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Stock Maintenance System

Problem Statement:

A company that deals in the distribution of stocks requires an efficient stock maintenance system to keep track of their inventory. The company needs to be able to monitor the quantity and movement of stocks across multiple locations in real-time.

The current manual system for tracking inventory is prone to errors and can be time-consuming. This leads to inaccuracies in inventory levels, delayed restocking, and ultimately, lost revenue due to stockouts or overstocking.

The company needs a robust, automated stock maintenance system that can track inventory levels, generate alerts for low stock levels, forecast future inventory needs, and streamline the process of restocking. The system should be user-friendly and accessible to authorized personnel from multiple locations, while ensuring data security and accuracy.

The objective of this project is to design and develop a Stock Maintenance System that will automate the process of inventory management, improve accuracy, reduce stock-outs, and ultimately increase revenue for the company.

Software Requirement Specification(SRS)

1 Introduction

1.1 Purpose of this document

The purpose of this document is to define the software requirement specification for the development of a Stock Maintenance System application that will be used to automate the day-to-day transactions in the stock market. This document will outline the functional and non-functional requirements, design constraints, and user interface specifications for the system. This document serves as the reference for the development team to ensure that the system meets the requirements of the clients and as well as for the stakeholders.

1.2 Scope of this document

The document outlines the requirements for the Stock Maintenance System, which is designed to automate the inventory management for a company that deals in the distribution of stocks. The system will enable the company to track inventory levels, generate alerts for low stock levels, forecast future inventory needs, and streamline the process of restocking. The system will be accessible to authorized personnel from multiple locations, ensuring data security and accuracy.

1.3 Overview

The Stock Maintenance System is an automated inventory management system designed to help the company maintain accurate inventory levels, reduce stockouts, and increase revenue. The system will include features such as inventory tracking, restocking alerts, and inventory forecasting to ensure that the company always has the right amount of stock on the hand. The system will also provide a use friendly interface for authorized personnel to access and manage inventory data from multiple locations. The system will be developed using modern technologies and programming languages and will adhere to industry best practices for security and performance.

2 General Description

The Stock Maintenance System is an inventory management software that will be developed for a company that deals in the distribution of stocks. The system will automate the process of inventory tracking, restocking, and forecasting to help the company maintain optimal inventory levels and reduce stockouts. The system will also be designed to provide a user friendly interface for authorized personnel to access and manage inventory data from multiple locations.

3 Functional Requirements

- **Inventory Tracking:** The system shall be able to track the quantity and movement of stocks across multiple locations in real-time.
- **Restocking Alerts:** The system shall generate alerts when inventory levels fall below a pre-defined threshold.
- **Inventory Forecasting:** The system shall be able to forecast the future inventory needs based on the historical data and current trends.
- **User Authentication:** The system shall require authorized personnel to log in with their username and password to access inventory data.
- **User Roles and Permissions:** The system shall provide different levels of access and permissions for different users roles, such as inventory managers and administrators.
- **Reporting and Analytics:** The system shall be able to generate reports and provide analytics on inventory levels, restocking, and other relevant metrics.
- **Integration:** The system shall be able to integrate with existing systems, such as the company’s accounting and purchasing systems.

4 Interface Requirements

- **User Interface:** The system shall provide a user-friendly interface for authorized personnel to access and manage inventory data.

- **Navigation:** The user interface shall provide intuitive navigation for accessing different features and functionalities.

- **Input and Output:** The user interface shall allow users to input and output inventory data in various formats, such as spreadsheets or CSV files.

- **Compatibility:** The user interface shall be compatible with multiple web browsers and mobile devices.

- **Accessibility**: The user interface shall adhere to the accessibility guidelines, such as to ensure that it is usable by people with disabilities.

5 Performance Requirements

- The system should have a response time of less than 2 seconds for most functions.
- The system should have a high level of availability and reliability, with a minimum uptime of 99.9%.
- The system should be scalable and able to handle increases in traffic and demand.
- The system should have adequate security measures to protect customer data and prevent unauthorized access.
- The system should have a backup and recovery mechanism to ensure business continuity in case of system failure or disaster.
- The system should comply with relevant industry standards and regulations for data privacy, security, and accessibility.
- The system should be able to handle a large volume of requests and transactions without performance degradation.
- The system must be able to respond quickly to user requests, especially those related to stock updates and inventory queries.
- The system should be available for use as much as possible, with minimal downtime or outages
- The system should be designed to use resources efficiently, including CPU, memory, and network bandwidth.

6 Design Constraints

- The system should have a user-friendly and intuitive interface.
- The system should follow industry-standard design principles and guidelines.
- The system should be responsive and adaptable to different screen sizes and resolutions.

- The system should follow a three-tier architecture with a presentation layer, business logic layer, and data access layer.
- The system should be modular and extensible to allow for future enhancements and modifications.
- The system should be designed to handle high traffic loads and large amounts of data.
- The system should use caching mechanisms to improve performance.
- The system should have a secure architecture that prevents unauthorized access and data breaches.
- The system should use encryption mechanisms to protect sensitive data.
- The system should have a backup and recovery plan in place to prevent data loss in case of security breaches.

7 Non-Functional Attributes

- **Reliability:** The system should be reliable, meaning it can consistently perform its functions without failure or error, and can recover from any failures that do occur in a timely manner.
- **Maintainability:** The system should be designed for ease of maintenance, such as through modular code, well-defined interfaces, and clear documentation, to reduce the time and effort required to maintain and enhance the system.
- **Scalability:** The system should be scalable, meaning it can accommodate growth in stock volume or changes in the number of users or transactions, without requiring significant changes or performance degradation.
- **Availability:** The system should be available, meaning it can be accessed by users when needed, with minimal downtime or interruptions, and can recover from any disruptions that do occur.
- **Performance:** The system should have acceptable performance, meaning it can respond to user requests in a timely manner, without significant delays or slowdowns.
- **Security:** The system should be secure, meaning it can protect sensitive stock data and transactions from unauthorized access, manipulation, or disclosure, and comply with relevant security standards.
- **Usability:** The system should be usable, meaning it can be used easily and effectively by users with different levels of experience or technical proficiency, with a clear and consistent interface that enables efficient and error-free stock maintenance tasks.

- **Compatibility:** The system should be compatible with other systems, tools, or platforms that may be used by the organization, to ensure seamless integration and interoperability across different systems.

8 Preliminary Schedule and Budget

The development of the Stock Maintenance System is estimated to take eight months. The project will include design, development, testing, and deployment phases. The project will be managed using agile development methodologies.Assuming a team of 5 developers, a project duration of 6 months, and an hourly rate of Rs. 1000 per developer, the cost for the development team would be Rs. 4,800,000. Other costs that may need to be factored into the budget include:
Testing and QA costs: The cost of testing and quality assurance activities may vary based on the complexity of the system and the testing approach. Assuming a testing budget of 10% of the total development cost, this would be an additional Rs. 480,000.

Project management and documentation costs: This could include the cost of hiring a project manager, technical writers, or other personnel involved in project management or documentation. Assuming a project management and documentation budget of 15% of the total development cost, this would be an additional Rs. 720,000.

Adding all these costs together, the total preliminary budget for the Stock Maintenance System would be approximately Rs. 6,000,000.