SQL Sales Analytics Capstone Project

Project Overview

This project focuses on analyzing sales, customer, and product data using SQL. The goal was to convert raw transactional data into meaningful business insights such as top-performing customers, profitable products, sales trends, customer purchasing behaviors, and revenue analysis.

Problem Statement

A retail business needed to understand which customers generate the most revenue, which products sell the most, how transactions vary over time, and overall purchasing behavior to support better marketing, product strategy, and financial decisions.

Dataset Description

1. customer_dim.csv – Customer profiles including ID, name, city, contact, and demographics.

2. product_dim.csv – Product details including product ID, name, category, and price.

3. sales_transactions.csv – Transaction ID, product ID, customer ID, quantity, and sale date.

SQL Analysis Performed

- Data retrieval of customers, products, and sales transactions.

- Customer analytics such as high-value customers, product variety, and purchase frequency.

- Product analytics including revenue, demand, category performance.

- Sales analytics including revenue calculation, LAG-based comparison, trends, and performance.

- SQL techniques used: INNER JOIN, LEFT JOIN, GROUP BY, ORDER BY, SUM, COUNT, DISTINCT, LAG().

Key Insights Obtained

Customer Insights:

- Top 5% customers contributed major revenue.

- Repeat and high-value customers identified.

- Low-frequency customers identified for targeted marketing.

Product Insights:

- Few products generate majority revenue.

- Some products show low demand.

- Category-wise demand patterns identified.

Sales Insights:

- Daily/monthly sales fluctuated with visible peak days.

- LAG analysis revealed rising/falling trends.

- Consistent increase in total sales volume.

Project Structure

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data/

queries/

report/

README.md

Technologies Used

SQL, Joins, Window Functions, Aggregations, Data Cleaning.

Author

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