Retail Sales & Profitability Dashboard – Power BI

📌 1. Introduction

This project aims to analyze a retail dataset (Superstore Sales) to uncover insights related to sales performance, profit trends, product-level profitability, and regional performance. The final outcome is an interactive Power BI dashboard that provides business users with a clear, visual summary to support data-driven decision-making.

□ 2. Abstract

Using Python for initial data cleaning and Power BI for visualization, we built a complete dashboard highlighting key KPIs such as total sales, profit, profit margin %, and quantity sold. The dashboard includes region-wise, category-wise, and time-based performance trends, as well as loss-making areas.

□ 3. Tools Used

- **Python (Pandas)**: For data cleaning, formatting, and metric calculations
- **Power BI Desktop**: For dashboard creation, DAX measures, interactivity
- **Excel (optional)**: For dataset preview and manual checks

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🔄 4. Steps Involved

🔷 Data Preparation (Python)

- Loaded the Kaggle Superstore Sales dataset
- Cleaned nulls, converted sales to float, dates to datetime
- Created Profit Margin % column
- Exported cleaned data to CSV for Power BI

🔷 Dashboard Creation (Power BI)

- Loaded cleaned CSV
- Created DAX measures: Total Sales, Total Profit, Total Quantity, Profit Margin %
- Added visuals:
    - KPI cards
    - Sales/Profit trend by month & year
    - Sales by category/segment
    - Profit by sub-category and region
    - Map of sales/profit by country
    - Pie chart for segment distribution
- Added slicers for interactive filtering (category, region)

🎯 5. Key Insights

- **Highest sales** were observed in the **Technology** category, while **Furniture** had comparatively lower profit margins.
- **Central region** was the top-performing in terms of both sales and profit.
- Some **sub-categories like Tables and Bookcases** showed negative profit margins, suggesting a review of pricing or stock.
- Sales peak during **Q3 and Q4**, showing strong seasonal trends.
- **Corporate** and **Consumer** segments account for over 80% of total sales.

✅ 6. Conclusion

This Power BI dashboard provides a clear and interactive overview of the company's retail performance. By combining data processing in Python with visualization in Power BI, we were able to build a complete business intelligence solution. The dashboard can help management make faster, data-informed decisions related to marketing, inventory, and sales strategy.