Minor Project Report

on

Inventory Management System

Synopsis Report

Submitted by

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Of

(BACHELOR OF COMPUTER APPLICATION)

UNDER THE GUIDANCE OF

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At

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1. **Problem Statements**

- **Inaccurate stock tracking** caused by human error, leading to overstocking or stockouts.
- **Inefficiencies in CRUD (Create, Read, Update, Delete) operations,** resulting in time wastage and poor data handling.
- **Limited ability to organize and manage large datasets effectively,** hindering scalability and decision-making.

2. **Why Is This Particular Topic Chosen?**

- Inventory management is a critical component of business operations across industries.
- Existing systems are often overly complex and expensive.
- Many systems lack user-friendly interfaces, making them difficult to adopt for non-technical users.
- This project focuses on creating a cost-effective and efficient solution.
- The system is tailored specifically for small to medium-sized enterprises (SMEs), addressing their unique needs.
- It aims to streamline inventory processes while being accessible and user centric.

3**. Objectives Of the Project**

- Design and develop a responsive inventory management system for basic operations.
- Enable functionalities such as adding, updating, and deleting inventory data.
- Generate PDF reports for effective record-keeping and analysis.
- Ensure efficient storage and retrieval of inventory data using MySQL.
- Provide a user-friendly interface with HTML, CSS, and JavaScript for seamless interaction.
- Streamline inventory management processes and reduce manual errors.

4. **Scope Of the Project**

- The system is designed specifically for small and medium enterprises (SMEs) to manage inventory data effectively.
- While the current scope is limited to these core features, the system can be enhanced in the future with advanced functionalities such as analytics or multi-platform support.

5. **Methodologies Adopted**

- **Waterfall Model:** A sequential approach was followed, starting with requirement gathering, designing, development, testing, and deployment.
- **Frontend Development:**
  - HTML for structuring web pages.
  - CSS for styling and designing a user-friendly interface.
  - JavaScript for adding interactivity and functionality.
- **Backend Development:**
  MySQL (via XAMPP) for database management to manage CRUD (Create, Read, Update, Delete) operations.
- **Development Environment:** Visual Studio Code (VS Code) was used for writing, debugging, and organizing the code.
- **Testing and Debugging Tools:** Browser-based developer tools were utilized to ensure proper functioning of the system.

6. **Minimum Requirements of Hardware and Software**

- **Hardware Requirements:** PC or Laptop with at least 4GB RAM and 256GB storage.
- **Software Requirements:**
  - **Frontend Technologies:** HTML, CSS, JavaScript.
  - **Backend:** XAMPP (PHP, MySQL, and Apache Server)
- **Development Environment:** Visual Studio Code (VS Code)
- **Browser:** For testing and debugging.

7. **Testing Technologies Used**

- **Unit Testing:** Ensures that CRUD operations (add, update, delete) and PDF generation work correctly.
- **Integration Testing:** Evaluates the seamless functioning of frontend, backend, and database integration.
- **Browser-Based Testing:** Debugging and ensuring cross-browser compatibility using developer tools in Chrome, Opera GX and Microsoft Edge.

8. **What Contribution Would the Project Make?**

The project provides an efficient and user-friendly inventory management solution for small and medium enterprises. It minimizes manual errors, enhances operational efficiency, and simplifies inventory tracking and reporting. The system serves as a foundation for potential scalability, enabling SMEs to streamline their inventory processes and focus on core business activities.