**Software Requirements Specification (SRS) for Inventory Management System**

**1. Introduction**

**1.1 Purpose**

This document provides a detailed description of the software requirements for an Inventory Management System (IMS). It outlines the system's capabilities for managing stock, managing sales and purchases, managing suppliers and customers, and ensuring real-time inventory updates.

**1.2 Scope**

The IMS supports warehouse operations by allowing employees to add, remove, and modify inventory, manage sales and purchase transactions, track suppliers and customer information, and generate comprehensive inventory reports. The system interfaces with other departments to maintain updated stock levels and supports secure, efficient inventory management.

**1.3 Definitions, Acronyms, and Abbreviations**

* **IMS**: Inventory Management System
* **ERP**: Enterprise Resource Planning, it is a type of software used by organizations to manage and integrate the essential parts of their business processes.
* **SKU**: Stock Keeping Unit
* **GUI**: Graphical User Interface
* **Inventory**: The collection of goods stored for future sales or productional

**1.4 References**

* IEEE 830 Standard for Software Requirements Specification
* ISO 9001 Quality Management Standards
* ISO/IEC 27001 Information Security Management Standards

**1.5 Overview**

This document describes the functionality and requirements for the IMS, focusing on inventory tracking, order and transaction processing, supplier and customer management, reporting, and security.

**2. General Description**

**2.1 Product Perspective**

The IMS integrates with existing systems, including ERP and management platforms, serving as a centralized inventory control solution. The system is accessible to authorized personnel for warehouse management, supplier and customer management, and handling sales and purchase transactions.

**2.2 Product Functions**

The IMS provides functionalities including:

* Inventory tracking and management
* Stock adjustments (additions, removals)
* Sales and purchase transaction processing
* Supplier and customer management
* Inventory reporting and analytics

**2.3 User Characteristics**

The users of the system are:

* **Warehouse Managers**: Oversee inventory levels, manage transactions, and monitor supplier and customer interactions.
* **Employees**: Update inventory records, process sales and purchase orders.
* **Administrators**: Manage user access, perform system maintenance, and oversee data integrity.

**2.4 Constraints**

* The system must comply with data protection standards.
* Real-time data updates require a stable internet connection.

**2.4 Assumptions and Dependencies**

* Reliable network connectivity for real-time updates.
* Database systems capable of handling extensive inventory and transaction records.
* Adequate Hardware Infrastructure: Having the necessary hardware, such as servers, barcode scanners, printers, and computers, required to support the inventory management system. This includes devices needed for data input, processing, and secure storage.

**3. System Features**

**3.1 Inventory Tracking**

**Description**: Tracks stock levels, item locations, and availability in real-time, ensuring accurate stock counts across all locations.

* **Inputs**: New inventory items, item details (e.g., SKU, quantity, location).
* **Process**: Validate and update stock counts based on incoming stock or adjustments.
* **Outputs**: Updated stock levels and item availability across all warehouses and locations.

**3.2 Sales and Purchase Processing**

**Description**: Manages sales orders, purchase orders, fulfillment tracking, and transaction history, maintaining a record of all transactions with suppliers and customers.

* **Inputs**: Sales or purchase order details (e.g., item quantity, price, supplier/customer information).
* **Process**: Validate order details, adjust inventory levels based on sales or purchase fulfillment, and update the transaction log.
* **Outputs**: Updated inventory levels, confirmation of transaction processing, and a detailed transaction history log.

**3.3 Supplier and Customer Management**

**Description**: Maintains a database of suppliers and customers, tracking interactions, terms, and transaction histories.

* **Inputs**: Supplier/customer details (e.g., name, contact, payment terms), transaction records.
* **Process**: Validate and store supplier/customer data, track transaction history and payment terms.
* **Outputs**: Comprehensive supplier and customer database with accessible transaction history and interaction records.

**3.4 Inventory Adjustments**

**Description**: Allows users to add, remove, or adjust inventory counts to maintain accurate stock records.

* **Inputs**: Adjustment details (e.g., item, quantity, adjustment reason).
* **Process**: Update inventory records based on the specified adjustment (addition or removal).
* **Outputs**: Updated stock levels, with logs showing adjustment type and reason for inventory accuracy.

**3.5 Reporting and Analytics**

**Description**: Provides insights on stock levels, order trends, transaction volume, and inventory turnover.

* **Inputs**: Data on current stock levels, historical sales/purchase data, and transaction details.
* **Process**: Generate analytics and reports based on inventory, sales, and purchase trends.
* **Outputs**: Detailed reports and analytics on stock levels, order trends, turnover rates, and transaction summaries to support decision-making.

**4. External Interface Requirements**

**4.1 User Interfaces**

* **IMS Dashboard**: A GUI with features for inventory tracking, sales and purchase management, supplier and customer management, and reporting.

**4.2 Software Interfaces**

* **Database System**: Stores and retrieves inventory, transaction, supplier, and customer records.
* **ERP/Accounting Systems**: Interface for financial reconciliation of transactions.

**4.3 Communication Interfaces**

* **Internet Connection**: For cloud-based or real-time data processing.
* **Secure API**: Facilitates communication between the IMS and other software systems, ensuring data integrity.

**4.4 Hardware Interfaces**

* **Barcode Scanners**: For efficient item identification and inventory updates.
* **Printers**: For printing transaction receipts, labels, and inventory reports.
* **Servers**: To host the IMS database, ensuring data storage and availability, and to manage secure transactions across multiple users and devices.
* **Computers**: Workstations for employees to access the IMS, update inventory records, and generate reports.

**5. Non-Functional Requirements**

**5.1 Security**

* User authentication and role-based access control to ensure data security.
* Encrypted data storage and transmission to protect sensitive information related to inventory, suppliers, and customers.

**5.2 Performance**

* The system should handle at least 1,000 concurrent transactions to support high-volume operations.
* Inventory and transaction updates should reflect in less than 2 seconds for real-time accuracy.

**5.3 Reliability**

* System Uptime: The IMS should maintain 99.9% uptime, ensuring minimal downtime.
* Failure Recovery: The system should implement failover mechanisms and have data recovery protocols in place to ensure swift recovery in the event of unexpected failures, preserving transaction data and minimizing disruption to inventory operations.

**5.4 Availability**

* The system should be accessible 24/7 except during scheduled maintenance periods.
* The system must have a mechanism for handling network outages.

**5.5 Usability**

* Simple, intuitive interfaces are designed to reduce training time and improve operational efficiency.

**6. Other Requirements**

**6.1 Transaction Logging and Auditing**

* All adjustments, including inventory adjustments, sales, and purchases, must be logged with a timestamp, user ID, and transaction type for auditability.

**6.2 Maintenance and Monitoring**

* The IMS should support remote updates and provide system health alerts to notify administrators of potential issues.

**7. Appendix**