Sales Performance & Profitability Dashboard

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1. Project Objective

The objective of this project is to analyze historical retail sales data to evaluate overall sales performance, profitability, and regional trends. The project aims to transform raw transactional data into meaningful business insights by performing data cleaning, KPI analysis, and dashboard visualization using Microsoft Excel.

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2. Dataset Overview

2.1 Data Source

The dataset used for this project is the **Sample – Superstore** dataset, containing retail transaction records.

2.2 Dataset Size

- **Initial number of rows:** 9,995
- **Initial number of columns:** 21
- **Final number of columns after cleaning & transformation:** 23

Additional columns were created during the data preparation stage to support better analysis and reporting.

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3. Dataset Structure

3.1 Key Columns Included

- **Order Information:**
    - Row ID
    - Order ID
    - Order Date
    - Ship Date
    - Ship Mode
- **Customer Information:**
    - Customer ID
    - Customer Name

    - Segment
- **Geographical Information:**
    - Country
    - City
    - State
    - Postal Code
    - Region
- **Product Information:**
    - Product ID
    - Category
    - Sub-Category
    - Product Name
- **Sales Metrics:**
    - Sales
    - Quantity
    - Discount
    - Profit

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4. Tools & Technologies Used

- **Microsoft Excel**
    - Power Query (Data cleaning, transformation, and standardization)
    - Excel Tables
    - Pivot Tables
    - Pivot Charts
    - Slicers
    - KPI Cards
    - Conditional Formatting
    - Data Validation & Formatting

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5. Data Cleaning & Preparation

To ensure accuracy, consistency, and reliability, extensive data cleaning was performed using Power Query and Microsoft Excel before analysis. The following steps were executed:

5.1 Duplicate Record Removal

Duplicate records were identified and removed using Power Query to ensure each transaction was counted only once. This step prevented duplication in sales, profit, and order-level analysis, resulting in accurate KPI calculations.

5.2 Removal of Extra Spaces

Leading, trailing, and unnecessary spaces were removed using Power Query from multiple text columns including:

• Customer Name

• Product Name

• Category

• Sub-Category

• State

• Ship Mode

This ensured consistent grouping and prevented incorrect aggregation in Pivot Tables.

5.3 Cleaning Undefined and Invalid Characters

Undefined symbols, unwanted signs, and invalid characters were removed from relevant columns using Power Query. This improved data readability and prevented errors during filtering, sorting, and visualization.

5.4 Handling Mixed Date Formats

The Order Date and Ship Date columns contained inconsistent formats, including:

• Date format

• Date-time format

• Text-based date values

These inconsistencies were resolved using Power Query by:

1. Removing unnecessary time components from date-time values
2. Converting text-based date values into valid date formats
3. Standardizing all date entries into a single, consistent date format

This step enabled accurate time-based analysis such as monthly trends and year-wise filtering.

5.5 Removal of Unnecessary Elements

Redundant formatting issues and non-essential elements were removed to streamline the dataset and improve performance during analysis.

5.6 Creation of Additional Analytical Columns

During the cleaning and preparation phase, additional columns were created, increasing the total number of columns from 21 to 23. These columns were added to support enhanced analysis and reporting.

5.7 Final Data Validation

After cleaning:

• All columns were validated for correct data types

• Numeric columns were verified for calculation accuracy

• Date columns were confirmed to be consistent and usable for trend analysis

✓ Outcome of Data Cleaning

After cleaning and preparation:

• The dataset contained 9,995 clean and validated records

• All categorical values were standardized

• Date fields were fully normalized

• The dataset was ready for Pivot Table analysis and dashboard creation

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6. Key Performance Indicators (KPIs)

The following KPIs were calculated and displayed as KPI cards:

1. **Total Revenue** – Sum of Sales
2. **Total Profit** – Sum of Profit
3. **Total Orders** – Count of unique Order IDs

These KPIs provide a high-level summary of overall business performance.

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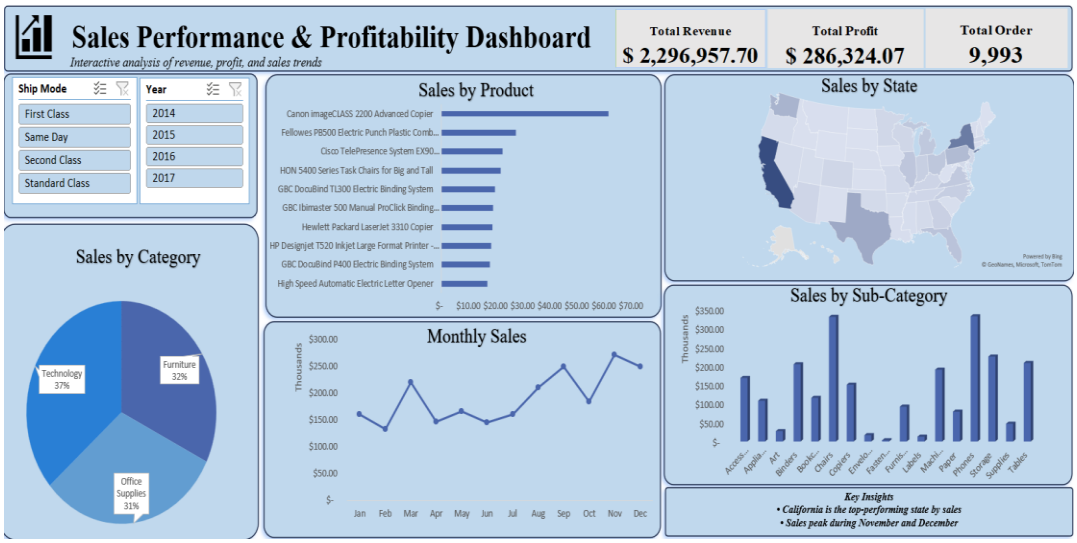
7. Dashboard Design & Visualizations



An interactive dashboard was created using Pivot Tables and Pivot Charts.

7.1 Visualizations Used

1. **Sales by Product (Top 10)** – Horizontal bar chart
2. **Sales by Category** – Pie chart
3. **Sales by Sub-Category** – Column chart
4. **Monthly Sales Trend** – Line chart
5. **Sales by State** – Map visualization

7.2 Interactivity

Slicers were added to allow dynamic filtering by:

- Ship Mode
- Year

These slicers enable users to interactively explore sales and profit trends across different dimensions.

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8. Key Insights

The dashboard analysis revealed the following insights:

1. **California is the top-performing state by sales**, contributing the highest revenue among all states
2. **Sales peak during November and December**, indicating strong seasonal demand

3. **Technology category contributes the highest share of revenue**, followed by Furniture and Office Supplies

These insights help identify high-performing regions, product categories, and seasonal patterns.

Conclusion

The Sales Performance & Profitability Dashboard successfully transforms raw retail data into meaningful business insights. By combining robust data cleaning, KPI analysis, and interactive visualizations, the dashboard enables stakeholders to quickly understand performance trends and make informed decisions. The project demonstrates strong skills in Excel-based data analysis, dashboard design, and business insight generation.

Future Enhancements

1. Add Profit Margin (%) KPI
2. Perform customer behavior analysis
3. Extend analysis to Power BI for advanced reporting
4. Incorporate forecasting for future sales trends