Inventory Management System – SQL Project

# Project Overview

Objective:

Build a relational database to manage inventory, including products, suppliers, orders, and sales.

Goals:

• Track product stock

• Manage supplier orders

• Record and analyze sales

• Monitor low inventory

• Generate reports

# Database Design

Main Tables:

1. PRODUCTS – Item list and stock levels

2. SUPPLIERS – Vendor details

3. PURCHASE\_ORDERS – Supplier orders

4. PURCHASE\_ORDER\_ITEMS – Order line items

5. SALES – Stock movement from sales

(Note: Include EER diagram if presenting)

# Schema Creation Code

CREATE TABLE PRODUCTS (...);

CREATE TABLE SUPPLIERS (...);

CREATE TABLE PURCHASE\_ORDERS (...);

CREATE TABLE PURCHASE\_ORDER\_ITEMS (...);

CREATE TABLE SALES (...);

- Foreign keys maintain relational integrity

- Primary keys ensure unique IDs

# Data Insertion

INSERT INTO PRODUCTS VALUES (...);

INSERT INTO SUPPLIERS VALUES (...);

INSERT INTO PURCHASE\_ORDERS VALUES (...);

INSERT INTO PURCHASE\_ORDER\_ITEMS VALUES (...);

INSERT INTO SALES VALUES (...);

Used realistic data.

# Basic Queries

- View all stock: SELECT \* FROM PRODUCTS;

- Low stock alert: WHERE stock\_quantity < reorder\_level;

- Stock value: SUM(price \* stock\_quantity)

Purpose: Inventory review, tracking, budgeting

# JOIN Queries

- Products ↔ Sales

- Products ↔ Suppliers

- Purchase Orders ↔ Suppliers

Example:

SELECT P.name, S.quantity\_sold

FROM SALES S

JOIN PRODUCTS P ON S.product\_id = P.product\_id;

# Reports & Insights

- Top-selling products

- Monthly revenue

- Supplier-wise spending

- Unsold products

Example:

SELECT P.name, SUM(S.quantity\_sold)

FROM SALES S JOIN PRODUCTS P

GROUP BY P.name;

# Business Impact

✅ Track low stock items

✅ Evaluate supplier performance

✅ Understand sales trends

✅ Plan orders

✅ Prevent stockouts/overstocking

# Future Enhancements

- Add Triggers for auto stock updates

- Stored Procedures for reporting

- Connect to Power BI

- Add User Roles & Security

- Multi-location inventory

# Thank You

Questions?

Let’s talk inventory optimization through SQL!