Project Name :

### Product Recommendation System

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Version : 1.0

Date : 12/10/2023

## **Functional Requirements Document (FRD)**

### Product Recommendation System

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### **1. Executive Summary:**

The FRD provides a comprehensive breakdown of functional and system requirements for the Product Recommendation System, ensuring enhanced user experience through tailored product suggestions.

### **2. Introduction:**

This document lays out the technical functionalities and system behavior expected for a recommendation system based on merchant data, user behavior, and other relevant metrics.

### **3. System Overview:**

The Product Recommendation System integrates merchant data, processes it, and offers personalized product recommendations to end-users on a dynamic banner.

### **4. Users and User Roles:**

* Customer (End User): Interacts with product recommendations.
* Merchant: Supplies product data.
* System Administrator: Manages system health and security.
* Data Analyst/Scientist: Analyzes data and refines recommendation algorithms.
* Content Manager: Oversees the display content.

### **5. Functional Requirements:**

5.1 Data Extraction

* Automated retrieval of merchant data at specified intervals.
* Validation checks to ensure data integrity during extraction.

5.2 Data Analysis

* Categorization of products based on types, price, popularity, etc.
* Tools to analyze and determine product trends based on historical data.

5.3 Recommendation Generation

* Algorithms to generate product suggestions based on user behavior and preferences.
* The capability to update recommendations in real-time or near-real-time based on user interactions.

5.4 Banner Display

* Dynamic content display that can showcase multiple product recommendations.
* Responsive design ensuring consistency across various device types.

### **6. System Interfaces:**

* Merchant Portal for data input.
* Admin Dashboard for system health monitoring and management.
* User interface with integrated recommendation banners.

### **7. Data Requirements:**

* Structured data storage for merchant data, including product details, prices, and availability.
* User behaviour logs to analyse and feed into the recommendation algorithm.

### **8. Security Requirements:**

* Encryption of sensitive user data.
* Secure channels for data extraction and transmission.
* Regular security audits and vulnerability assessments.

### **9. System Dependencies:**

* Dependency on the merchant portal for accurate and timely data.
* Dependency on the main shopping platform for seamless integration.

### **10. User Acceptance Criteria:**

* Recommendations should load within 2 seconds of user page access.
* At least 80% accuracy in product recommendations based on user feedback.

### **11. Diagrams and Flowcharts:**

Include system architecture diagrams, user flow diagrams, and data flow diagrams for clear visual representations.

### **12. Glossary and Terminology:**

* Algorithm: A set process or formula for calculating recommendations.
* User Behavior Logs: Data on user interactions with products and the platform.

### **13. Appendices:**

Detailed specifications, data samples, user feedback forms, and other supplementary details.

### **14. Revision History:**

A record of changes made to the document, including date, description, and the author's name.

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