Customer Behavior & Sales Analytics Dashboard

Project Overview

This project is an end-to-end data analytics case study focused on analyzing customer behavior, sales performance, and revenue patterns using SQL, Python, and Power BI.
The objective is to generate actionable business insights that support data-driven decision-making.

Business Objective

The project aims to answer key business questions such as:

- **How revenue is distributed across customers, locations, seasons, and payment methods**
- **Which customer segments contribute most to repeat purchases**
- **What factors influence customer purchasing behavior**
- **How businesses can optimize pricing, promotions, and payment strategies**

Key Insights Generated

- **Revenue contribution by different customer segments**
- **Repeat versus one-time customer analysis**
- **Seasonal and location-based sales trends**
- **Preferred payment methods by customer demographics**
- **Identification of high-value customers and purchase frequency patterns**

Project Structure

├── README.md

├── Business_Problem.pdf

├── Data/

│ └── customer_data.csv

├── Python_Analysis.ipynb

├── SQL_Insights.pdf

├── PowerBI_Dashboard.pbix

├── PowerBI_Dashboard.pdf

└── Final_Presentation.pdf

Tools and Technologies Used

- SQL (PostgreSQL) for querying and analysis
- Python (Pandas, NumPy) for data cleaning and exploratory analysis
- Power BI for interactive dashboards and KPI visualization
- CSV files for raw data storage
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Power BI Dashboard Overview

- KPI cards for total revenue, total customers, and repeat purchase percentage
- Interactive slicers for location, season, and payment method
- Revenue distribution and trend analysis visuals
- Customer segmentation charts
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SQL Analysis Methodology

Each SQL insight includes:

- Clearly defined business question
- Optimized SQL query
- Explanation of business relevance
- Screenshot of query output for validation

Business Impact

This analysis enables organizations to:

- Improve customer targeting and segmentation
- Optimize sales and payment strategies
- Identify high-value customers
- Support strategic business decisions with data

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