رواد مصر الرقمية

وزارة الاتصـــــالات
وتكنولوجيا المعلومات

Super Store Sales Analysis

InsightSquad Team

7 May 2025

Problem:

Raw sales data from the Super Store is large and complex, making it difficult for management to extract meaningful insights for strategic decision-making.

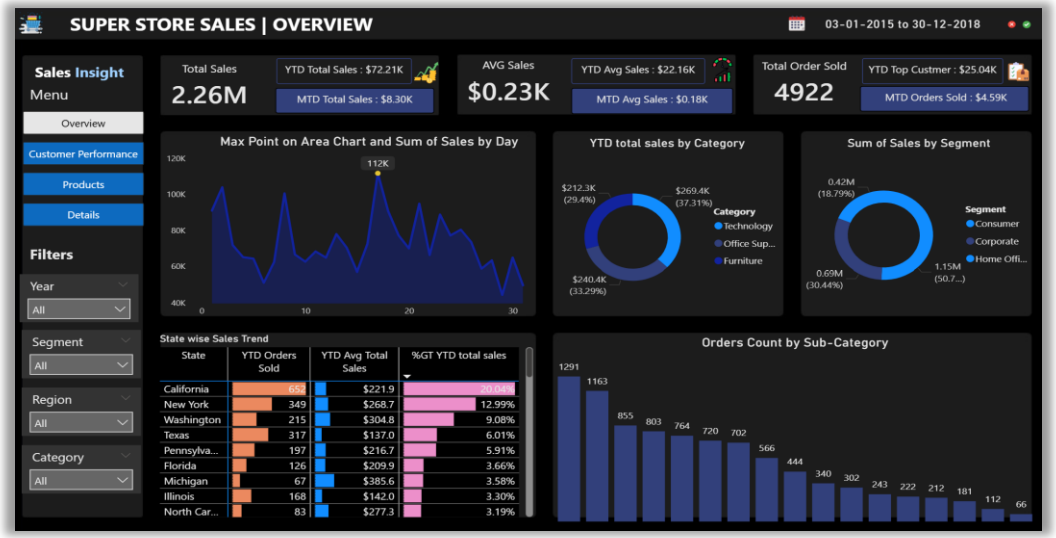
Proposed Solution:

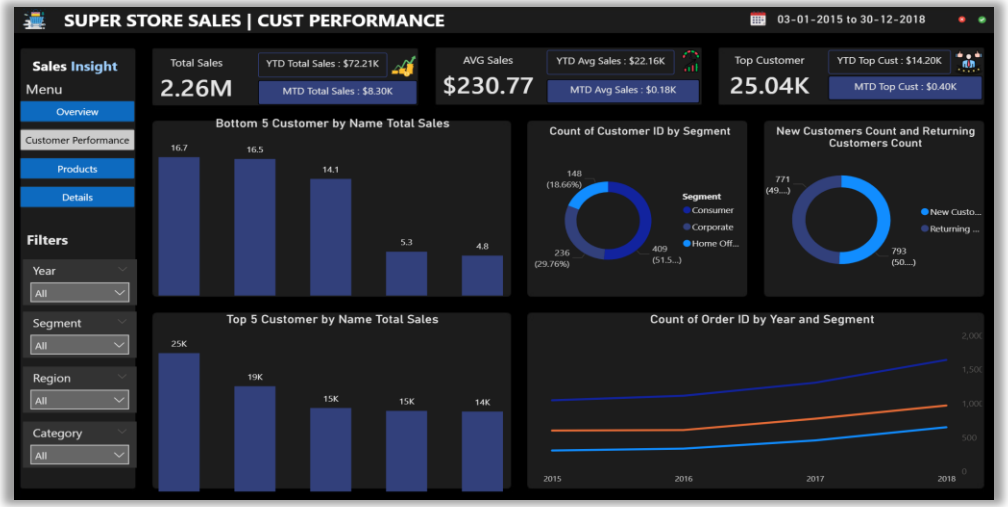
A comprehensive analysis of sales data using tools like Power BI to create interactive dashboards and reports that highlight key performance indicators (KPIs), best-selling products, low-performing regions, and sales trends over time.

Unique Value Proposition:

- Easy-to-read visual dashboards
- Ability to filter data by region, product, or category
- Provides actionable insights to support smarter business decisions

1. **Accessing the Dashboard:**
    1. When the user opens Power BI, they immediately see the key performance indicators such as total sales, profits, and other relevant metrics in an interactive visual format (charts/graphs).
2. **Interacting with Filters:**
    1. The user can apply filters to narrow down the data by:
        1. Time periods (today, week, month, year).
        2. Categories (e.g., products, geographic regions).
    2. These filters allow the user to focus on specific data points that are relevant to their analysis.
3. **Drill-Through for In-Depth Analysis:**
    1. The user can click on specific items within the charts (e.g., sales for a specific product or region) to get detailed insights.
    2. This feature allows the user to drill down into data for more granular analysis.
4. **Accessing Custom Reports:**
    1. Based on the filtered data, the user can create custom reports such as:
        1. Daily, weekly, or monthly performance reports.
        2. Reports based on specific regions or products.
5. **Making Data-Driven Decisions:**
    1. After analyzing the data, the user can make strategic decisions such as:
        1. Promoting top-selling products.
        2. Focusing sales strategies on regions with lower performance.





Focus on Usability & User Experience:

1. **Easy Interaction** with filters and charts.
2. **Clear Data Presentation** on the dashboard.
3. **Fast Response Time** when applying filters or interacting with visuals.

End Users + Features

Primary User Personas:

1. Business Owners / Managers:

Track overall sales performance, profitability, and trends.

2. Store Managers:

Manage store-level performance and inventory.

3. Data Analysts:

Analyze sales data and generate detailed reports.

Key Features:

1. Interactive Dashboards:

Easy-to-read visuals for real-time performance.

2. Customizable Filters:

Narrow down data by time, product, or region.

3. Sales Trend Analysis:

Visual representation of trends over time.

4. Product Performance Monitoring:

Track best and worst-selling products.

5. Automated Reporting:

Save time with automatic report generation.

How Features Solve User Problems:

- **Business Owners:** Quick strategic decisions with real-time data.
- **Store Managers:** Improved inventory management and sales tracking.
- **Data Analysts:** Simplified analysis and custom reports for actionable insights.

Data Structure

Database Architecture:

-**Type**: **Relational Database** (Used for structured data with defined relationships between entities).

Key Entities:

1.Sales Data:

Contains information like product ID, sale date, quantity sold, and total sales value.

2.Product Data:

Includes product details like name, category, price, and stock quantity.

3.Store Data:

Contains information about each store location and sales targets.

Relationships:

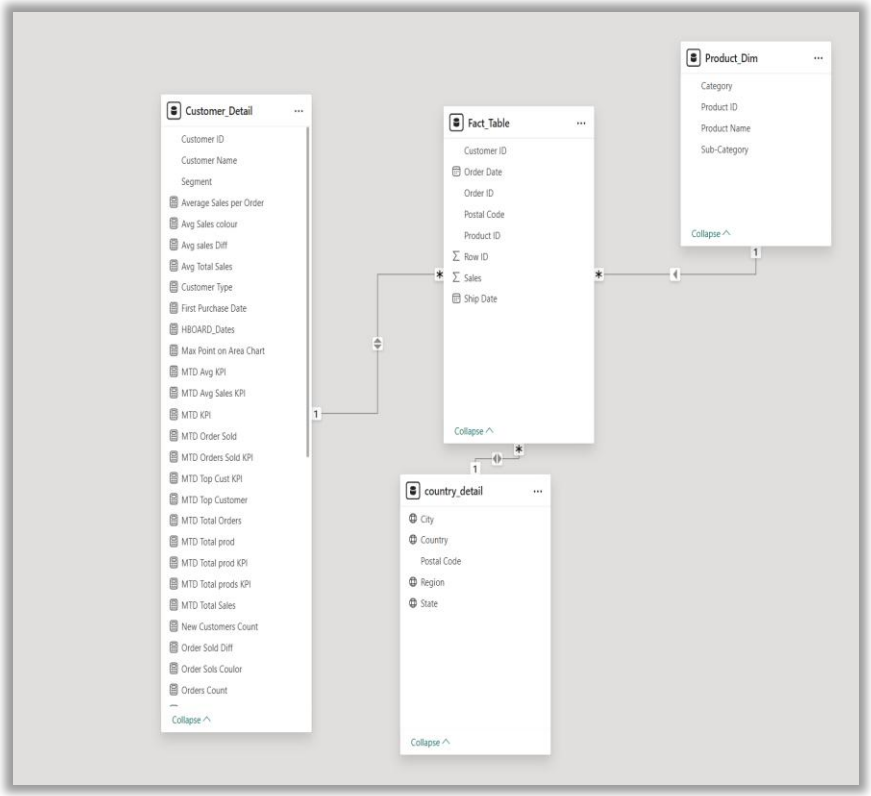
-**Sales Data** is linked to **Product Data** by product ID.
-**Sales Data** is linked to **Store Data** by store ID.

Data Flow:

-**Collection**: Data is collected through sales transactions in the store.
-**Storage**: Data is stored in CSV files or a relational database.
-**Access**: Data is queried and analyzed using Power BI to generate insights.

CSV File Details:

-**Features**: Product ID, Sale Date, Quantity Sold, Total Sales, etc.
-**Shape**: Rows represent individual sales transactions, columns represent attributes.
-**Techniques Used**: Data preprocessing and cleaning (removing duplicates, handling missing values, etc.).



Programming Languages + Frameworks

Main Programming Languages Used:

1. Python: Used for data analysis and backend processing.
2. SQL: For querying relational databases and handling data storage.

Frameworks/Tools Used:

2. Power BI: Used for data visualization and creating interactive dashboards.
2. Pandas: Python library for data manipulation and cleaning.
3.Matplotlib/Seaborn: Used for data visualization in Python.

Supporting Technologies:

1.CSV Files:Used for storing and loading sales and product data.

Design Tools:

Figma

Live Application + Test

Current State of the Application:

•**Status**: **Beta Version**

The application is currently in the beta phase, being tested internally to ensure performance before the final release.

Key Testing Phases:

1. Unit Testing:

Each component of the system has been tested individually to ensure it works as expected.

2. Integration Testing:

The interaction between different system components has been tested to ensure seamless integration.

3. System Testing:

The entire system has been tested to ensure all functions work together correctly.

Quality Assurance:

•Multiple tests have been conducted to identify and fix bugs.

•Any issues discovered during testing are being addressed to improve performance before the final release.

Deliverables (Reports, etc.)

Reports and Documentation to be Provided:

1.Technical Specifications:

Detailed documentation of the application architecture, technologies used, and system requirements.

2.User Manual:

A guide for users on how to interact with the application, including instructions on using features and functionalities.

3.Test Reports:

Summary of the testing process, test cases, and results.

4.Data Analysis Reports:

Insights and trends derived from the sales data.

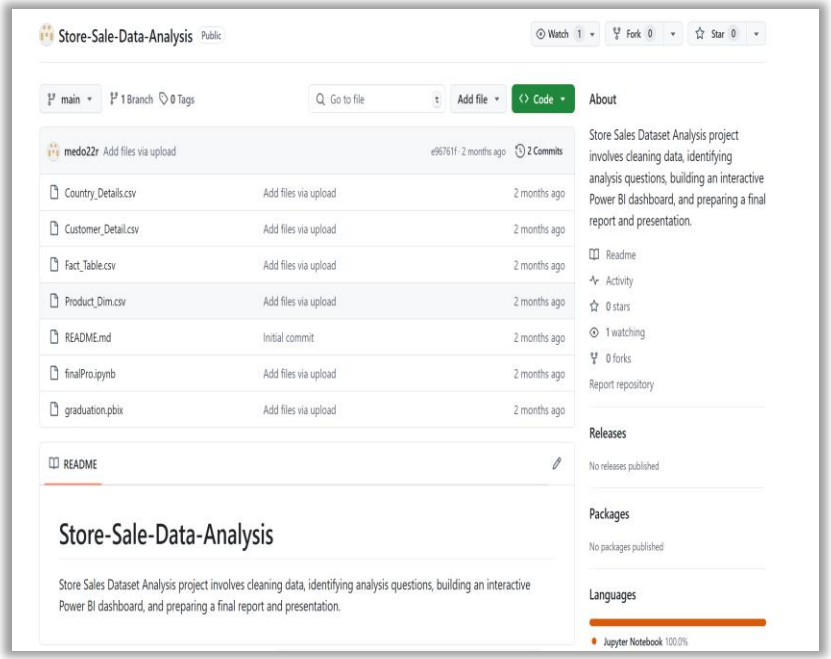
Other Final Products:

1.Working Application:

Fully functional app, ready for deployment.

2.Source Code Repository:

GitHub repository containing the application’s source code and related files.



Project Team

Team Roles & Responsibilities

1. Abdelhameed Reda (Team Leader) : Project Management and Analyzing data and extracting key fraud insights and SQL queries.
2. Huda Gomaa: Responsible for data analysis, initial exploration, and ML (Python)
3. Nagah Ramadan: On designing reports and visualizations using Power BI (Figma)
4. Reda Adel: Responsible for cleaning and preparing data for analysis.
5. Nouran Medhat

Collaboration Methods:

- Weekly meetings
- Notion
- Github

Thank You

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Any feedback?