Project Report: Inventory Management System

1. Introduction

The Inventory Management System project is designed to simulate a real-world warehouse management environment using MySQL. It provides an efficient and structured way to manage products, stock levels, warehouses, suppliers, and automatic alerts for low inventory. The project is built using SQL, stored procedures, and triggers to ensure smooth operations across inventory-related transactions.

2. Abstract

This project focuses on creating a scalable and normalized relational database to handle inventory for various products across multiple warehouses. It includes support for low stock alerts, stock transfer functionality, and vendor information. Triggers and stored procedures are implemented to automate and simplify administrative operations.

3. Tools Used

- MySQL Workbench
- SQL (DDL, DML, Triggers, Views, Stored Procedures)

4. Steps Involved in Building the Project

1. Designed normalized tables for Products, Warehouses, Suppliers, and Stock.
2. Populated the database with realistic sample data.

3. Created queries for checking stock levels and identifying low-stock products.
4. Implemented triggers to insert alerts when stock drops below a threshold.
5. Created stored procedures to facilitate stock transfers between warehouses.
6. Verified output using SQL queries to simulate inventory checks and alerts.

5. Conclusion

The Inventory Management System effectively demonstrates the application of core database concepts including schema design, data integrity, automation using triggers, and business logic implementation with stored procedures. This system can serve as a foundational backend for larger retail or inventory-based applications.