that match their requirements. This system will provide a seamless experience for enterprise clients and help IBM showcase its vast portfolio more effectively.

Advantages of the Proposed System

1. Faster product discovery using advanced filters. 2. Reduced time and effort in browsing large catalogs. 3. Enhanced customer satisfaction and improved decision-making. 4. Increased adoption of IBM products. 5. Organized and scalable database management of products.

System Design & Modules

The system follows a client-server architecture. The frontend displays the interactive catalog, while the backend manages the filtering logic, product data retrieval, and personalized recommendations. The database stores detailed product information including name, description, price, features, and industry focus.

Modules of the System

1. **User Interface Module:** Provides a clean product catalog view with grid/list format, search bar, and filtering options. 2. **Product Management Module:** Admin users can add, edit, or remove IBM products, update pricing models, and assign categories. 3. **Filter & Search Module:** Allows customers to filter based on multiple attributes like category, price, deployment, and industry. 4. **Sorting Module:** Provides options to sort by price, popularity, release date, or customer ratings. 5. **Recommendation Engine:** Suggests IBM products based on user history, trends, and related solutions. 6. **User Interaction Module:** Supports product comparison, bookmarking, and exporting catalog data.

Technology Stack

- **Frontend:** React.js with Tailwind CSS for dynamic UI. - **Backend:** Node.js with Express.js or IBM Cloud Functions. - **Database:** IBM Db2 / MongoDB to store product details. - **Deployment:** IBM Cloud platform for scalability and reliability. - **Optional Enhancements:** Integration with Elasticsearch for advanced filtering and AI-driven search.

Expected Outcome

The IBM Products Catalog with Filters will simplify the process of exploring IBM’s wide range of products. Customers will be able to locate relevant solutions quickly, compare different options, and make informed decisions. This will also help IBM in promoting its latest technologies and increasing customer engagement.

Future Enhancements

1. AI-powered product recommendation system. 2. Voice and chatbot-enabled product search. 3. Integration with IBM Watson for personalized solutions. 4. Mobile application with offline browsing capability. 5. Multi-language and multi-currency support for global users.

Conclusion

The IBM Products Catalog with Filters project demonstrates how a structured digital catalog can transform the way enterprise clients discover and adopt IBM solutions. With advanced filters, personalized recommendations, and an intuitive interface, this system improves customer experience while supporting IBM’s goal of delivering innovative, accessible, and scalable technologies worldwide.