Assignment Product Recommendations

Assignment: Designing a Product Recommendation System

Overview:

You are working for a company that sells products online, and you have been tasked with designing a product recommendation system that will suggest products to customers based on their past purchases and browsing behavior. Your system should be able to handle a large volume of customers and products and provide real-time recommendations.

Requirements:

1. The system should be able to analyze customer data and generate recommendations based on **past purchases, browsing history, and other relevant data**.
2. The system should be able to handle a large volume of customer data and product data.
3. The system should be able to provide real-time recommendations.
4. The system should be able to handle multiple recommendation algorithms, such as collaborative filtering and content-based filtering.
5. The system should be able to integrate with the existing e-commerce platform.

Assignment Tasks:

1. Identify the key components of the product recommendation system, such as data storage, data analysis, and recommendation algorithms.
2. Choose a technology stack for the system, such as **Python, Spark, and Cassandra**.
3. Design the data model for storing customer and product data.
4. Implement the recommendation algorithms, such as collaborative filtering and content-based filtering.
5. Test the system with a large volume of customer and product data and evaluate the performance.
6. Integrate the system with the existing e-commerce platform.
7. Document the system architecture and provide instructions for deployment and maintenance.

Deliverables:

1. System architecture diagram
2. Data model design
3. Source code for the product recommendation system
4. Test results and performance evaluation
5. Integration documentation
6. Deployment and maintenance instructions.