**Software Requirements Specification (SRS) Document**

**Retail Shop Management System**

**1. Introduction**

**1.1 Purpose**

The purpose of this document is to define the functional and non-functional requirements for the **Retail Shop Management System (RSMS)**. This system aims to streamline the operations of a retail shop, including inventory management, sales tracking, customer management, and reporting.

**1.2 Scope**

The Retail Shop Management System is designed to assist shop owners in managing inventory, processing sales, generating invoices, and maintaining customer and supplier details. The system will enhance efficiency and reduce manual work by automating core business operations.

**1.3 Definitions, Acronyms, and Abbreviations**

* **RSMS**: Retail Shop Management System
* **POS**: Point of Sale
* **SKU**: Stock Keeping Unit
* **Admin**: System administrator

**1.4 Overview**

This document describes the functional and non-functional requirements of the system, ensuring reusability, maintainability, reliability, and security.

**2. Overall Description**

**2.1 Product Perspective**

The system will be a **web-based application** that can be accessed through any modern browser. It will be integrated with barcode scanners and printers for efficient sales processing.

**2.2 User Classes and Characteristics**

* **Shop Owner/Admin**: Full access to the system, including product management and financial reports.
* **Cashiers**: Limited access for processing sales and managing customers.
* **Customers**: Can view available products and check their prices.

**2.3 Operating Environment**

* Web-based (accessible on Windows, macOS, Linux)
* Database: PostgreSQL
* Backend: Node.js
* Frontend: React

**3. Functional Requirements**

**3.1 User Authentication and Access Control**

* Users must log in with a username and password.
* Role-based access control (Admin, Cashier, Customer).

**3.2 Inventory Management**

* Add, update, and delete products.
* Track stock levels and generate low stock alerts.
* Categorization of products with SKU and barcode support.

**3.3 Sales and Billing**

* Process sales through a Point of Sale (POS) system.
* Generate invoices for customers.
* Apply discounts and manage promotions.

**3.4 Customer and Supplier Management**

* Store customer details (name, contact, purchase history).
* Manage supplier information and product sourcing.

**3.5 Reports and Analytics**

* Generate daily, weekly, and monthly sales reports.
* Analyze customer buying patterns and inventory trends.

**4. Non-Functional Requirements**

**4.1 Reusability (Object-Oriented Approach)**

* The system will be built using an object-oriented programming paradigm to allow **code reuse and modularity**.

**4.2 Maintainability**

* The system will include **a well-documented codebase** and a simple admin panel to allow users to manage basic operations without needing a developer.

**4.3 Reliability**

* The system will ensure **99.9% uptime** and automatic backups to prevent data loss.

**4.4 Security**

* **User authentication with encryption**
* **Role-based access control** to prevent unauthorized access
* **Data encryption** for sensitive information like customer details and transactions

**5. Documentation**

* A **detailed user manual** will be provided for ease of use.
* The system documentation will be maintained on **Notion** and uploaded to **GitHub**.

**6. Project Management**

* **Trello/Jira** will be used for task tracking.
* Development updates and version control will be maintained in **GitHub**.

**7. Conclusion**

The Retail Shop Management System will help shop owners automate their operations, enhance productivity, and improve customer experience while ensuring security, reliability, and ease of maintenance.