Software Requirements Specification (SRS) for Inventory Control System

**1. Introduction**

**1.1 Objective**

This document outlines the requirements for the "Inventory Control System," a robust platform designed to manage stock, streamline order processing, and generate actionable insights. The system will improve accuracy and efficiency in inventory management for businesses of varying scales.

**1.2 Conventions Used**

* Functional requirements are marked with **FR-**.
* Non-functional requirements are marked with **NFR-**.

**1.3 Target Audience**

The intended audience for this SRS includes developers, project managers, stakeholders, and end-users such as warehouse operators, business managers, and system administrators.

**1.4 Additional Notes**

The system will prioritize scalability, security, and ease of use. It will be accessible through web browsers and mobile applications for diverse user needs.

**1.5 Contact Details**

* Project Lead: Debangan Ghosh  
  Email: Debangan\_ghosh@srmap.edu.in
* Development Team: Jithendrasai Kilaru, Praveen Kumar, Biswadeep Guha Roy

**References**

* Documentation from existing inventory management systems
* **Google Scholar**: For research papers and case studies on inventory management.
* **GitHub**: To explore open-source inventory control projects.
* **Stack Overflow**: For resolving technical queries.
* **API Documentation**: Twilio for notifications, Google Charts for analytics.

**2. Overall System Description**

**2.1 Overview**

The "Inventory Control System" is a centralized software solution designed to digitize and optimize inventory operations. It integrates features like stock monitoring, order handling, and detailed reporting to replace manual processes.

**2.2 Key Features**

* Add, update, and delete inventory records.
* Monitor stock levels and trigger alerts for low inventory.
* Process orders and track their fulfillment status.
* Generate analytics and reports to guide decision-making.

**2.3 User Types**

* **Warehouse Operators**: Manage inventory data and update stock records.
* **Managers**: Access reports and monitor inventory trends.
* **Administrators**: Oversee system operations, handle user roles, and generate advanced reports.

**2.4 Technical Environment**

* Supported Platforms: Windows, Android
* Browsers: Chrome

**2.5 User Accessibility**

The system is accessible via web-based interfaces and mobile apps, requiring an active internet connection.

**2.6 Design/Implementation Constraints**

* Backend Technologies: Python (Flask/Django)
* Frontend Frameworks: React.js
* Databases: MySQL

**2.7 Assumptions and Dependencies**

* Users will have consistent internet access.
* Third-party integrations (e.g., email/SMS APIs) will be available for notifications.

**3. External Interface Specifications**

**3.1 User Interfaces**

* Intuitive and responsive design for web and mobile platforms
* Includes search capabilities, inventory filters, and real-time updates

**3.2 Hardware Requirements**

* Compatible with devices having at least 2GB RAM

**3.3 Software Integration**

* RESTful APIs for backend communication
* Integrations with email/SMS gateways for notifications

**3.4 Communication Standards**

* Secure data transmission via HTTPS

**4. Functional Features**

**4.1 Inventory Management Module**

**Description**

High priority: Provides tools to manage inventory items, including creation, modification, and deletion.

**Requirements**

* **FR-1**: Users can add inventory items with details such as name, category, quantity, and price.
* **FR-2**: The system updates stock levels automatically after transactions.
* **FR-3**: Low stock alerts are triggered for items below predefined thresholds.

**4.2 Order Management Module**

**Description**

Critical priority: Enables seamless creation, tracking, and processing of orders.

**Requirements**

* **FR-4**: Users can create orders specifying item types and quantities.
* **FR-5**: Stock levels are updated once an order is fulfilled.
* **FR-6**: The system tracks the status of all orders.

**4.3 Analytics and Reporting**

**Description**

Medium priority: Delivers insights into inventory trends and operational performance.

**Requirements**

* **FR-7**: Users can generate daily, weekly, and monthly reports.
* **FR-8**: Dashboards provide visualizations of stock levels and sales trends.

**5. Non-functional Requirements**

**5.1 Performance**

* **NFR-1**: Supports up to 500 concurrent users.

**5.2 Security**

* **NFR-2**: Encrypts sensitive data during storage and transmission.

**5.3 Usability**

* **NFR-3**: Designed for users with minimal technical knowledge.

**5.4 Availability**

* **NFR-4**: Ensures 99.9% uptime.

**5.5 Scalability**

* **NFR-5**: Handles increased data and user loads efficiently.

**6. Evaluation**

* Validate all requirements through stakeholder feedback.
* Conduct comprehensive testing to ensure compliance with specified functionality.
* Verify adherence to performance, scalability, and security benchmarks.

Prepared by: Debangan Ghosh  
Date: 24/01/2024