

Store Sales Performance Dashboard

[Back to Agenda Page](#)



Overview

- Data Overview
- Data Cleaning
- Analysis Questions
- Visualization Dashboard
- Forecasting Questions
- Key Insights & Conclusions

Data Overview

Orders	Customers	Region	Products
<ul style="list-style-type: none">• Order id• Order date• Ship date• Ship mode	<ul style="list-style-type: none">• Customer id• Customer name• Segment	<ul style="list-style-type: none">• Country• City• State• Postal code• Region	<ul style="list-style-type: none">• Product id• Product name• Category• Sub category• Sales

[Back to Agenda Page](#)



Data Cleaning

In the Data Cleaning stage, the focus is on preparing the data for analysis by:

- Removing or imputing missing values.
- Eliminating duplicate entries.
- Formatting data consistently (e.g., dates, numbers).
- Detecting and handling outliers.
- Standardizing inconsistent labels.

This process ensures the data is accurate, consistent, and ready for reliable analysis.

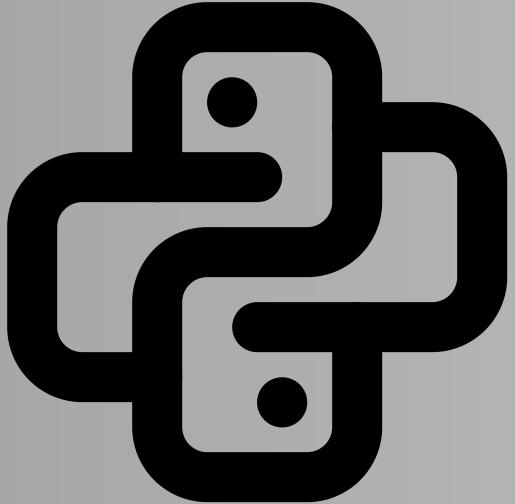


Data

Before

Cleaning:

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 9789 entries, 0 to 9788
Data columns (total 19 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Order ID        9789 non-null    object  
 1   Order Date      9789 non-null    object  
 2   Ship Date       9789 non-null    object  
 3   Ship Mode       9789 non-null    object  
 4   Customer ID    9789 non-null    object  
 5   Customer Name  9789 non-null    object  
 6   Segment         9789 non-null    object  
 7   Country         9789 non-null    object  
 8   City             9789 non-null    object  
 9   State            9789 non-null    object  
 10  Region          9789 non-null    object  
 11  Product ID     9789 non-null    object  
 12  Category        9789 non-null    object  
 13  Sub-Category   9789 non-null    object  
 14  Product Name   9789 non-null    object  
 15  Sales            9789 non-null    int64  
 16  Shipment Days  9789 non-null    int64  
 17  Year             9789 non-null    int64  
 18  Month            9789 non-null    int64  
dtypes: int64(4), object(15)
memory usage: 1.4+ MB
```



the first step in the process is importing pandas library and data file to start cleaning data

```
import pandas as pd  
df= pd.read_csv('Sales Data.csv')  
df= pd.DataFrame(df)  
df.head(5)  
df.info()  
df.dtypes
```

Remove duplicates and nulls

Stages of cleaning data

```
df.drop_duplicates(inplace=True)  
df.info()  
df.isnull().sum()  
df.dropna(inplace=True)  
df.info()
```

Remove unnecessary information

```
#df.drop('Row ID',axis=1,inplace=True)  
#df.info()  
#df.drop('Postal Code',axis=1,inplace=True)  
#df.info()  
#df.drop('Product ID',axis=1,inplace=True)  
df.info()
```

Change type of ship date And Order date

convert shipdate and order date from string to date and extract shipment days.

```
print(type("Ship Date"))
df["Ship Date"] = pd.to_datetime(df["Ship Date"], format="%d/%m/%Y")
df["Order Date"] = pd.to_datetime(df["Order Date"], format="%d/%m/%Y")
df['Shipment Days']=df['Ship Date']-df['Order Date']
print(type('Shipment Days'))
df['Shipment Days'] = df['Shipment Days'].dt.days.astype(int)
df.head(3)
```

Data After Cleaning



```
<class 'pandas.core.frame.DataFrame'>
Index: 9789 entries, 0 to 9799
Data columns (total 19 columns):
 #   Column           Non-Null Count Dtype  
--- 
 0   Order ID        9789 non-null   object  
 1   Order Date      9789 non-null   datetime64[ns]
 2   Ship Date       9789 non-null   datetime64[ns]
 3   Ship Mode       9789 non-null   object  
 4   Customer ID     9789 non-null   object  
 5   Customer Name   9789 non-null   object  
 6   Segment          9789 non-null   object  
 7   Country          9789 non-null   object  
 8   City              9789 non-null   object  
 9   State             9789 non-null   object  
 10  Region            9789 non-null   object  
 11  Product ID       9789 non-null   object  
 12  Category          9789 non-null   object  
 13  Sub-Category     9789 non-null   object  
 14  Product Name     9789 non-null   object  
 15  Sales             9789 non-null   int64  
 16  Shipment Days    9789 non-null   int64  
 17  Year              9789 non-null   int32  
 18  Month             9789 non-null   int32  
dtypes: datetime64[ns](2), int32(2), int64(2), object(13)
```



Store Sales Data Analysis

Questions

- What is the total sales across all regions?
- Which product category or sub-category generates the highest sales?
- What is the sales trend over time?

- Which customer segments contribute the most to sales?
- What is the correlation between sales and different shipping modes?
- Which products generate the most revenue despite lower quantities sold?
- What is the sales forecast using historical data?



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- What regions or cities have the highest sales?
 - Which customer segments have the highest repeat purchase rates?
 - Which product categories show the most growth in sales over time?

Store Sales Dashboard



Store Sales Performance Dashboard:

This dashboard provides a clear and comprehensive view of store sales performance, highlighting critical metrics to support data-driven decision-making. Key features include:

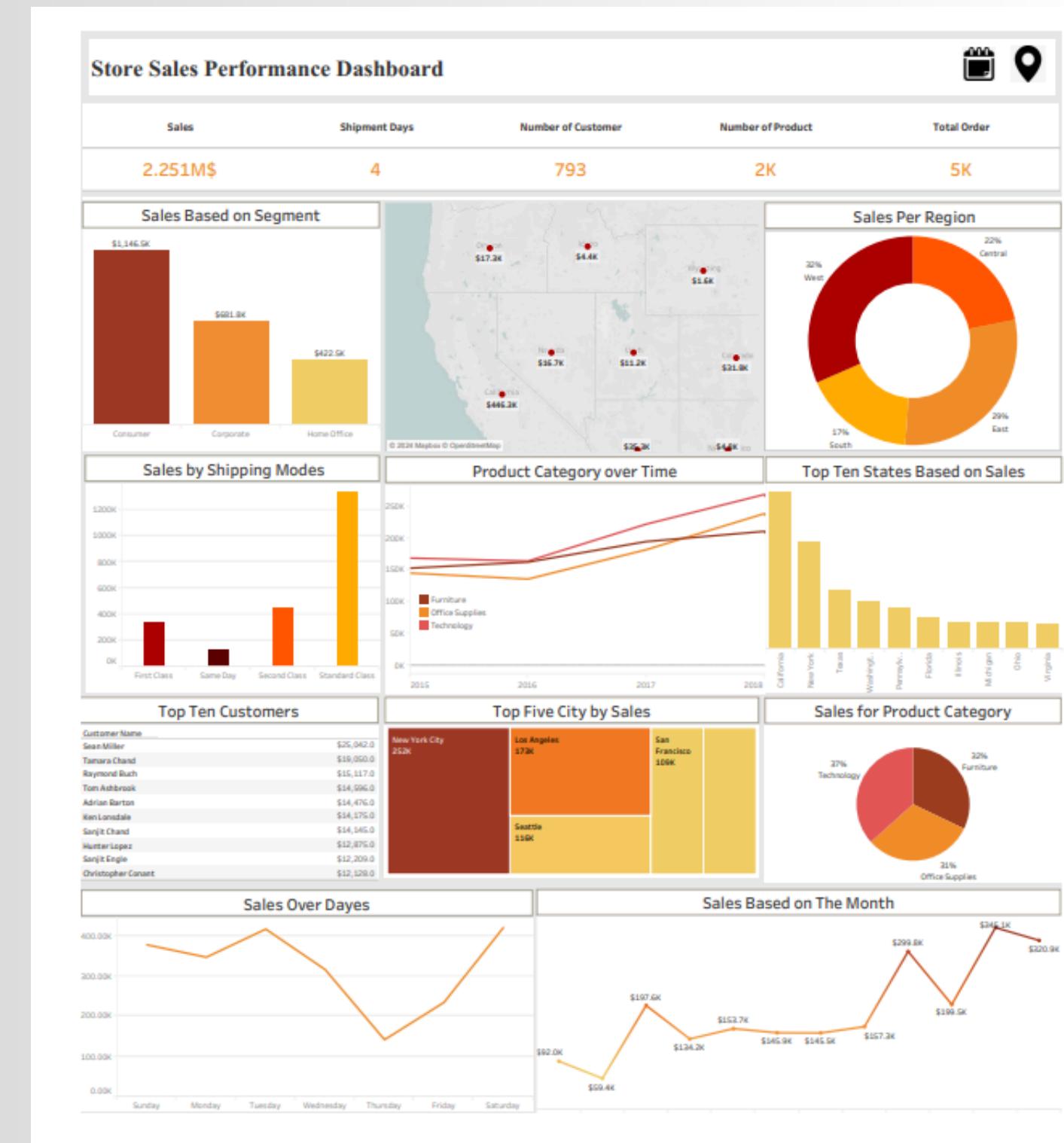
Sales Trends: Tracks sales patterns over time to identify growth opportunities and seasonal trends.

Category Performance: Analyzes sales by product category, pinpointing high and low performers.

Shipment Insights: Monitors shipping modes and delivery efficiency to improve logistics.

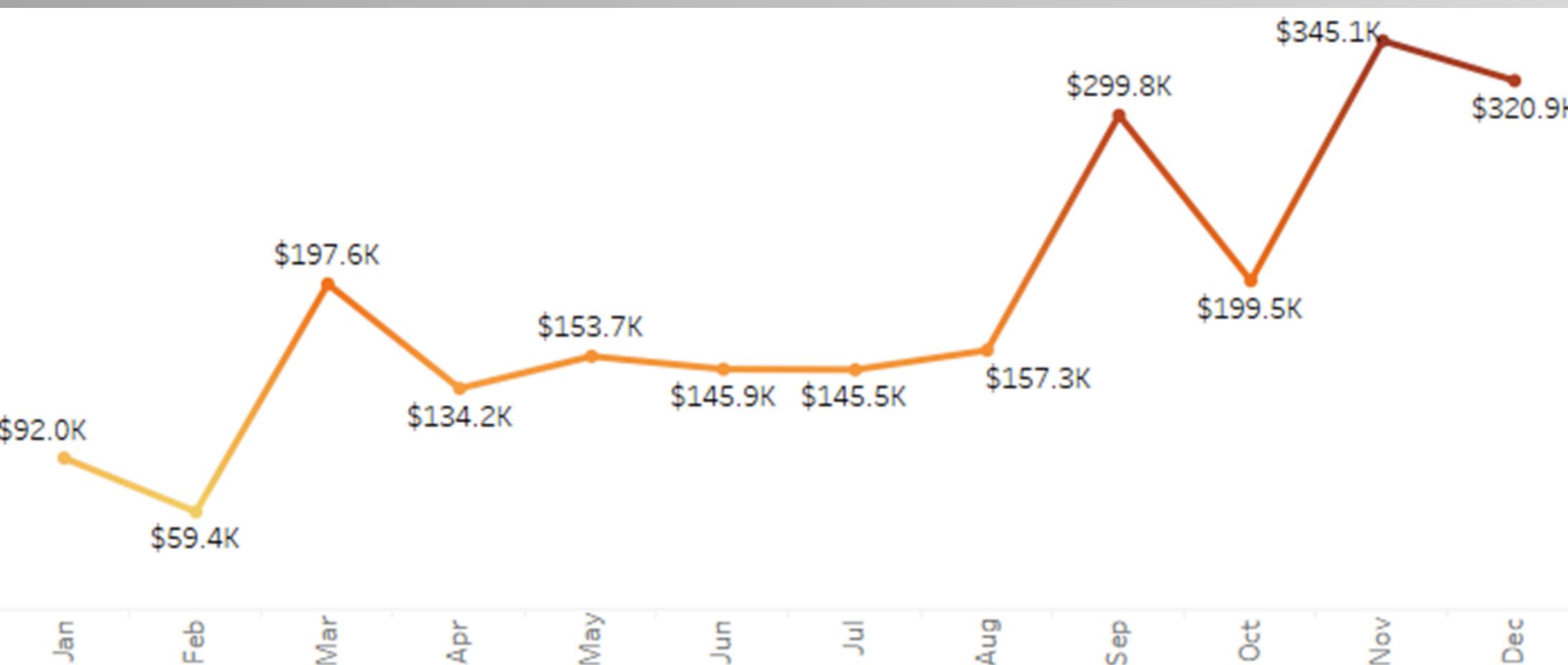
Revenue Drivers: Identifies top-selling products and key revenue sources.

This tool empowers managers to optimize sales strategies, streamline operations, and boost overall performance.



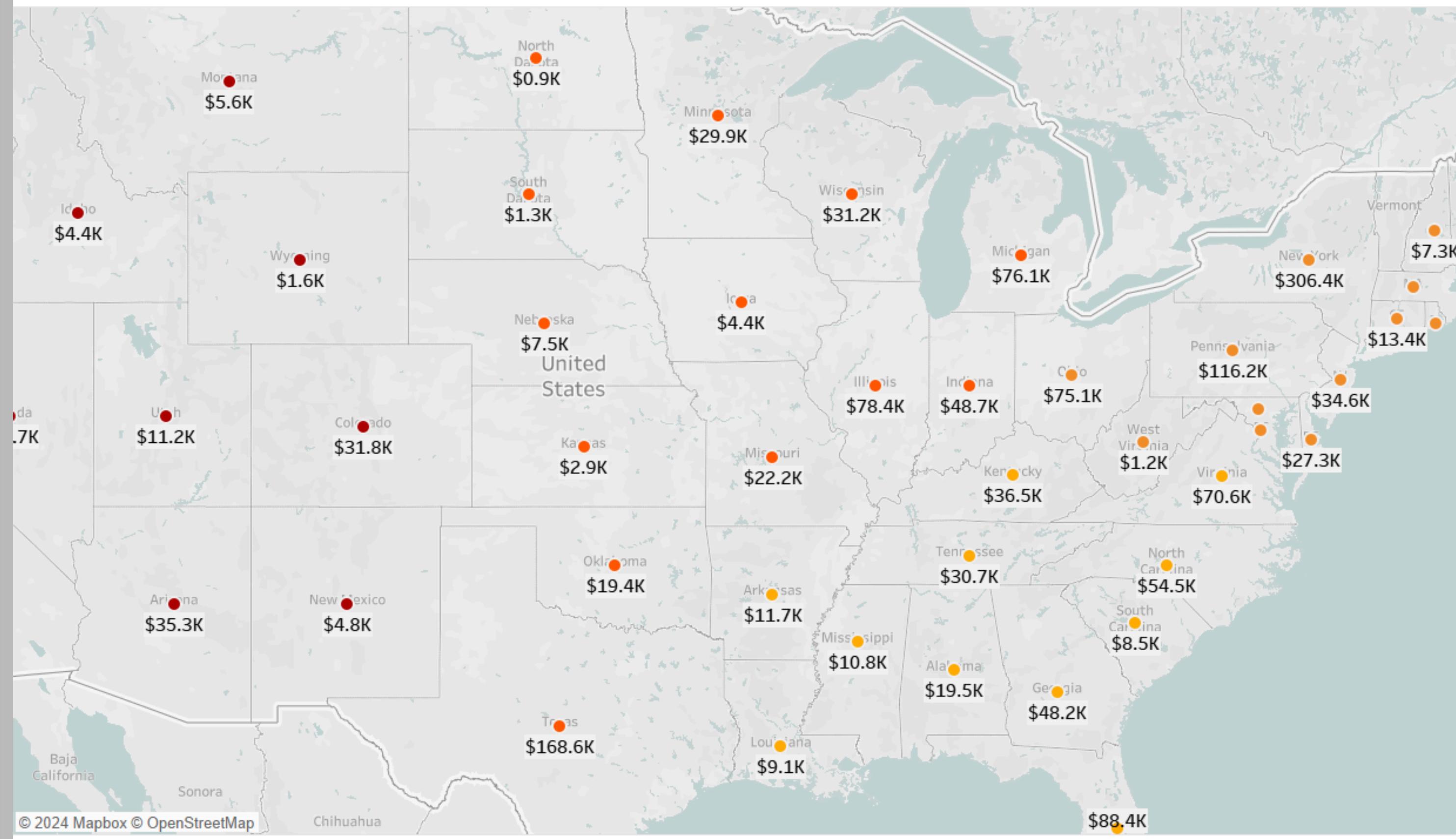
Key Performance Indicator(KPI)

Sales	Shipment Days	Number of Customer	Number of Product	Total Order
2.251M\$	4	793	2K	5K

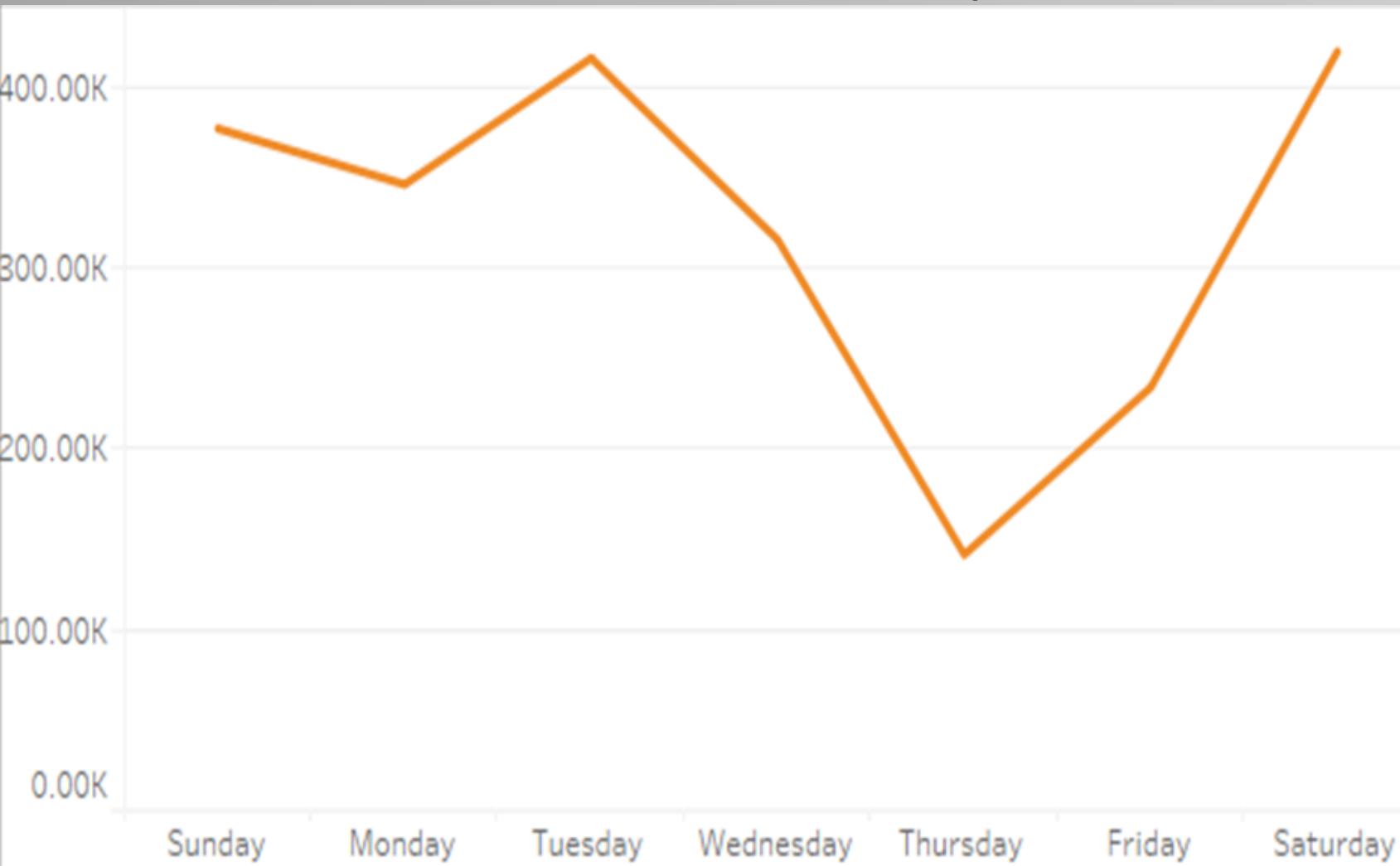


Change In Sales Per Month

Map show
the
distributions
of sales
among states

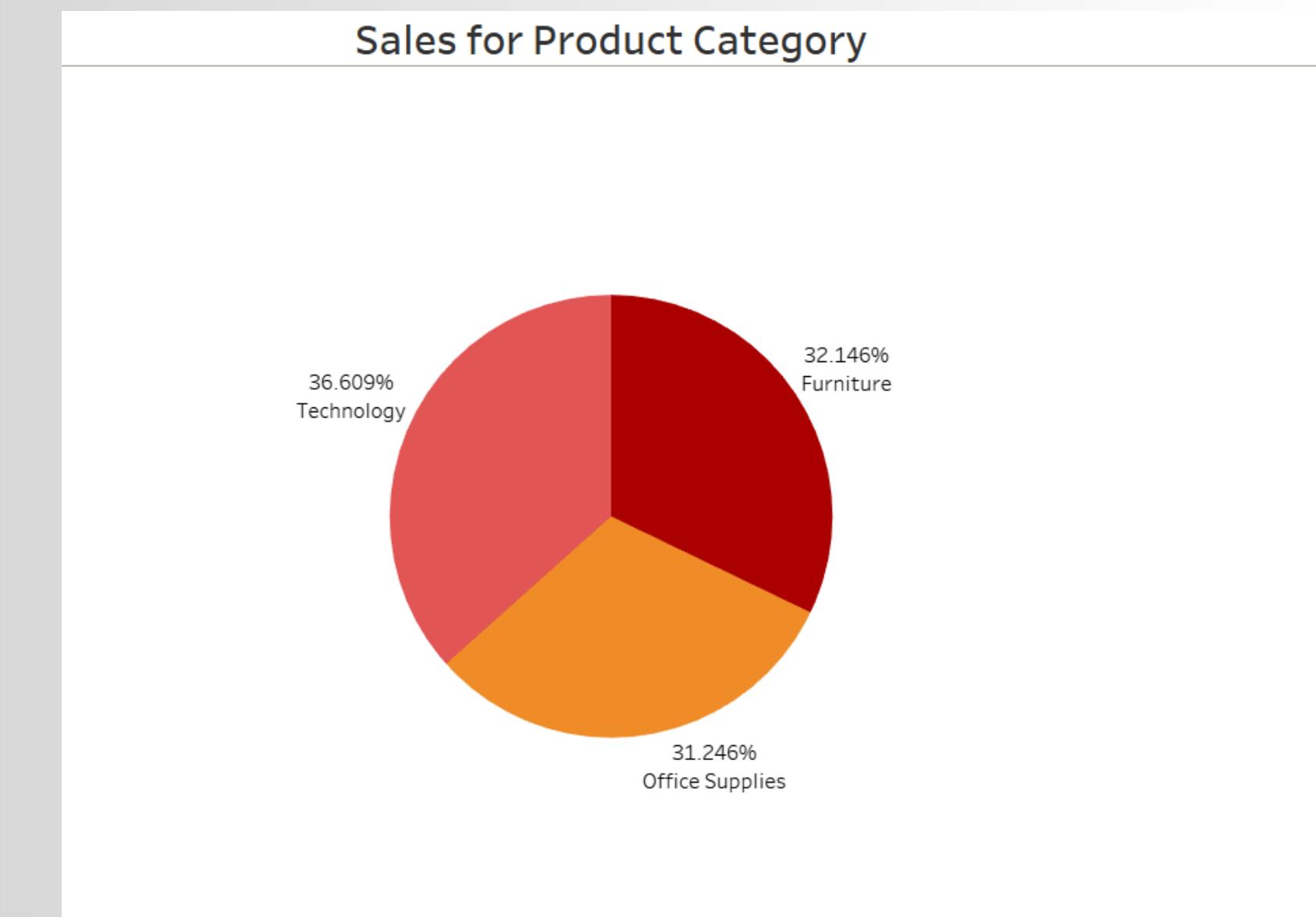


Sales over weekdays

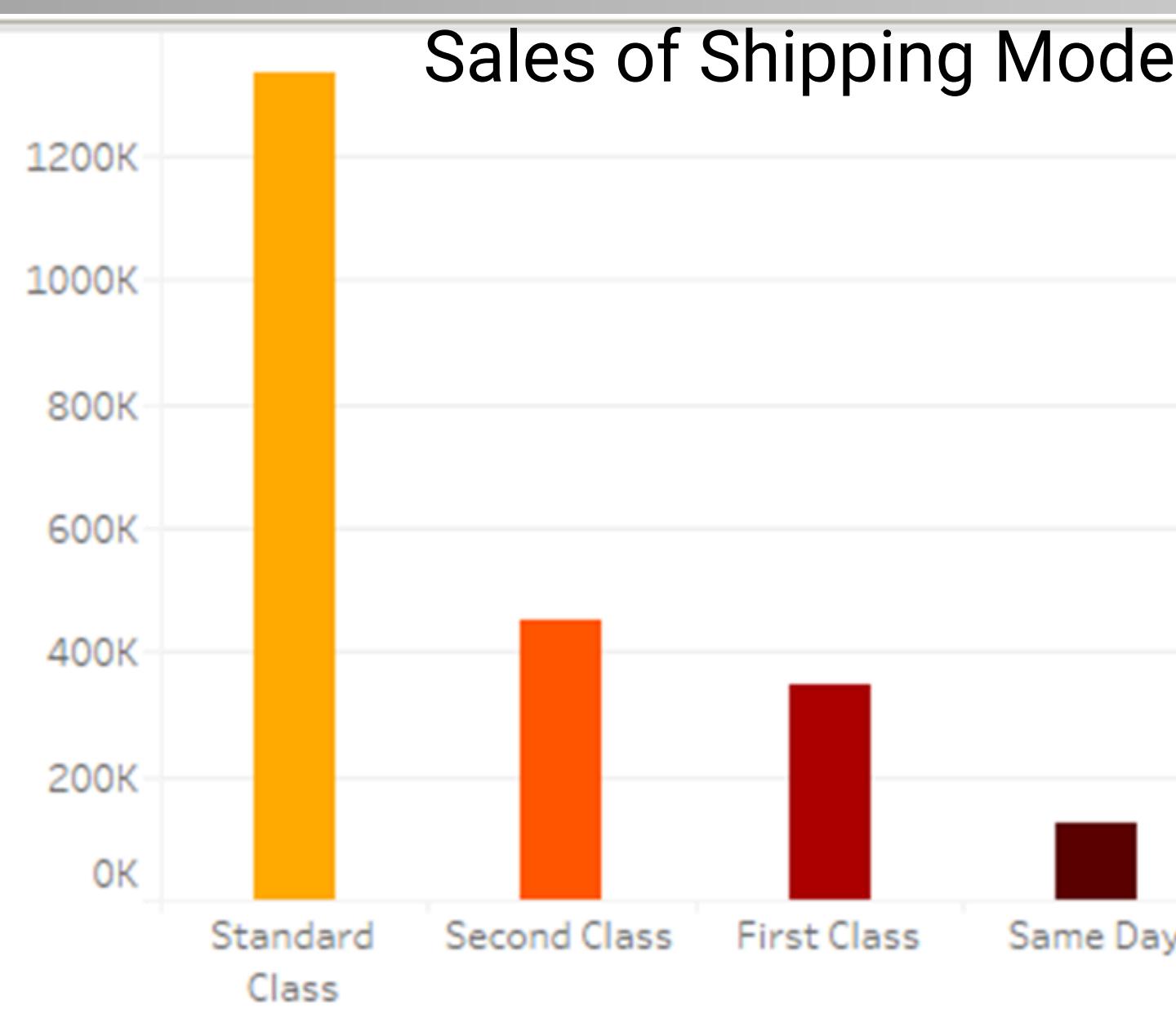
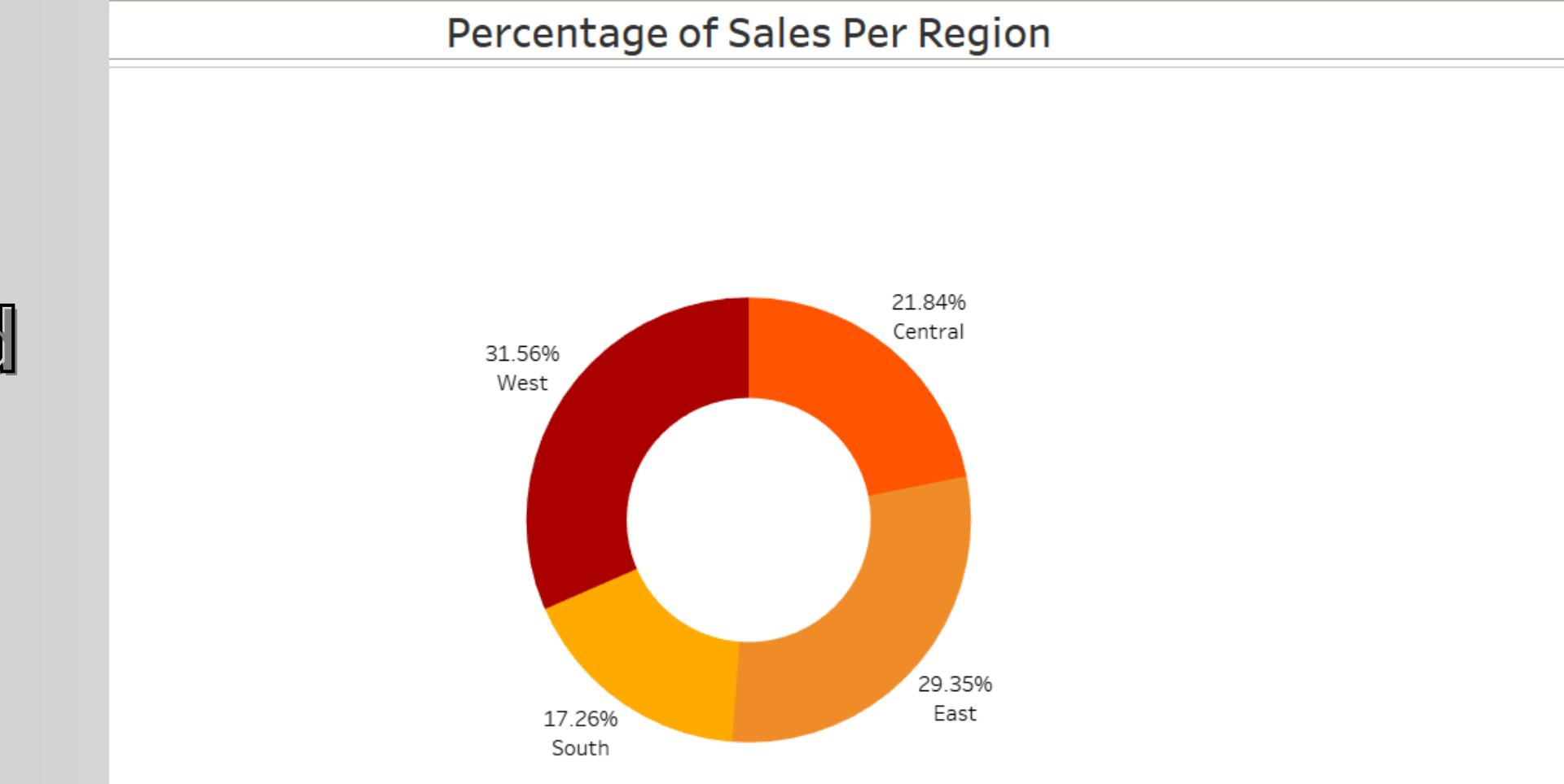


Weekend has shown the highest sales, however, midweek has shown the least sales

The Technology category has recorded the highest sales, accounting for 36.6%



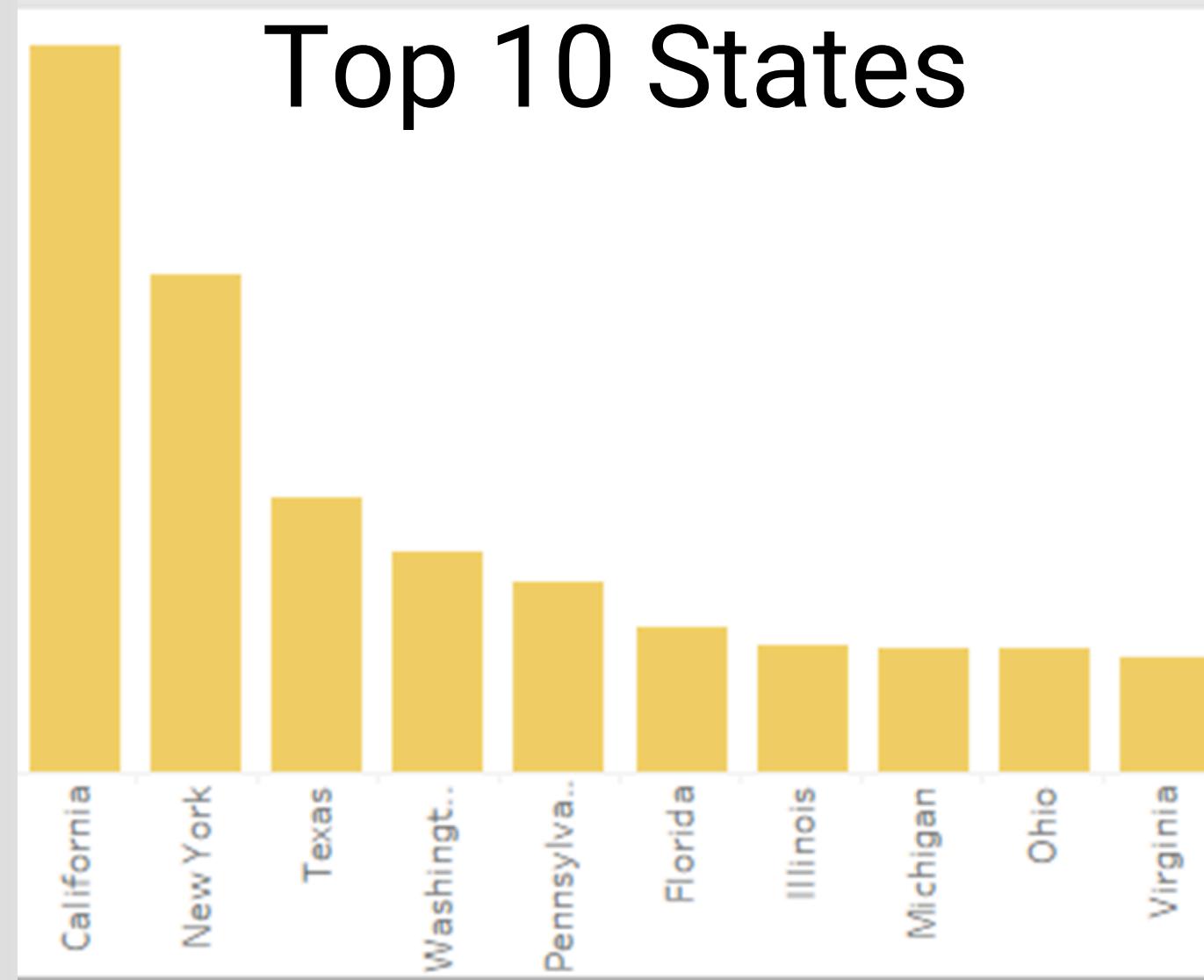
While all regions have similar sales figures, the West region has recorded the highest sales by 31.56%



Standard class has recorded the highest sales, accounting for more than 1M\$

California and New York have recorded the highest sales

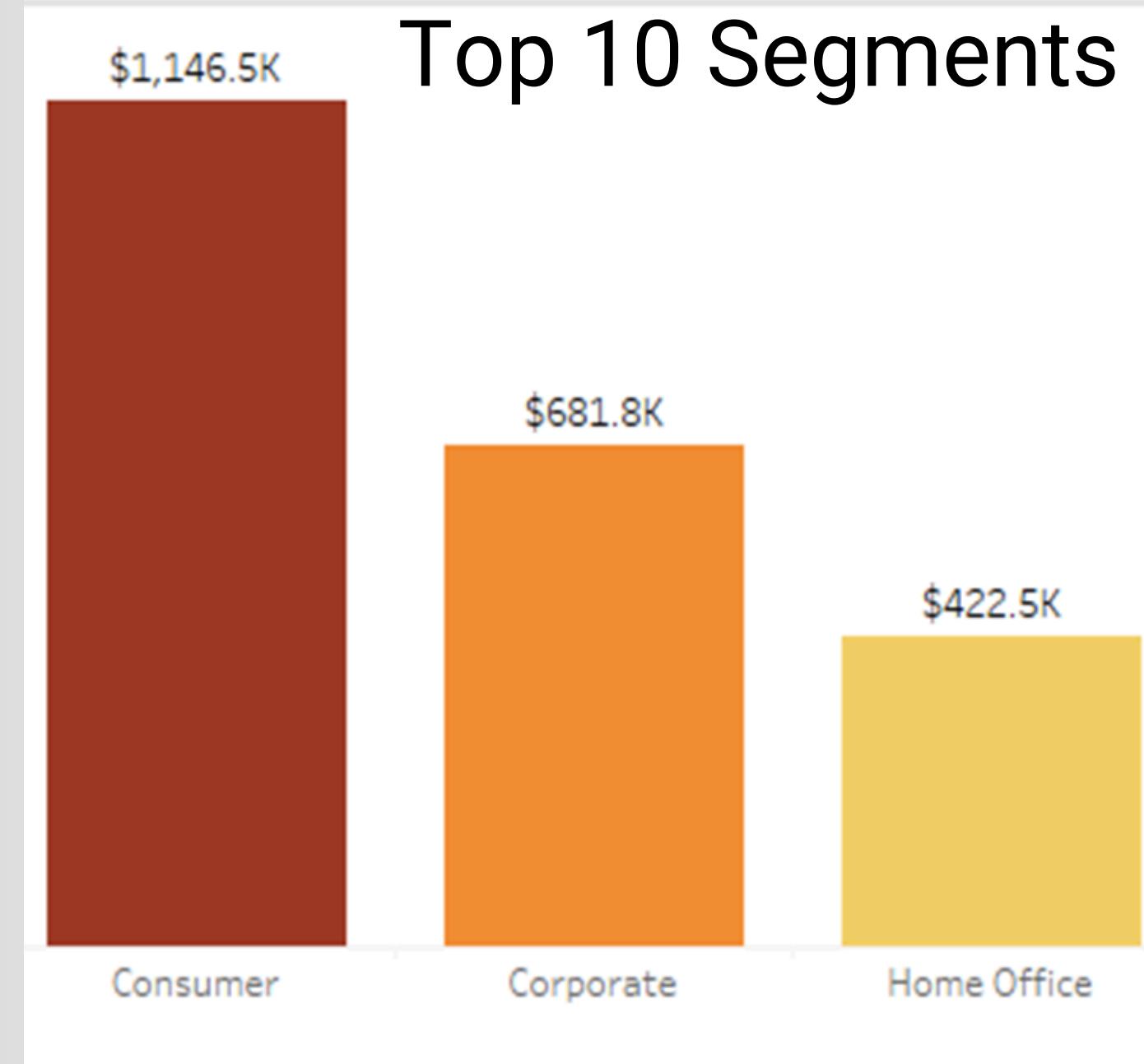
Customer Name	Total Sales
Sean Miller	\$25,042.0
Tamara Chand	\$19,050.0
Raymond Buch	\$15,117.0
Tom Ashbrook	\$14,596.0
Adrian Barton	\$14,476.0
Ken Lonsdale	\$14,175.0
Sanjit Chand	\$14,145.0
Hunter Lopez	\$12,875.0
Sanjit Engle	\$12,209.0
Christopher Conant	\$12,128.0



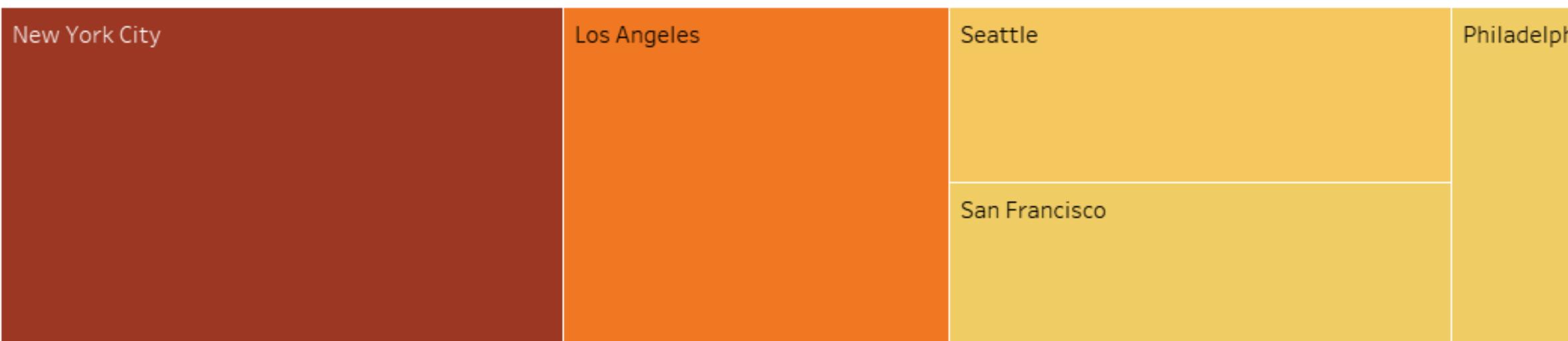
Top 10 Customers

Top 10 Segments

Consumers have the highest sales among other segments by more than 1M \$



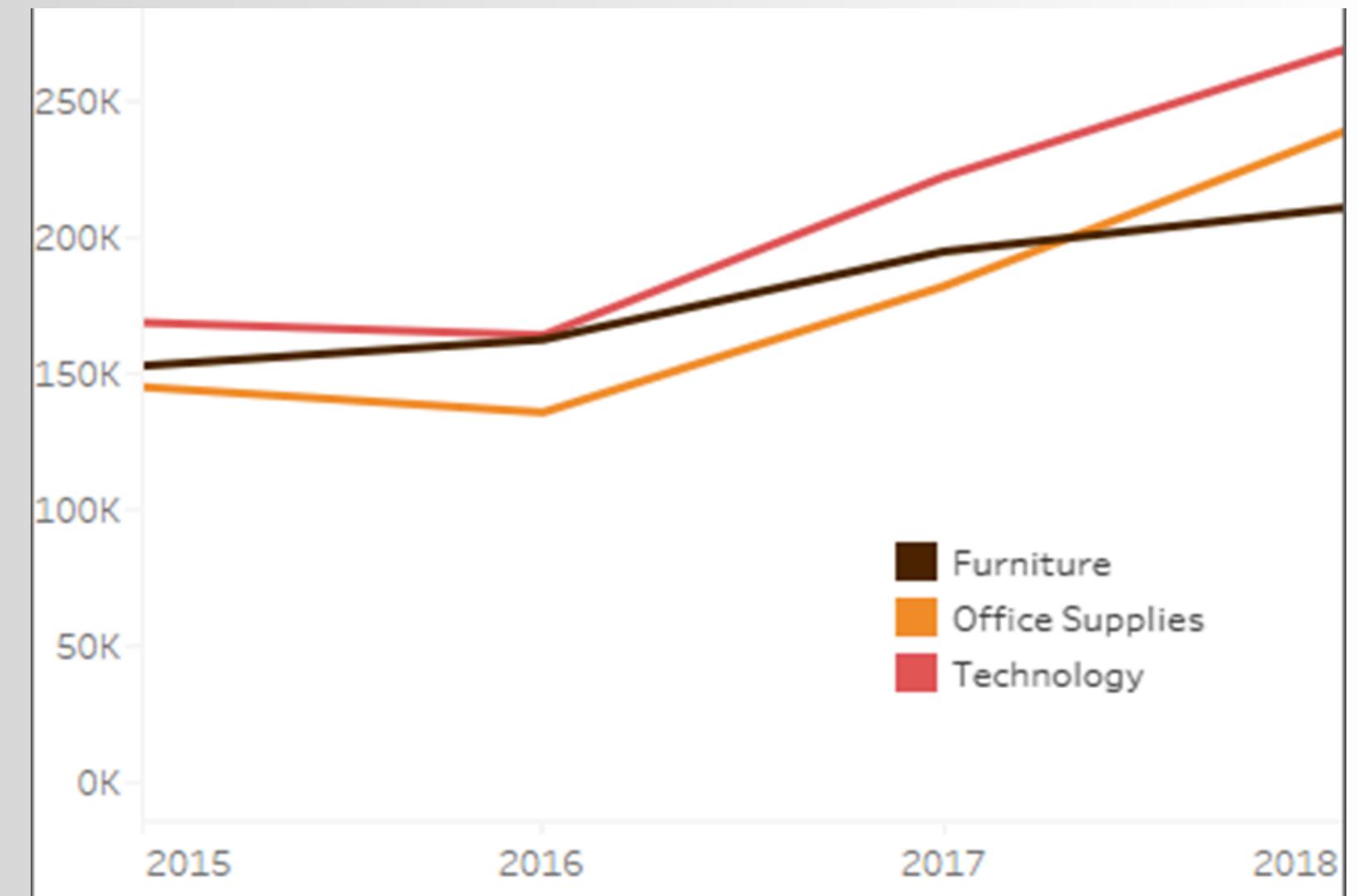
Top Five City by Sales

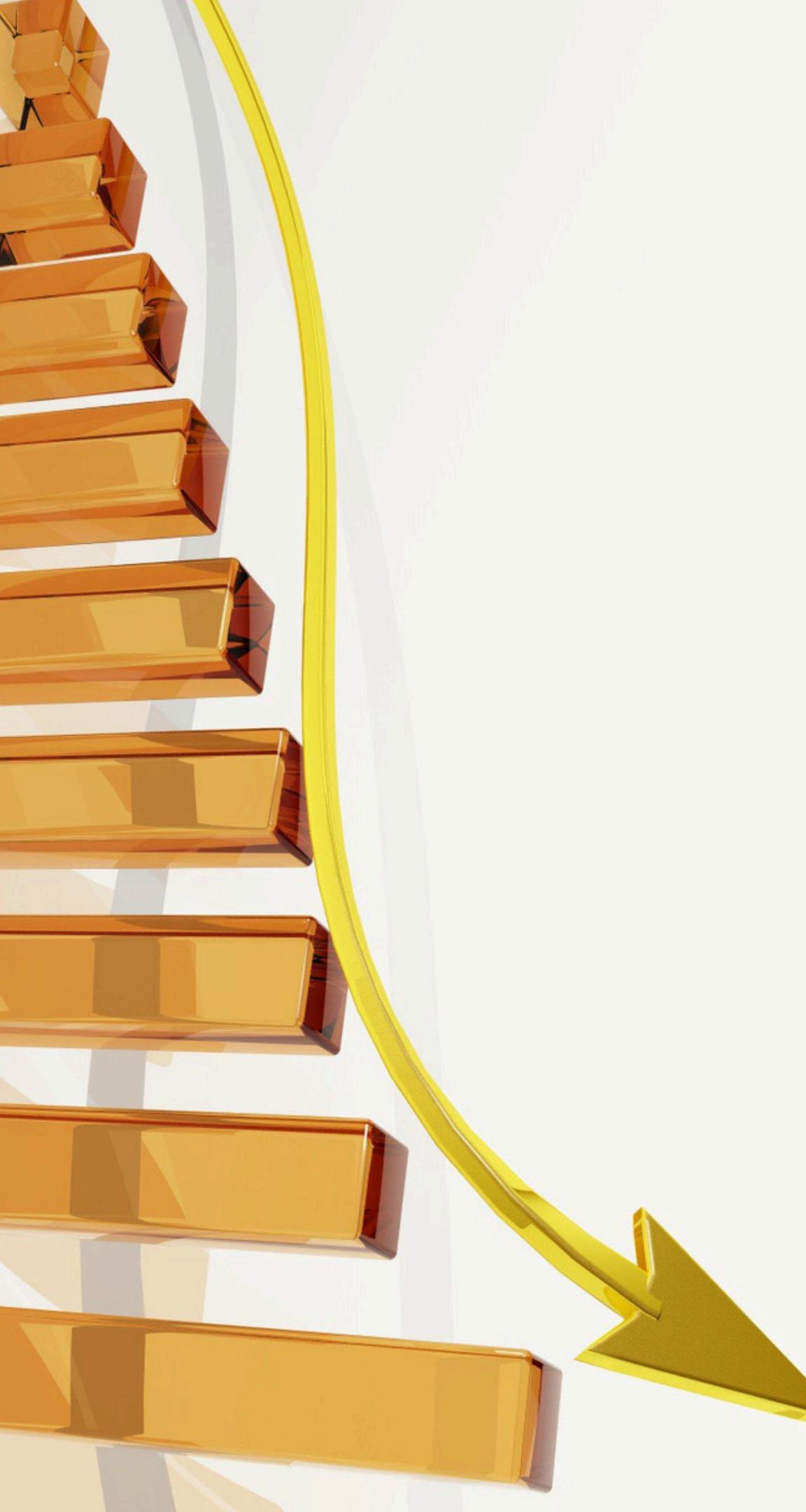


New York have recorded the highest sales by nearly 252k\$

Sales by Categories

There has been a significant increase in sales across various categories over the years.

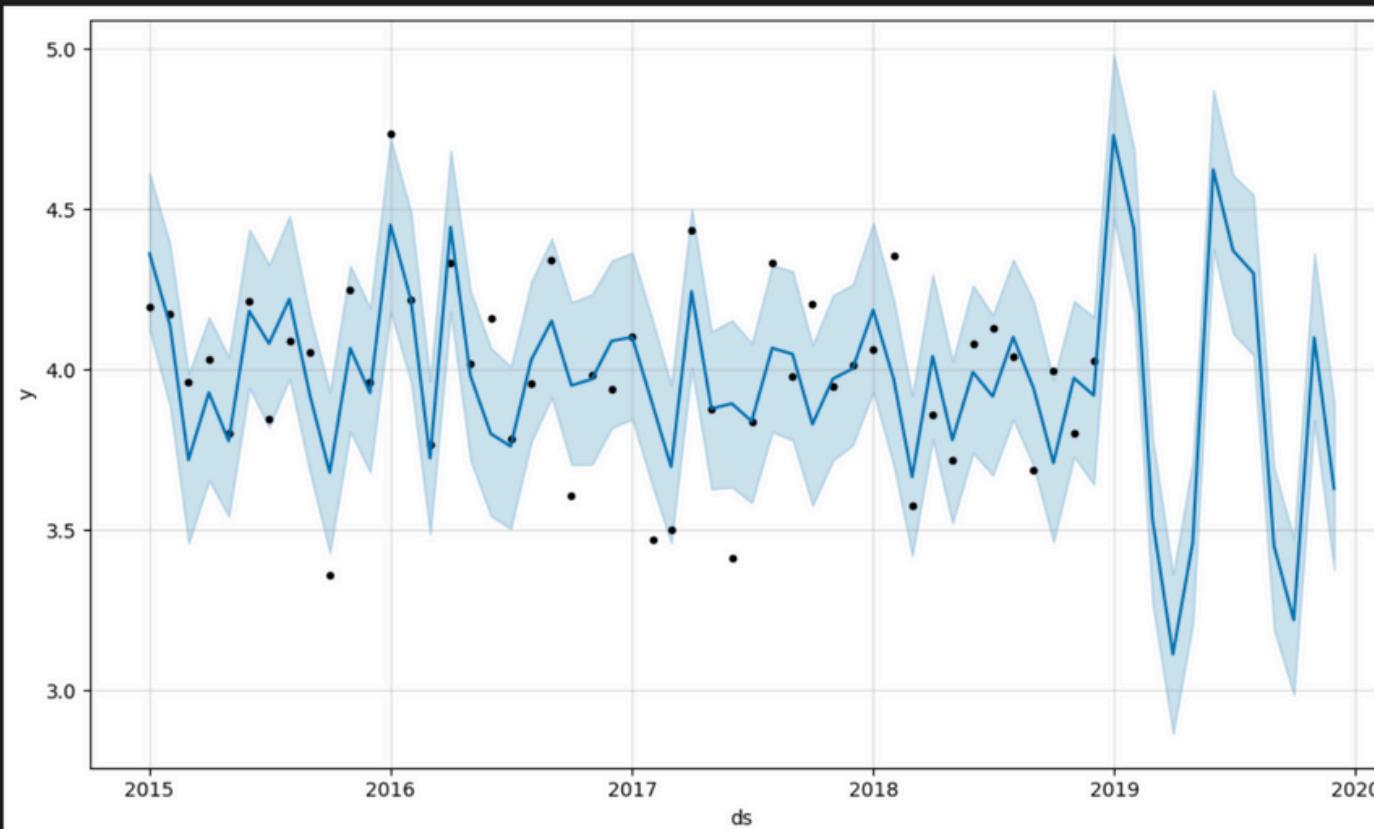




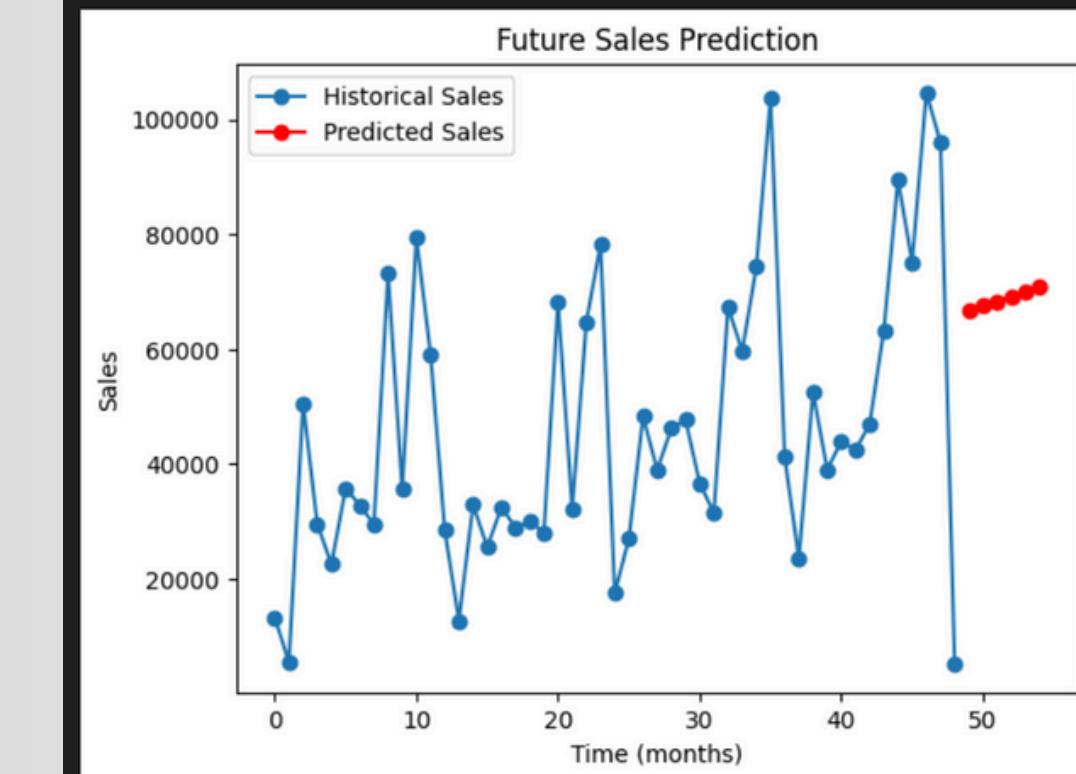
Forcasting Questions

1. Analyzing & Predicting Future Growth Over time

```
# Plot the forecast  
model.plot(forecast)  
plt.show()  
  
# Print the forecast for shipping delays  
print(forecast[['ds', 'yhat']].tail(12))
```



```
# Visualize historical and predicted sales  
plt.plot(data_grouped['time'], data_grouped['Sales'], label='Historical Sales', marker='o')  
plt.plot(future['time'], future_predictions, label='Predicted Sales', marker='o', color='red')  
plt.xlabel('Time (months)')  
plt.ylabel('Sales')  
plt.title('Future Sales Prediction')  
plt.legend()  
plt.show()
```



2. Analyzing & Predicting Future of shipping days

Conclusion and Key insights:

This dashboard provides a clear and comprehensive view of store sales performance, highlighting critical metrics to support data-driven decision-making.

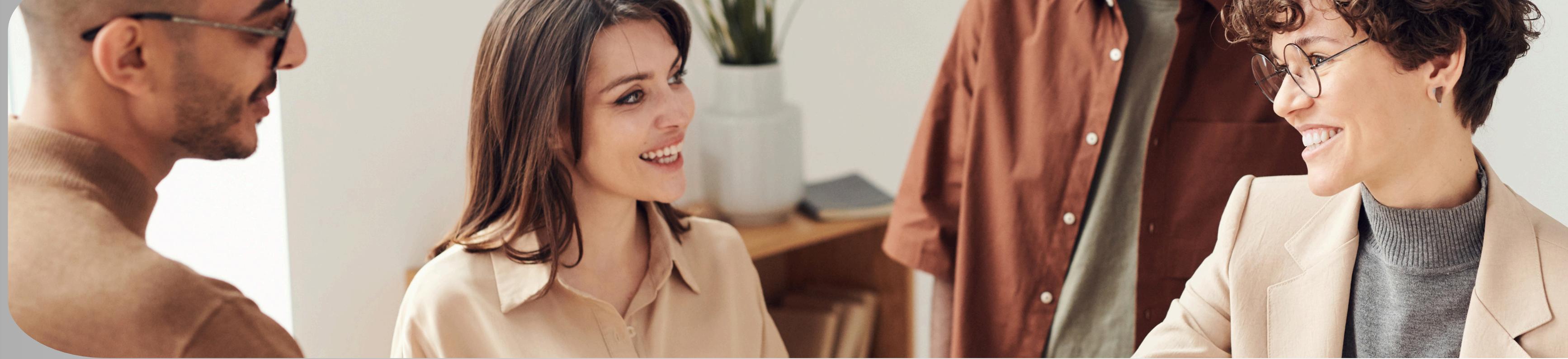
This tool empowers managers to optimize sales strategies, streamline operations, and boost overall performance.



Key features:

- **Sales Trends:** Tracks sales patterns over time to identify growth opportunities and seasonal trends.
- **Category Performance:** Analyzes sales by product category, pinpointing high and low performers.
- **Shipment Insights:** Monitors shipping modes and delivery efficiency to improve logistics.
- **Revenue Drivers:** Identifies top-selling products and key revenue sources..





Thanks!

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Data forecasting-Dashboard-Final report

Data Cleaning-Analysis question-Datafor casting-Dashboard

Dataforcasting-Dashboard-Power piont

Data cleaning-Data forcasting-Dashboard-power piont