

Retail Data Warehouse – Advanced SQL Insights for Business Strategy

Objective

To analyze retail performance using structured SQL queries on a simulated data warehouse built in MySQL Workbench. The project delivers strategic business insights through advanced querying.

Dataset Overview

The project uses a normalized retail data warehouse with the following 7 tables:

- customers
- products
- orders
- order_items
- inventory
- employees
- store_locations

Data includes customer demographics, order history, product catalog, inventory stock levels, employee sales handling, and regional store details.

Business Insights Delivered

1. Top 5 Selling Products by Quantity Sold
2. Monthly Revenue Trends using order dates and revenue formulas
3. Top 5 Customers by Total Spend (with discount considered)
4. Inventory Stock Alerts (low stock based on reorder level)
5. Region-wise Sales Performance
6. Employee-wise Revenue Generation

SQL Techniques Used

- Table Joins (INNER JOIN across 2 to 4 tables)
- Aggregation Functions: SUM, ROUND
- Filtering: WHERE clause for low stock logic
- Sorting & Ranking: ORDER BY + LIMIT
- Date Formatting using DATE_FORMAT()
- Revenue calculation including discount logic