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.