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## **Superstore Analysis**

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## **Abstract**

This analysis utilizes Tableau to delve into the Superstore dataset and reveal valuable insights into sales trends, customer behavior, and product performance. By employing data visualization techniques, we aim to identify opportunities for improvement and optimization within the business. Key areas of exploration include examining overall sales trends, top-performing product categories and subcategories, and regional sales variations. Additionally, we will identify customer segments based on demographics, purchase behavior, and profitability, analyze product profitability, sales, and customer preferences to optimize inventory and marketing strategies, and investigate regional sales patterns, identifying high-potential markets, and understanding the impact of shipping costs on profitability. Through the application of Tableau's powerful visualization capabilities, we aim to present actionable insights that can inform strategic decision-making and drive business growth.

## **Introduction**

In today's competitive business landscape, data-driven insights are essential for making informed decisions and achieving sustainable growth. This analysis leverages the power of Tableau to explore the Superstore dataset and extract valuable insights into sales trends, customer behavior, and product performance. By employing a comprehensive data visualization approach, we aim to uncover hidden patterns, identify opportunities for improvement, and ultimately drive business success.

This dashboard enables users to monitor essential metrics such as total sales, count of people, along with demographic insights like age and gender distribution of customers. Additionally, it tracks the geographical spread of sales across states

and identifies the origins of categories, distinguishing between Indian and foreign sources.

This analysis delves into the Superstore dataset using Tableau to uncover valuable insights into sales trends, customer behavior, and product performance. By employing data visualization techniques, we aim to identify opportunities for improvement and optimization within the business.

**Key areas of exploration include:**

- **Sales Analysis:** Examining overall sales trends, top-performing product categories and subcategories, and regional sales variations.
- **Customer Segmentation:** Identifying customer segments based on demographics, purchase behavior, and profitability.
- **Product Performance:** Analyzing product profitability, sales, and customer preferences to optimize inventory and marketing strategies.
- **Geographic Analysis:** Investigating regional sales patterns, identifying high-potential markets, and understanding the impact of shipping costs on profitability.

Through the application of Tableau's powerful visualization capabilities, we aim to present actionable insights that can inform strategic decision-making and drive business growth.

## **Objective**

The primary objective of conducting a superstore analysis using Tableau is to gain deep insights into the business operations and identify areas for improvement.

This analysis aims to:

1. Understand Sales Trends:

- Identify trends in overall sales and revenue over time.
- Analyze seasonal variations and cyclical patterns in sales.
- Determine the impact of promotions and discounts on sales.

## 2. Analyze Product Performance:

- Identify top-selling and low-performing products.
- Analyze product profitability and margin analysis.
- Identify opportunities for product bundling and cross-selling.

## 3. Segment Customers:

- Identify customer segments based on demographics, purchasing behavior, and profitability.
- Analyze customer lifetime value (CLTV) and customer churn.
- Develop targeted marketing strategies for different customer segments.

## 4. Evaluate Geographic Performance:

- Analyze regional sales performance and identify high-potential markets.
- Understand the impact of shipping costs and delivery times on sales.
- Optimize distribution networks and logistics operations.

## 5. Identify Opportunities for Improvement:

- Identify opportunities to increase sales and revenue.

- Optimize inventory levels and reduce stockouts.
- Improve customer satisfaction and retention.

By achieving these objectives, businesses can make data-driven decisions to improve their operations, increase sales, and enhance customer satisfaction.

## Materials

The Superstore dataset is a popular sample dataset provided by Tableau to practice data visualization and analysis techniques. It's a simulated dataset that represents sales data for a fictional retail store.

### Key Data Points:

The dataset typically includes the following fields:

- **Order Information:** Order ID, Order Date, Ship Date, Ship Mode
- **Customer Information:** Customer ID, Customer Name, Segment, City, State, Country, Postal Code, Region
- **Product Information:** Product ID, Category, Sub-Category, Product Name
- **Sales Information:** Sales, Quantity, Discount, Profit

### Data Source:

The dataset is usually provided as an Excel file or a Tableau Public workbook. You can download it directly from the Tableau website or access it through the Tableau Public platform.

### Note:

- The specific fields and data points may vary slightly between different versions of the dataset.
- The dataset is intended for educational and practice purposes and may not represent real-world sales data.

By analyzing this dataset, you can gain valuable insights into sales trends, customer behavior, product performance, and geographical patterns.

# Methodology

The methodology of this superstore analysis dashboard project includes several key phases, from data preprocessing and analysis to visualization and dashboard design. Here is a detailed breakdown:

## 1.Data Preprocessing:

### 1. Data Collection:

- **Source:** Acquire the Superstore dataset from Tableau Public or other reliable sources.

### 2. Data Cleaning:

- **Handling Missing Values:** Identify and address missing values in fields like Order ID, Customer Name, Product Name, Sales, etc. Consider imputation techniques or removing rows with excessive missing data.
- **Data Consistency:** Ensure data consistency by standardizing formats for dates, currencies, and text fields.

### 3. Data Transformation:

- **Data Aggregation:** Aggregate data at different levels (e.g., daily, weekly, monthly) to analyze trends over time.
- **Calculated Fields:** Create calculated fields to derive new insights:
  - **Sales per Customer:** Calculate the average sales per customer.
  - **Product Profit Margin:** Calculate the profit margin for each product category.
  - **Customer Segmentation:** Segment customers based on purchase frequency or total sales.
- **Data Joining:** If necessary, join multiple datasets (e.g., customer demographics and order data) to gain a more comprehensive view.

## 2.Data Analysis:

### 1. Sales Analysis:

- **Time Series Analysis:** Analyze sales trends over time (daily, weekly, monthly, yearly).
- **Product Performance Analysis:** Identify top-selling and low-performing products.
- **Customer Segmentation Analysis:** Analyze sales by customer segment (e.g., corporate, consumer, home office).

### 2. Geographic Analysis:

- **Regional Analysis:** Analyze sales by region, state, or city.

- **Map Visualization:** Create maps to visualize sales distribution geographically.
- 3. **Customer Analysis:**
  - **Customer Segmentation:** Segment customers based on demographics, purchase behavior, and profitability.
  - **Customer Lifetime Value (CLTV) Analysis:** Calculate CLTV to identify high-value customers.
  - **Customer Churn Analysis:** Analyze customer churn rates and identify factors influencing churn.

### 3. Dashboard Design:

1. **Dashboard Layout:** Design an intuitive and visually appealing dashboard layout.
2. **Visualizations:** Create various visualizations to convey insights:
  - **Line Charts:** To show trends over time (e.g., sales, profit).
  - **Bar Charts:** To compare categorical data (e.g., sales by product category).
  - **Pie Charts:** To show the distribution of categorical data (e.g., sales by region).
  - **Maps:** To visualize geographic data (e.g., sales by state).
  - **Table:** To display detailed data.
3. **Interactivity:** Implement interactive features like filters, drill-down capabilities, and tooltips to allow users to explore data dynamically.
4. **Storytelling:** Create a narrative using visualizations and text to guide users through the insights.

By following these steps, you can create a comprehensive and informative Superstore Sales Analysis dashboard that provides valuable insights for decision-making.

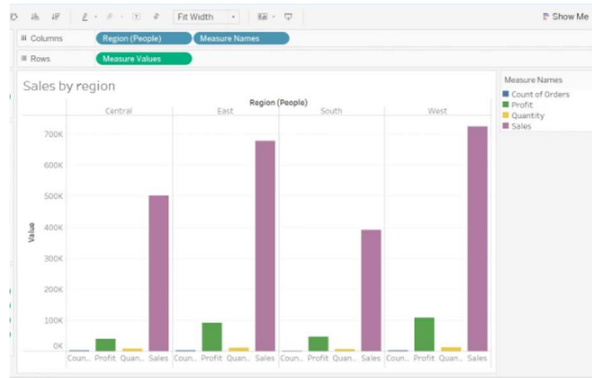
### 4. Data Visualization

- After analysis, data is visualized using different charts and graphs to make the insights easily interpretable and visually appealing.
- **Overview Section:**
  - **KPIs (Key Performance Indicators):** Display key metrics like total sales in large, bold text at the top of the dashboard for quick reference.



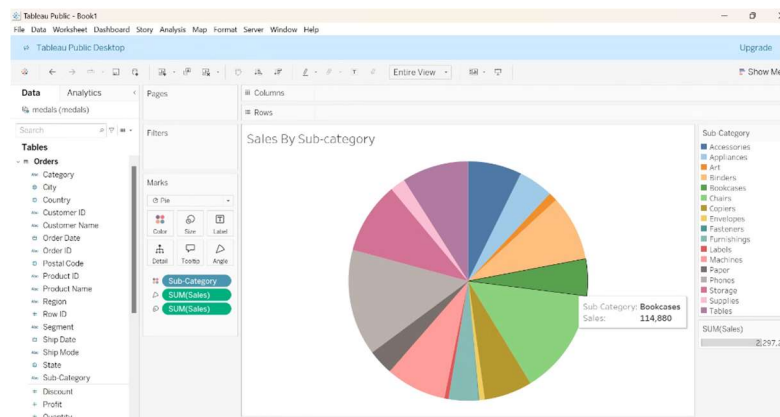
- **Exploring sales over people:**

- **Bar Chart:** Analyze sales data across different regions and values, such as profits, quantity, or count. Uncover the factors driving sales performance and their impact on overall revenue.



**Observation:** People from west region are ordering more.

- **Analysing product performance (Pie Chart):** Analyze product profitability to make informed decisions about inventory management and pricing strategies.

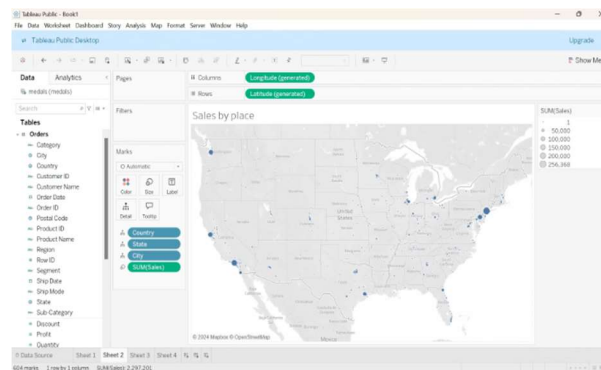


**Observation:** The percentage of sales of chairs is more as compared to other items.

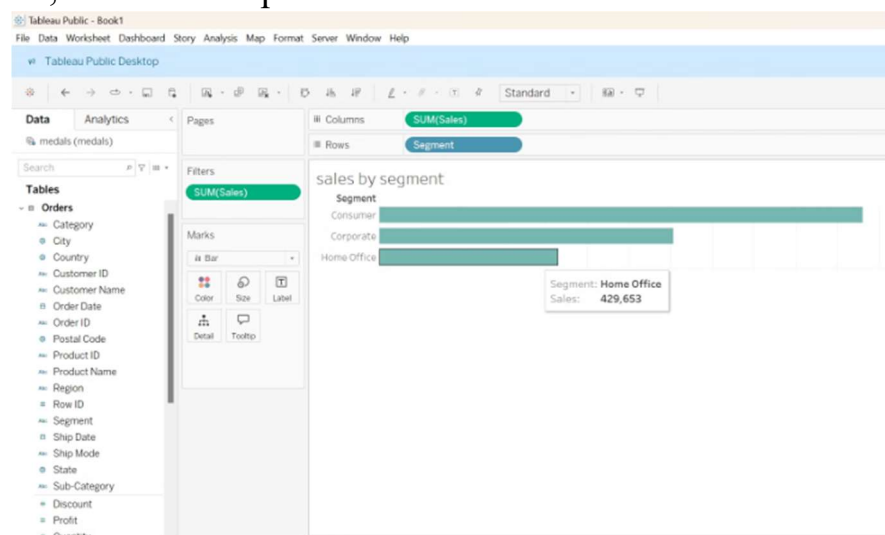
- **Geographic Analysis:**

- **Identify top customers and regions:** Visualize sales performance across different regions and territories to pinpoint high-potential areas.

Develop tailored marketing and sales strategies to better serve top customers and regions.

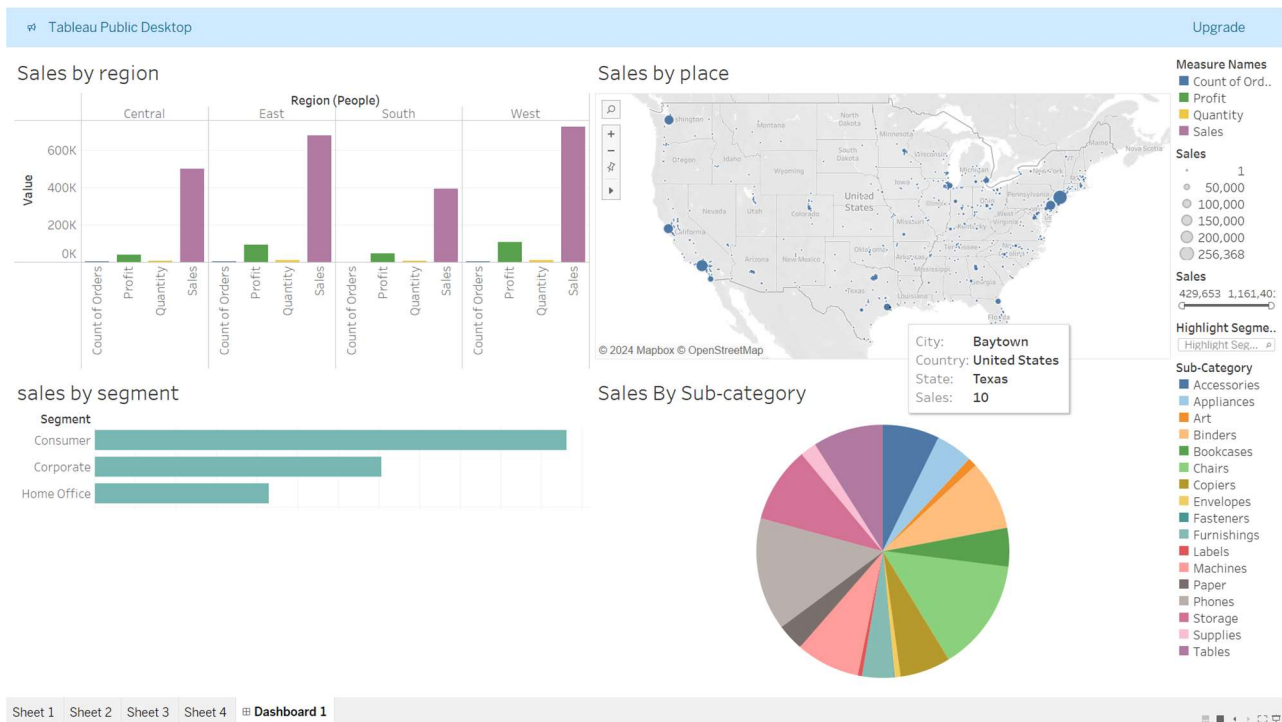


- **Exploring sales over segment:**
  - **Horizontal bar chart:** Represent the flow of sales over segments in the areas of consumer, home and corporate.



**Observation:** The Consumer segment typically generates the highest sales volume, indicating strong demand for products catering to individual needs.

# Dashboard



## Conclusion

In conclusion, this Superstore Sales Analysis dashboard provides a comprehensive and insightful view of the company's sales performance. By leveraging data visualization techniques, we have been able to identify key trends, patterns, and opportunities for improvement.

The dashboard offers a range of visualizations, including charts, maps, and tables, to explore sales data at different levels of granularity. This allows users to gain a deeper understanding of customer behavior, product performance, and regional sales trends.

By analyzing customer segmentation and product profitability, the dashboard empowers decision-makers to make informed choices about product strategies,

marketing campaigns, and inventory management. Furthermore, the geographic analysis helps identify high-potential markets and optimize distribution networks.

Overall, this dashboard serves as a valuable tool for monitoring and optimizing the Superstore's sales performance. It can be used to track progress towards business goals, identify areas for improvement, and make data-driven decisions that drive growth and profitability.