


SALES ANALYSIS

TITLE: "Analyzing Sales Performance: Uncovering Trends, Regional Insights, and Top Performers in a Retail Dataset".

INTRODUCTION : "In this project, I have analyzed a comprehensive sales dataset to derive actionable insights for optimizing business performance. The primary objective was to investigate key aspects of sales data, including the total number of distinct product subcategories, cities, and states tracked, as well as identifying trends and peak performers across various dimensions. Using a dataset containing detailed sales records—featuring columns such as Sub-Category, City, State, Order Date, and Sales—I employed Python tools like Pandas, Numpy for data processing and Matplotlib and Seaborn for visualization. The analysis focuses on answering critical questions: What are the maximum sales by product category, subcategory, region, state, and mode? Which months see the highest and lowest order demand? And what are the top-performing subcategories? By calculating metrics like the total distinct subcategories, cities, and states, and extracting trends such as the month with maximum sales, this report uncovers patterns that can guide inventory management, regional targeting, and strategic planning. The findings, supported by visualizations, aim to provide a clear roadmap for improving sales efficiency and decision-making."



DATA : "The dataset used is the Superstore Sales Dataset, containing sales records with columns such as Sales, Category, Sub-Category, Region, City, State, Order Date, Ship Date, Ship Mode, Customer ID, Order ID, and Product Name. I added two derived columns, Order Month and Order Day, to analyze sales trends over time. The dataset includes 17 distinct subcategories, 529 distinct cities, and 49 distinct states."

ANALYSIS :

```
# total distinct subcategory of products we have  
# total distinct city track for sales  
# total distinct states he track for sales
```

```
Distinct Sub-category of product we have :17
```

```
Distinct cities to track :529
```

```
Distinct States to track :49
```

```
# Maximum Sales of product Category wise
# maximum avg sales of product category wise
# maximum sales by which mode
# maximum sales in which region
# maximum sales in which state
# max sales by sub category
# Date when maximum order placed
# Date with maximum sales
```

Maximum Sales Category: Technology

Maximum Avg Sales Category: Technology

Maximum Sales by Ship Mode: Standard Class

Maximum Sales Region: West

Maximum Sales State: California

Maximum Sales Sub-Category: Phones

Date Maximum order Placed: 2017-09-05 00:00:00


Maximum sales date: 2015-03-18 00:00:00



INSIGHTS :

Top 5 max Selling sub_category products

| Sub-Category | |
|--------------|-----------|
| Phones | 327782.49 |
| Chairs | 322822.72 |
| Storage | 219343.37 |
| Tables | 202810.62 |
| Binders | 200028.73 |



Week Days Selling

Sales by Day of Week:

DayOfWeek

Friday 234710.87

Monday 348791.44

Saturday 420901.49

Sunday 377868.81

Thursday 142839.21

Tuesday 420535.80

Wednesday 315888.93



Key Insights from Analysis:

1. Sales Distribution Across Product Categories

- **Highest Sales Category: Technology**
- **Highest Average Sales Category: Technology**
- **Technology products outperform other categories, making them a major revenue driver.**

2. Sales by Shipping Mode

- **Most Sales by Ship Mode: Standard Class**
- **Standard shipping is the most preferred, possibly due to affordability.**

3. Sales by Region and State

- **Highest Sales Region: West**
- **Highest Sales State: California**
- **California contributes the most to total sales, making it a key focus area for marketing strategies.**



4. Top 5 Sub-Categories by Sales:

- **Phones: \$327,782.49** (Most profitable)
 - **Chairs: \$322,822.72**
 - **Storage: \$219,343.37**
 - **Tables: \$202,810.62**
 - **Binders: \$200,028.73**
- **Phones & Office Furniture (Chairs, Tables) dominate sales.**

5. Sales Trends Over Time

- **Maximum Order Date: September 5, 2017**
- **Maximum Sales Date: March 18, 2015**
- **Certain months & years see spikes in sales, indicating seasonal demand.**

6. Day-wise Sales Performance

- **Best Sales Days:**
 - **Saturday: \$420,901.49**
 - **Tuesday: \$420,535.80**
- **Lowest Sales Day: Thursday (\$142,839.21)**
- **Weekends and early-week days are peak sales days.**

Business Takeaways

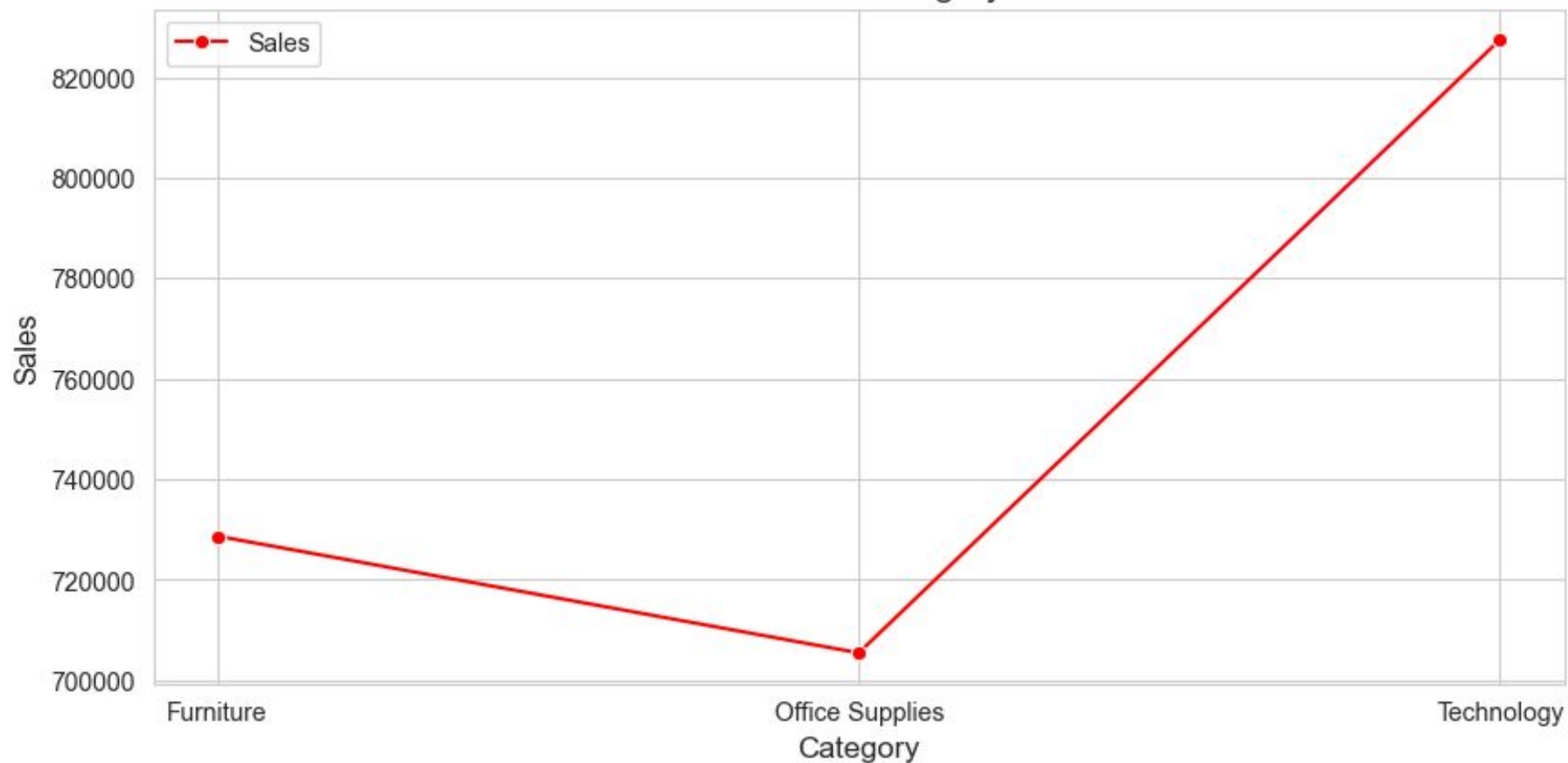
1. **Expand Technology & Office Furniture Sales**
 - Phones and Chairs are best sellers; focus on **stocking and promotions**.
2. **Optimize Shipping**
 - Standard shipping is the most used; **offering free/discounted shipping** can further increase sales.
3. **Focus on the West Region, Especially California**
 - Invest in **regional ads and inventory management** for California.



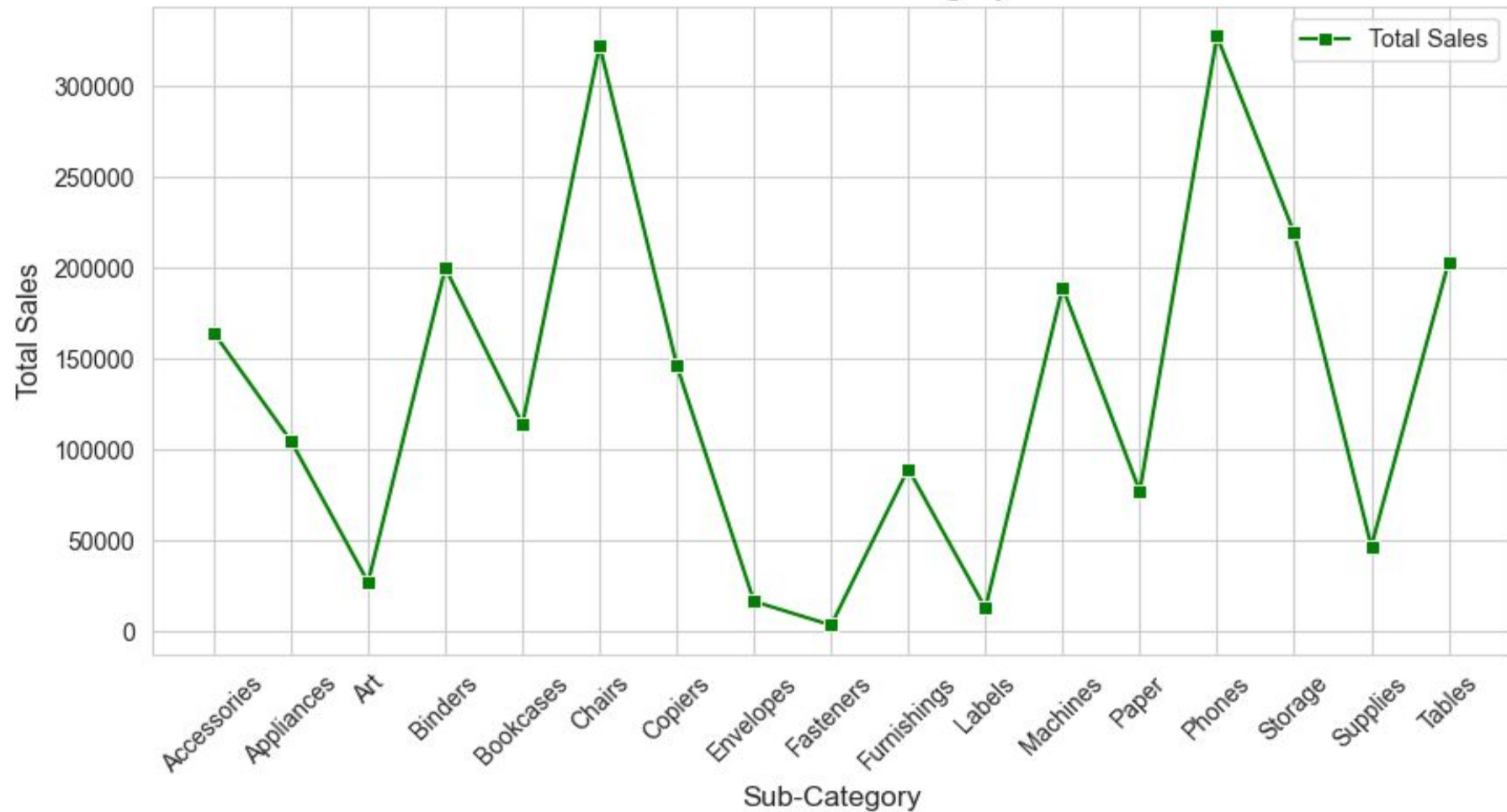
VISUALIZATION

- > After finding key lets goingthe visualization part of our project where we visualize all our key insights .
- > After visualization we are able to solve our Business related problems and give possible suggestions for business.

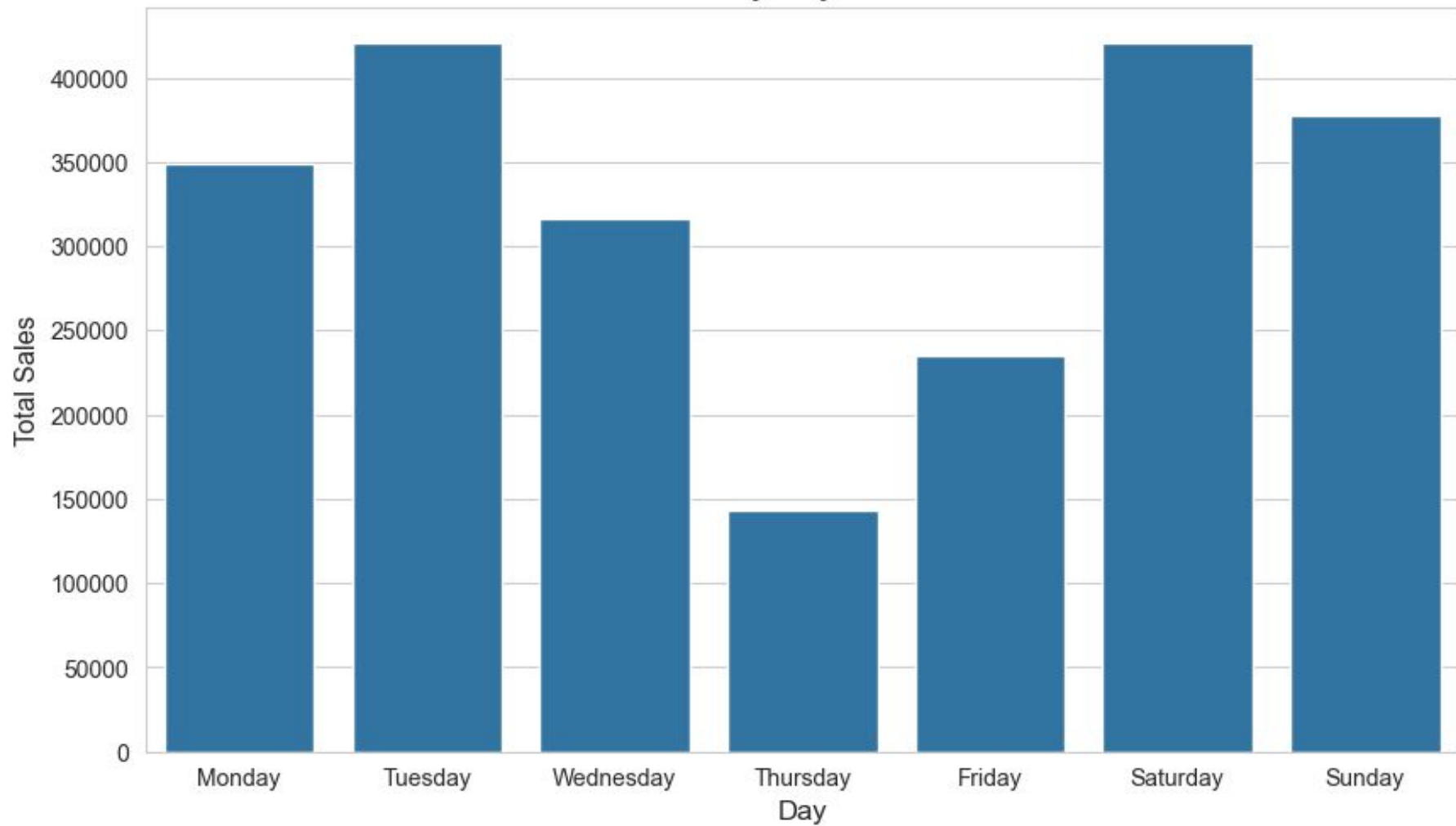
Sales vs. Category



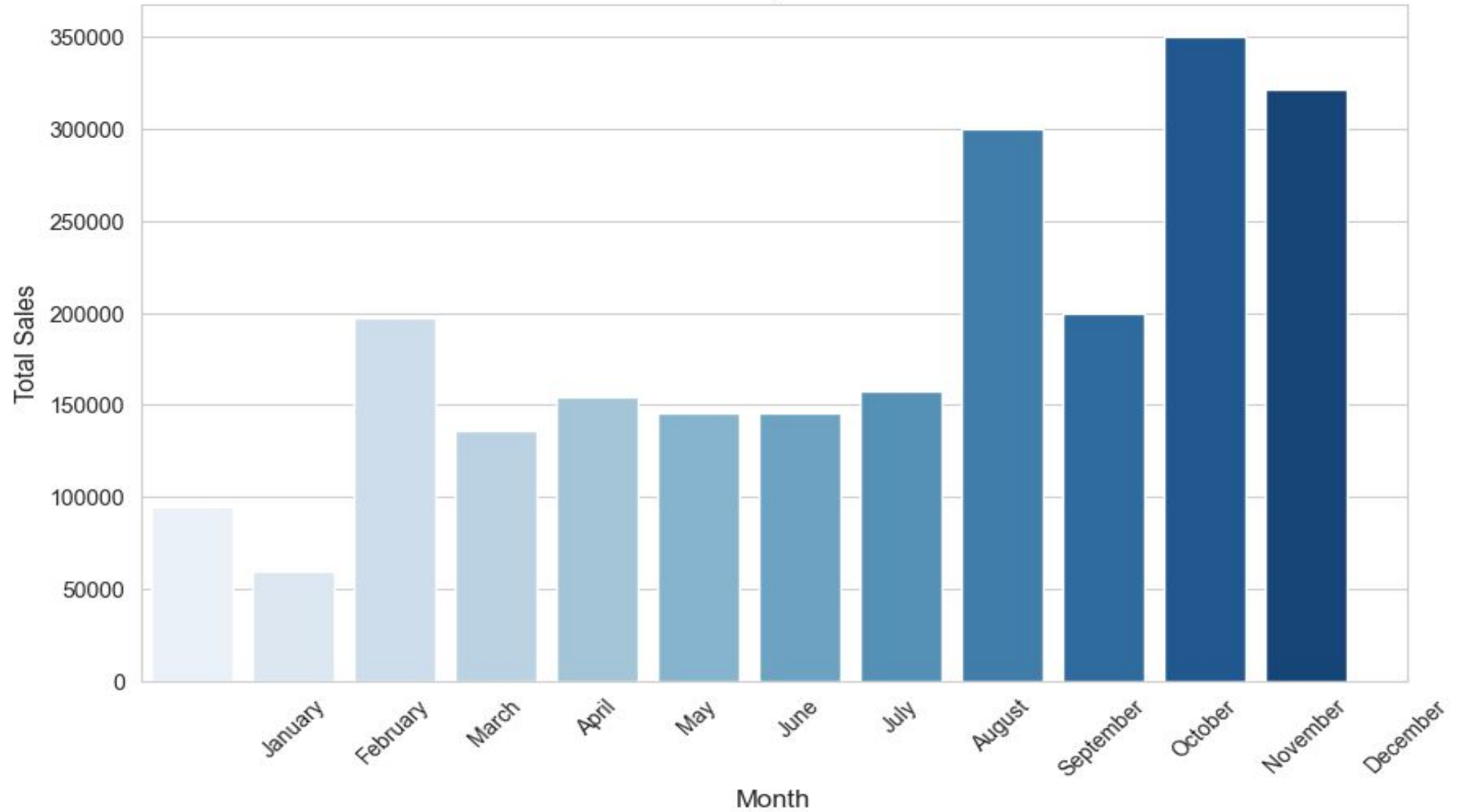
Sales vs. Sub-Category



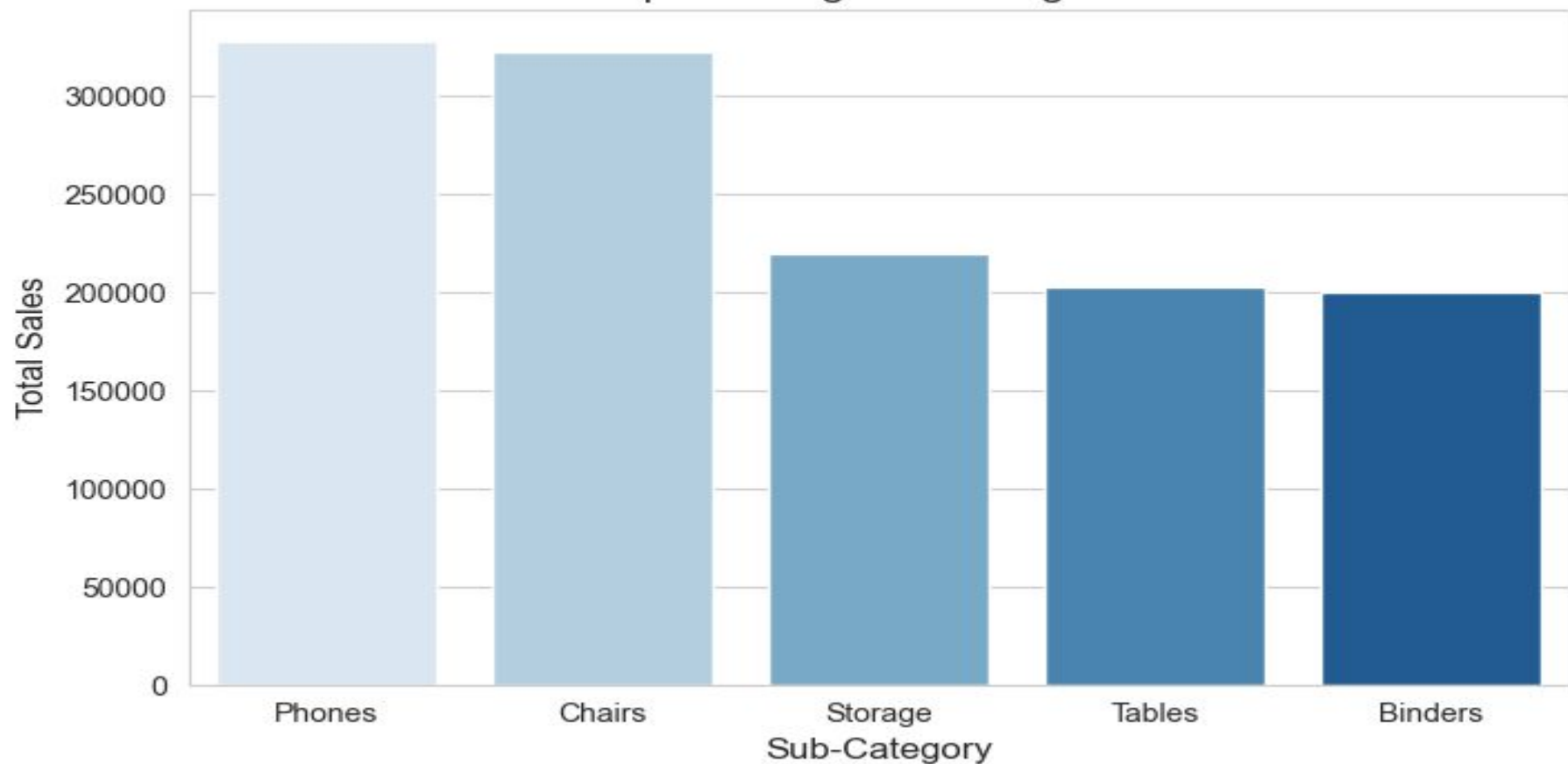
Sales by Day of Week



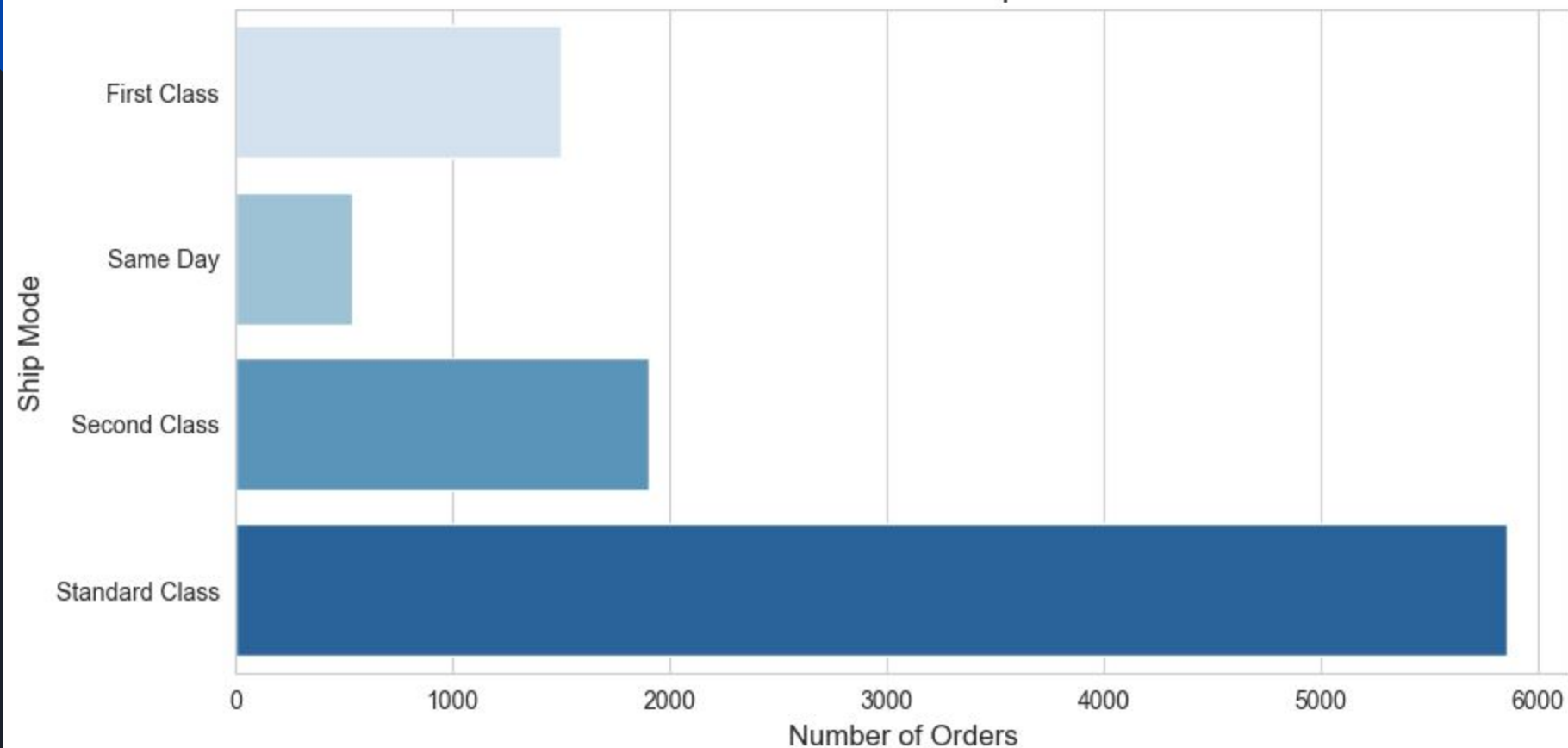
Sales by Month



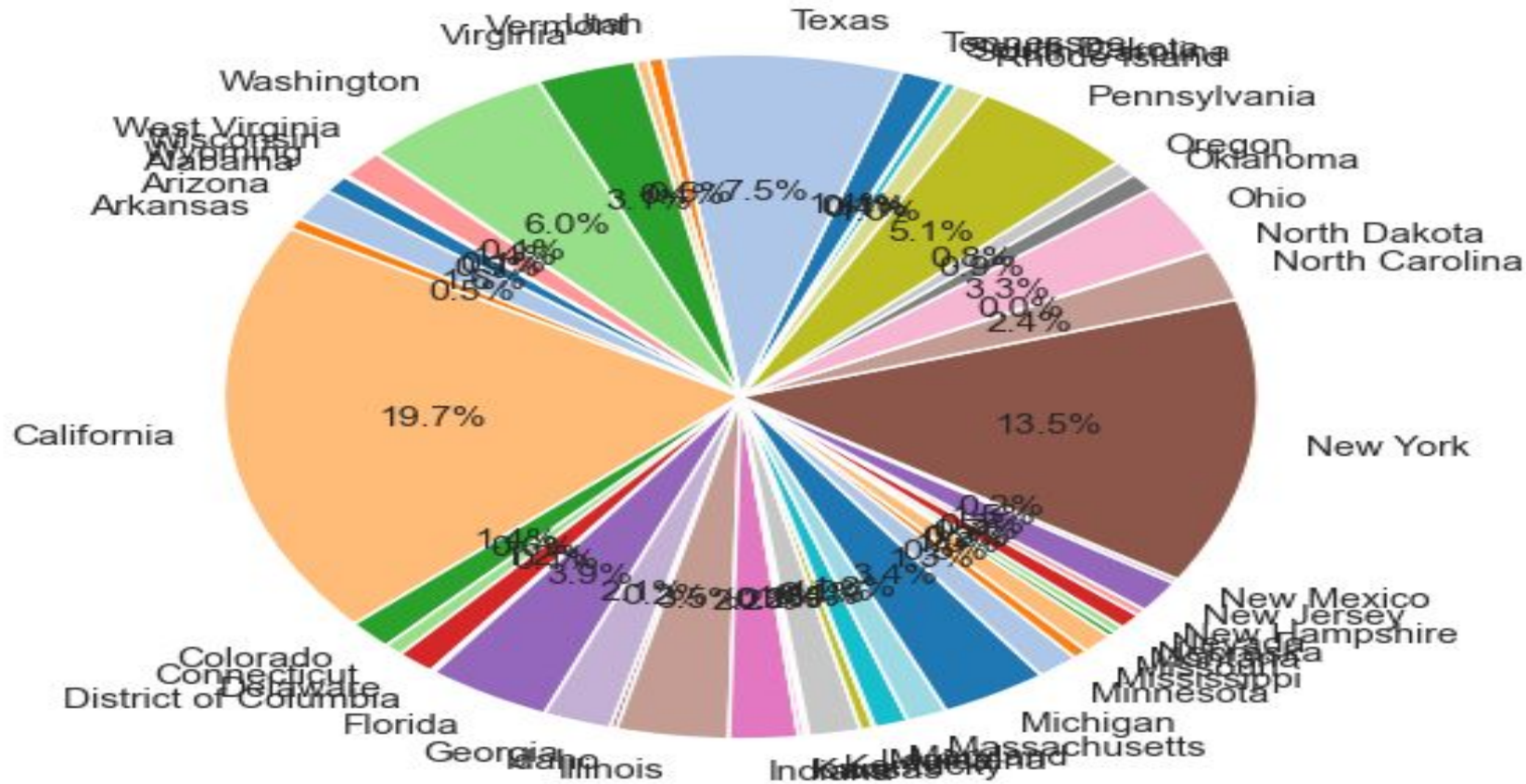
Top 5 Selling Sub-Categories



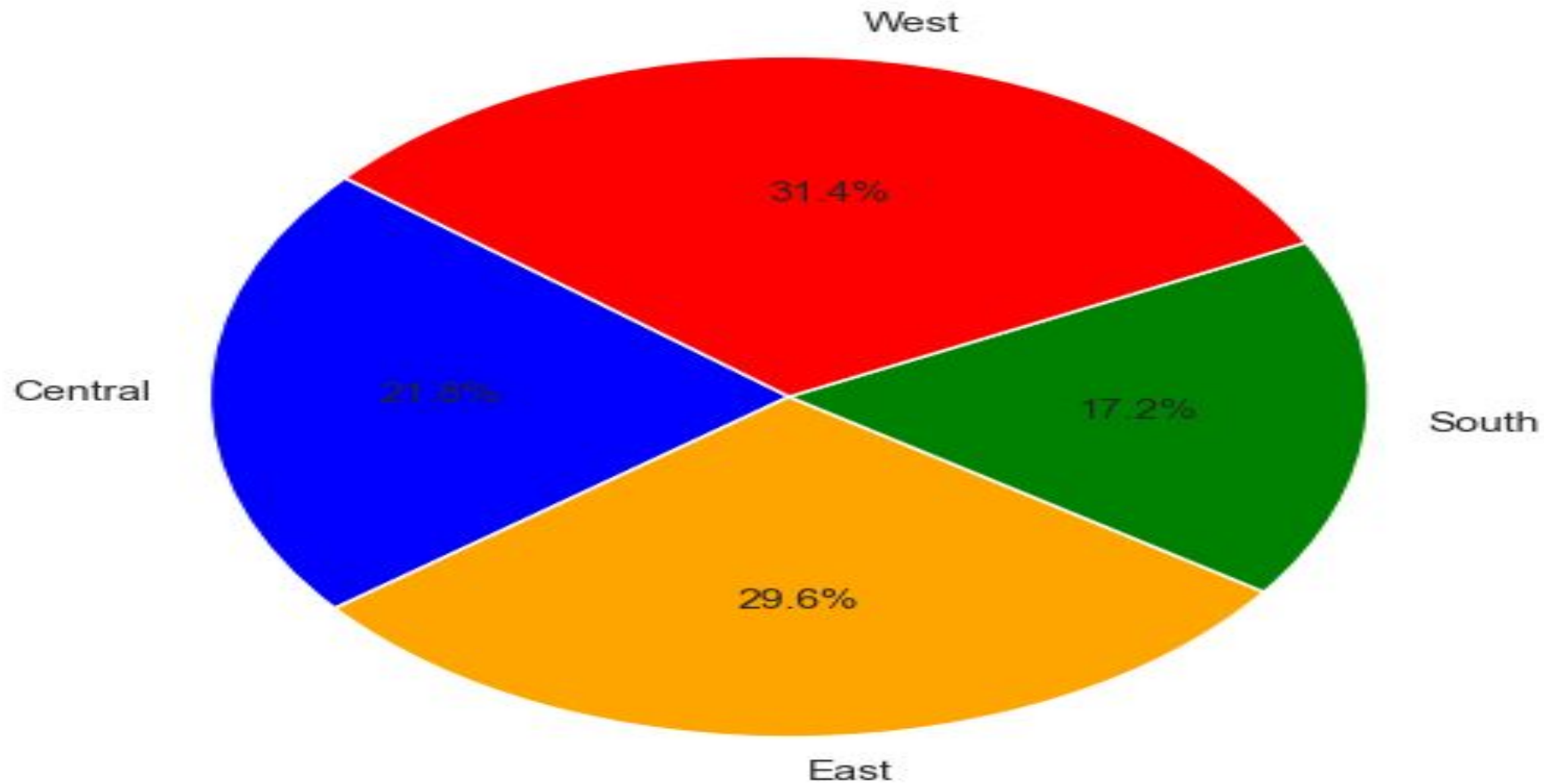
Order Placed vs. Ship Mode



Sales Distribution by States



Sales Distribution by Region





Problem Statement

Q1. Top 5 selling products and why they are top selling ?

-> Definitely through our analysis in top 5 selling product technology category is high and particularly phone is highest selling because of technology enhancement in the current world situation while it comes ahead of chair whose selling is huge always as it use everywhere.

Q2. Weekly selling rate ?

-> As we seen through our visualization saturday is the highest selling day due to weekend start while lowest is thursday due to working day most people are waited for saturday and sunday.

Q3. Monthly sales of products ?

-> Sales is high during month of oct to dec due to holidays discounts and offers while minimum at jan to march .

Q4. Sales distribution per region?

-> Sales is maximum distributed at west region due to development , population that increase the demand of products while min at south due to less population and high shipment charges due to less connectivity .



CONCLUSION:

"This analysis reveals that the Technology category, particularly Phones, drives the highest sales, with the West region and California state as the top performers. Sales peak on [day of week] and in [month], suggesting opportunities for targeted promotions during these periods. Businesses can leverage these insights to optimize inventory, focus marketing efforts on high-demand regions, and prioritize top-selling subcategories like Phones and Chairs."