# Superstore Sales Analysis Report

Executive Summary

This report provides an analysis of the sales data for a superstore. The dataset contains 9,994 records with information on orders, shipping, customers, products, and financial metrics like sales, discount, and profit. The analysis aims to uncover trends, performance metrics, and insights to aid decision-making.

Data Overview

The dataset includes the following fields:

- **Row ID**: Unique identifier for each row.
- **Order ID**: Unique identifier for each order.
- **Order Date**: The date when the order was placed.
- **Ship Date**: The date when the order was shipped.
- **Ship Mode**: The shipping mode used.
- **Customer ID**: Unique identifier for each customer.
- **Customer Name**: Name of the customer.
- **Segment**: Customer segment (Consumer, Corporate, Home Office).
- **Country**: Country of the order (all orders are from the USA).
- **City**: City of the order.
- **State**: State of the order.
- **Postal Code**: Postal code of the order.
- **Region**: Region of the order (East, West, Central, South).
- **Product ID**: Unique identifier for each product.
- **Category**: Product category (Furniture, Office Supplies, Technology).
- **Sub-Category**: Product sub-category.
- **Product Name**: Name of the product.
- **Sales**: Revenue generated from the order.
- **Quantity**: Number of units sold.
- **Discount**: Discount applied to the order.
- **Profit**: Profit earned from the order.

Key Findings
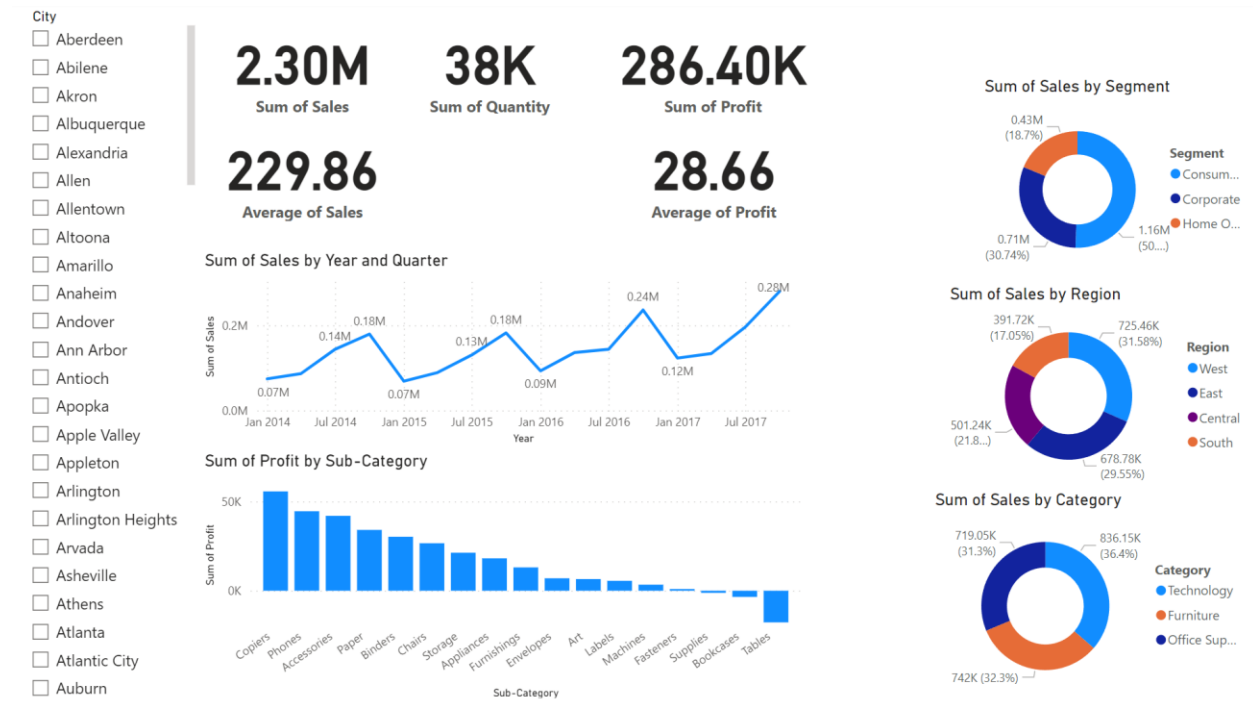
Sales and Profit Analysis

- **Total Sales**: The total sales amount is $2,297,201.54.

- **Total Profit**: The total profit amount is $286,397.02.

- **Average Sales per Order**: $229.86.

- **Average Profit per Order**: $28.66.

- **Profit Margin**: The overall profit margin is approximately 12.46%.

Sales by Category

- **Technology**: The highest revenue-generating category with total sales of $836,154.03 (36.4% of total sales).

- **Furniture**: Total sales of $741,999.80 (32.3% of total sales).

- **Office Supplies**: Total sales of $719,047.03 (31.3% of total sales).

Sales by Region

- **West**: The highest sales region with $725,457.82 (31.6% of total sales).
- **East**: $678,781.24 (29.5% of total sales).
- **Central**: $501,239.89 (21.8% of total sales).
- **South**: $391,721.91 (17.1% of total sales).

Sales by Segment

- **Consumer**: The largest segment with sales of $1,161,401.34 (50.56% of total sales).
- **Corporate**: $706,146.37 (30.74% of total sales).
- **Home Office**: $429,653.15 (18.7% of total sales).

Top Performing Products

Top 10 Products by Sales
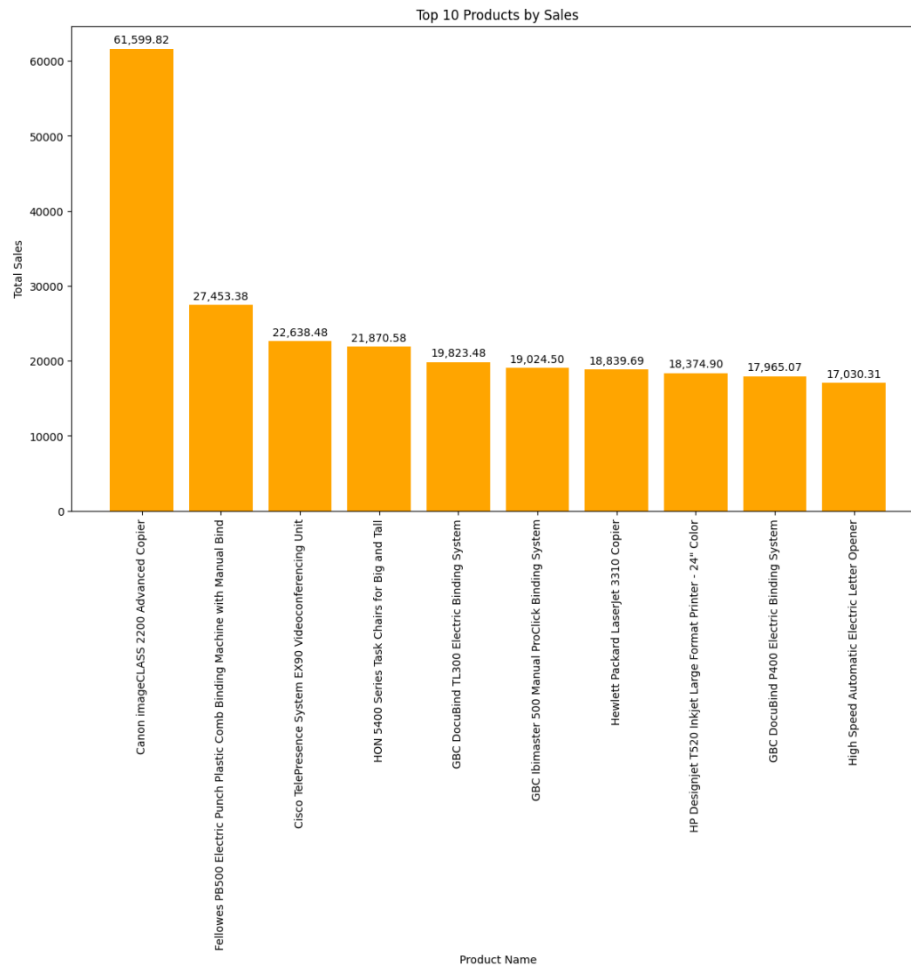
- **Best-Selling Product**: 'Canon ImageCLASS 2200 Advanced Copier' with total sales of $61,599.82.
- **Most Profitable Product** ''Canon ImageCLASS 2200 Advanced Copier ' with total profit of $25K.

Monthly Sales Trend

Monthly Sales Trend
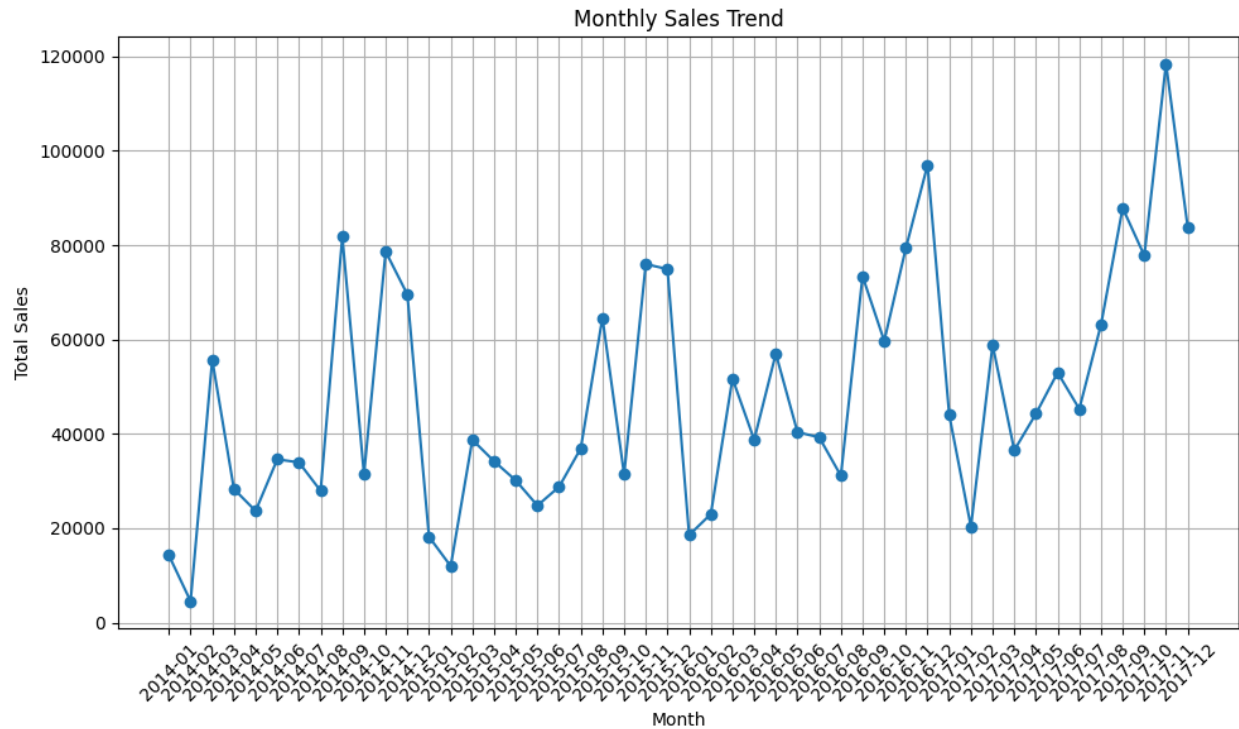
There are noticeable peaks in sales during the holiday seasons, particularly in November and December, which is typical due to increased shopping activity during these months.

Sales tend to be relatively high in the later months of the year (October to December) compared to the earlier months, indicating a potential seasonal trend.

Sales Forecasting
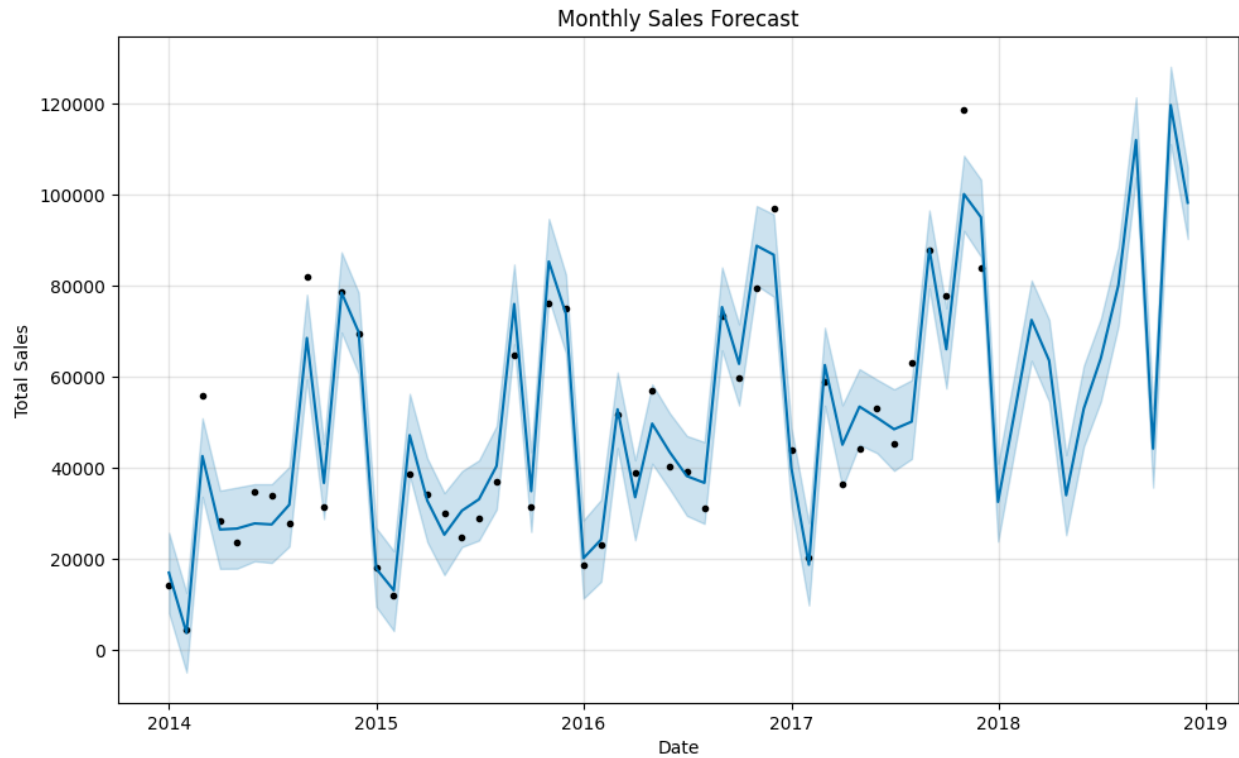
Discount Analysis
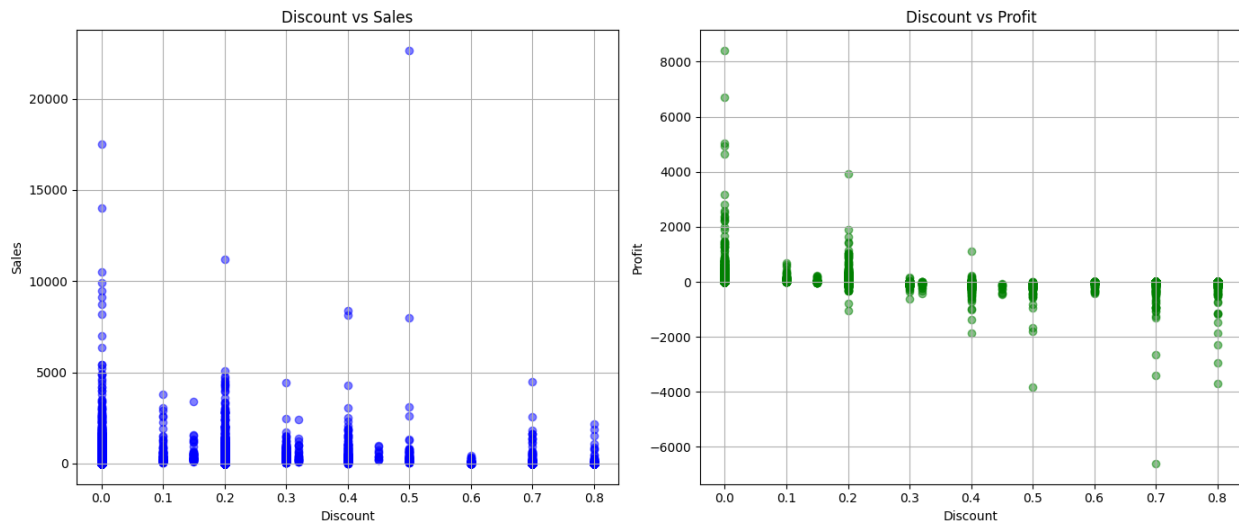
- **Average Discount**: 16.0%.
- **Impact of Discounts**:

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Correlation between Discount and Sales: -0.03
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Correlation between Discount and Profit: -0.22
Average Sales and Profit by Discount Level:
    Discount  Sales  Profit
0       0.00 226.74   66.90
1       0.10 578.40   96.06
2       0.15 529.97   27.29
3       0.20 209.08   24.70
4       0.30 454.74  -45.68
5       0.32 536.79  -88.56
6       0.40 565.13 -111.93
7       0.45 498.63 -226.65
8       0.50 892.71 -310.70
9       0.60  48.15  -43.08
10      0.70  97.18  -95.87
11      0.80  56.55 -101.80
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- **Sales and Discount**: The extremely weak negative correlation suggests that changes in discount levels have minimal impact on sales volume. This could indicate that factors other than discount levels play a more significant role in influencing sales.

- **Profit and Discount**: The weak negative correlation implies that while higher discounts may lead to reduced profits, the impact is not very pronounced. This suggests that other factors besides discounts are also crucial in determining profitability.

Shipping Mode Analysis
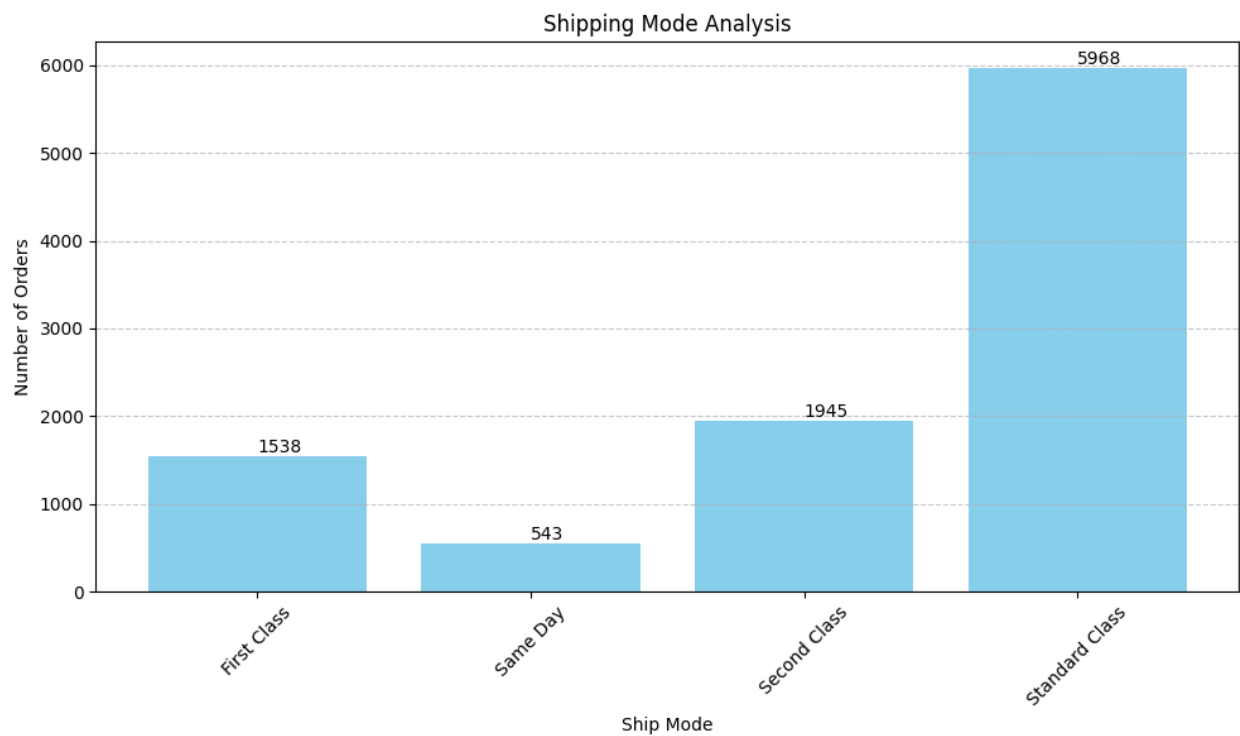
- **Standard Class**: Most common shipping mode with 5,968 orders.

- **Second Class**: 1,945orders.

- **First Class**: 1,538 orders.

- **Same Day**: 543 orders.

Customer Insights

Customer Segments: RFM Segment Distribution

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RFM Segment Details:
                  Recency Frequency Monetary
Segment
Big Spenders   16.48   22.79 6,164.34
Churned Customers 313.67   22.60 7,484.07
High Value   18.05   5.40   447.70
Loyal Customers   475.41   5.03   498.47
Recent Customers   125.33   5.60   613.40

    '111': 'High Value',
    '411': 'Loyal Customers',
    '144': 'Big Spenders',
    '444': 'Low Value',
    '311': 'Frequent Buyers',
```

```
    '311': 'Recent Customers',
    '444': 'Churned Customers'
```


RFM Segment Distribution
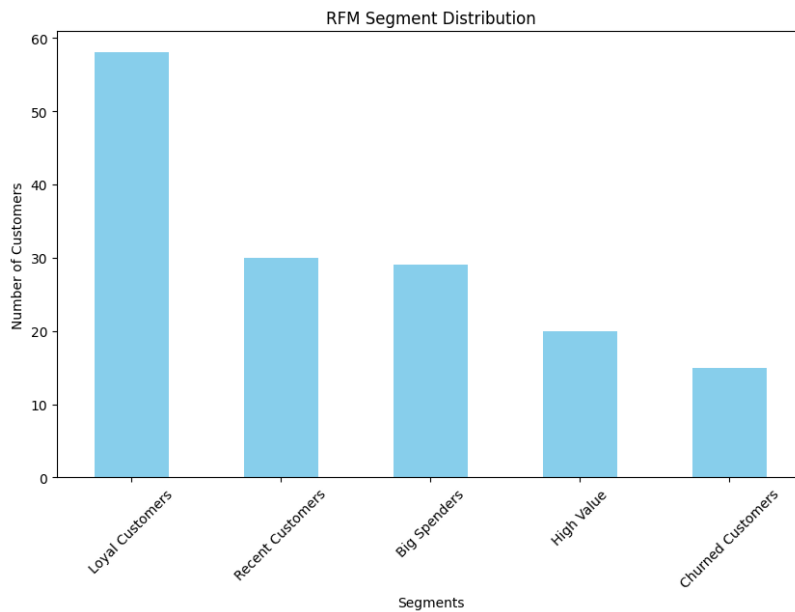
Recommendations

1. **Optimize Inventory**: Focus on maintaining sufficient inventory levels for top-performing products and categories, especially in high-sales regions like the West and East.

2. **Targeted Marketing**: Increase marketing efforts towards the Consumer segment and in the West region to maximize sales growth.

3. **Discount Strategies**: Evaluate the effectiveness of current discount strategies to improve profit margins while maintaining sales volumes.

4. **Shipping Efficiency**: Analyze shipping performance to identify opportunities for cost reduction and improved customer satisfaction, particularly in Standard Class.