

Project Report: Warehouse Inventory Management System

1. Introduction

The Warehouse Inventory Management System is designed to efficiently track and manage the stock of products across multiple warehouse locations. It ensures real-time visibility of product availability, facilitates stock transfers, and alerts management when stock levels are low.

This project reflects a real-world approach to logistics and inventory operations in supply chain management.

2. Objectives

- To manage stock levels of products across warehouses.
 - To facilitate stock transfers between warehouses.
 - To automatically trigger alerts for low stock conditions.
 - To maintain data consistency using foreign keys and constraints.
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3. Database Design

The system includes the following main tables:

Table Name	Description
Suppliers	Contains supplier names and contact info.
Products	Details of all items including unit price and supplier.
Warehouses	Locations of product storage.
Stock	Mapping of product quantity per warehouse.
Low StockAlerts	Stores alerts when product quantity drops below threshold.

Each table is normalized to 3NF for efficiency and data integrity.

4. Key Features

Stock Management

The Stock table links products with warehouses and stores the current quantity.

Stock Transfer (Stored Procedure)

A stored procedure named Transfer Stock() transfers product stock from one warehouse to another. It handles both decrement from the source and increment to the destination.

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CALL Transfer Stock(1, 2, 2, 5); -- Transfers 5 Mouse from Central to East

 Low Stock Trigger

A trigger trg_low_stock automatically inserts into Low StockAlerts if stock falls below 10 units after an update.

5. Sample Reports

 Before Transfer

Product	Warehouse	Quantity
Laptop	Central Warehouse	10
Mouse	Central Warehouse	50
Keyboard	East Warehouse	20
Laptop	East Warehouse	5

 After Transfer (Mouse: 5 units moved from Central to East)

Product	Warehouse	Quantity
Laptop	Central Warehouse	5
Laptop	East Warehouse	5
Mouse	East Warehouse	5

The system reflects accurate real-time changes and is fully auditable.

6. Conclusion & Future Scope

The Warehouse Inventory Management System ensures seamless tracking of goods across multiple locations. It minimizes stockouts and overstocking by implementing real-time alerting and flexible stock transfer procedures.

Future Enhancements:

- Integration with barcode/RFID scanners.
- Web-based admin dashboard.
- Automatic reordering from suppliers based on stock levels.
- Role-based access control (admin, staff, manager).