(5) Stock Maintenance System

1. Introduction

1.1 Purpose : The purpose of this document is to specify the functional and non-functional attributes stock Maintenance system. It aims to provide & replace manual methods of stock management with an automated, reliable and scalable digital solution

1.2 Scope of this document : This document defines the overall working and main objectives of the stock Maintenance system. It includes a description of the development cost and time required for the project.

1.3 Overview : The stock Management system will act as a centralized database of stock items. The system will enhance efficiency, reduce errors and provide real time visibility of stock levels to stakeholders.

2. General description
The Stock Maintenance System will cater to the needs of auditors, administrators, etc providing a standalone application with optional integration into ERP systems where each stock item must have a unique identifier.

3. Functional Requirements.
3.1 Stock Management
• Maintain stock item details - id, name, category, supplier, price, quantity.

3.2 Stock Transitions
- Record stock inflows and stock outflows
- Generate alerts for low-stock and re-order levels.

3.3 Reporting & Analysis
- Generate reports on current stock levels, stock movement and historical trends
- Provide graphical - candle bar - dashboards for managers and administrators.

4. Interface Requirements
4.1 User Interface
- Managers : view dashboard, update stock levels, generate reports
- Sales staff : Record stock usage and sales.
- Admin : Manage user accounts, audit logs and system settings.

4.2 Integration Interfaces
- Barcode / QR scanners for quick stock entry.
- Database integration for backend storage.

5. Performance Requirements
5.1 Response Time
- Stock updates must reflect within 2 seconds
- Search queries must return results in 3 seconds

5.2 Scalability
- Initial support of 500+ concurrent users and must handle 100000+ stock records with live updates.

5.3 Data Integrity : All transactions must maintain ACID properties.

6. Design constraints

6.1 Hardware Limitations
- Runs on standards desktops or mobile devices
- Barcode scanners or mobile scanning devices required for fast transactions and operations

6.2 Software Limitations
- Must support major browsers and backend related to relational database.
- Must comply with business data retention and audit policies.

7. Non-Functional Attributes

7.1 Security
- Role based authentication - admin, staff, manager.
- Passwords stored with encryption

7.2 Reliability
- Daily backups of database

7.3 Scalability
- System should allow horizontal scaling for large businesses and be able to accommodate future growth and expansion.

7.4 Portability
- Accessible via Windows, Linux, macOS and possess mobile responsive design.

7.5 Usability
- Simple and intuitive dashboard with minimal training required.
- Multilingual support for global business.

7.6 Reusability
- Reusable APIs for integration into ERP system.

7.7 Compatibility
- Compatible with common web browsers.

7.8 Data Integrity
- Maintain full transaction logs with timestamps and user IDs.
- Automatic validation of supplier and sales records.

Preliminary Schedule & Budget
The development of the stock Maintenance system is estimated to take 4.5 months with a budget of $90000. This includes project planning, development & testing and deployment phases.