Title

Inventory Management System for Small and Medium Enterprises (SMEs)

1. Introduction

Small and Medium Enterprises (SMEs) play a vital role in economic growth, employment creation, and innovation. Despite their importance, many SMEs continue to manage inventory using manual methods such as paper-based records or basic spreadsheets. These approaches are prone to errors, data loss, inefficiency, and poor decision-making. An effective Inventory Management System (IMS) can help SMEs track stock levels accurately, reduce operational costs, and improve overall business performance.

2. Background of the Study

Inventory management involves supervising non-capitalized assets and stock items. Inefficient inventory control leads to problems such as overstocking, stock-outs, theft, and inaccurate reporting. With advancements in information technology, computerized inventory systems provide real-time data, improved accuracy, and enhanced reporting capabilities. However, many SMEs lack access to affordable and user-friendly inventory solutions tailored to their needs. This study proposes the design and implementation of a web-based Inventory Management System specifically for SMEs.

3. Problem Statement

Many SMEs rely on manual or semi-automated inventory management practices, which result in inaccurate stock records, delayed reporting, and increased operational costs. These challenges limit business growth and profitability. There is a need for a reliable, secure, and easy-to-use Inventory Management System that can help SMEs manage inventory efficiently and support informed decision-making.

4. Objectives of the Study

4.1 General Objective

To design and implement an Inventory Management System that improves inventory control and operational efficiency for Small and Medium Enterprises.

4.2 Specific Objectives

- To design a system for registering and managing products.
- To track inventory transactions (stock-in and stock-out).
- To manage supplier and sales records.
- To generate inventory and sales reports.
- To implement user authentication and access control.

5. Research Questions

- How can an Inventory Management System improve inventory accuracy in SMEs?
- What features are required to meet the inventory management needs of SMEs?
- How can the proposed system enhance decision-making and operational efficiency?

6. Scope of the Study

The study focuses on the design and implementation of a web-based Inventory Management System for SMEs. The system will cover product management, stock tracking, supplier management, sales recording, and report generation. The study will not include advanced accounting features or online payment processing.

7. Significance of the Study

- Helps SMEs reduce inventory-related losses.
- Improves accuracy and availability of inventory information.
- Enhances decision-making through timely reports.
- Serves as a reference for future academic and system development projects.

8. Literature Review (Summary)

Previous studies indicate that computerized inventory systems significantly improve inventory accuracy and operational efficiency. Web-based systems offer accessibility, scalability, and cost-effectiveness for SMEs. However, existing solutions are often complex or expensive, highlighting the need for a simplified and affordable system tailored to SMEs.

9. Methodology

9.1 System Development Methodology

The study will adopt the **Waterfall Model**, which includes requirements analysis, system design, implementation, testing, deployment, and maintenance.

9.2 Data Collection Methods

- Interviews with SME owners and staff
- Observation of existing inventory practices
- Review of relevant documents and literature

9.3 Tools and Technologies

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** PHP
- **Database:** MySQL
- **Development Tools:** VS Code, XAMPP

10. System Requirements

10.1 Functional Requirements

- User login and role management
- Product registration and updates
- Stock-in and stock-out recording
- Supplier and sales management
- Report generation

10.2 Non-Functional Requirements

- System security and data integrity
- User-friendly interface
- Reliability and performance
- Scalability

11. Expected Outcomes

- A functional Inventory Management System for SMEs
- Improved inventory accuracy and efficiency
- Reduced manual errors and operational costs

12. Project Schedule (Summary)

The project will be completed within the academic timeline, covering proposal approval, system development, testing, documentation, and final submission.

13. Conclusion

The proposed Inventory Management System aims to address inventory management challenges faced by SMEs by providing an efficient, secure, and user-friendly solution. Successful implementation of the system will enhance inventory control and support sustainable business growth.