



Analyzing Sales Performance



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Led by :

ENG : Aya El Ghaly

INTRO

Introduction

We are working with a dataset that consists of three different sources: Customer, Product, and Order data.

Our goal is to clean this data and prepare it for analysis by identifying and handling missing values, removing duplicates, and ensuring proper data types for effective analysis.



Key Steps



Cleaning Process

Analysis Process

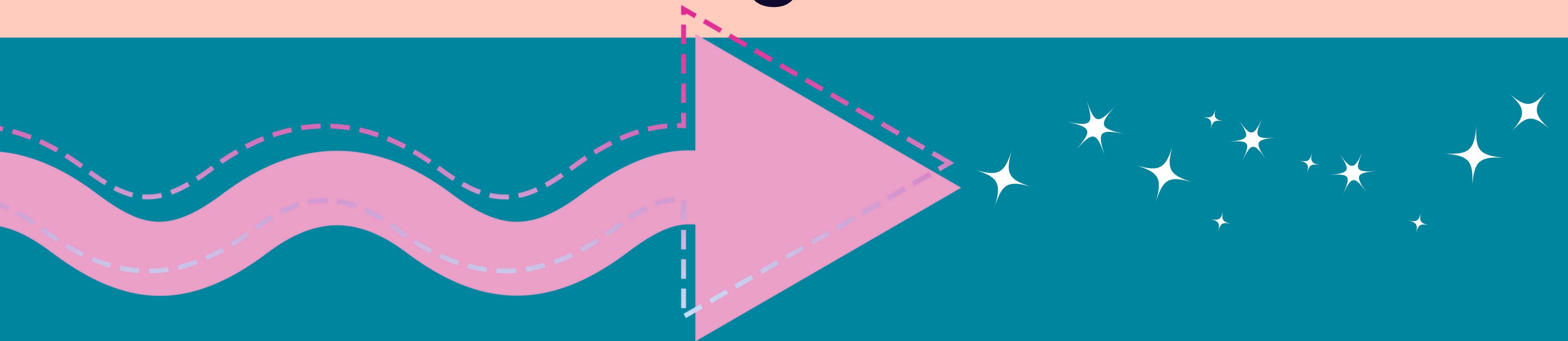
Tableau

Conclusion

START

First Step

Cleaning Process



Cleaning

Importing Libraries



PANDAS

For data manipulation and analysis



NUMPY

For numerical operations and array management

```
import pandas as pd  
import numpy as np  
import matplotlib.pyplot as plt  
import seaborn as sns
```



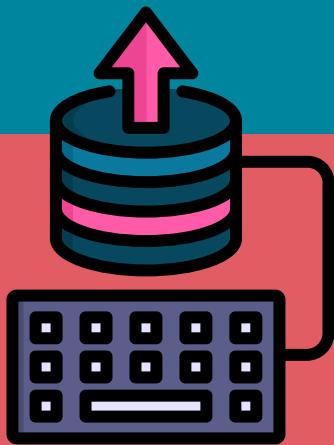
MATPLOTLIB .PYPLOT

For visualizations

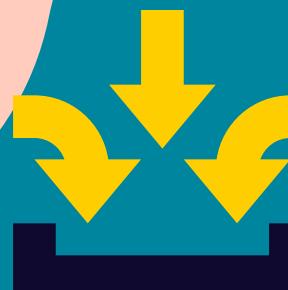
SEABORN

For statistical visualizations

Loading the Data



- To load the dataset, I used the pandas library's `read_csv()` function to import CSV files into dataframes.
- This allows me to easily work with the data and inspect its structure.
- Each CSV file contains data related to customers, orders, and products, and they were read using the appropriate file paths and encoding.



Input

```
# Load the datasets
df1 = pd.read_csv('/kaggle/input/bussiness1/Customer-Raw Data - Business Data Set (Copy-csv)2 - Copy.csv', encoding='ISO-8859-1')
df2 = pd.read_csv('/kaggle/input/bussiness1/Del Col- Raw Data - Business Data Set.csv', encoding='ISO-8859-1')
df3 = pd.read_csv('/kaggle/input/bussiness1/Product- Raw Data - Business Data Set (Copy-csv) - Copy.csv', encoding='ISO-8859-1')
```

Display the first 10 rows
`print(df2.head(10))`

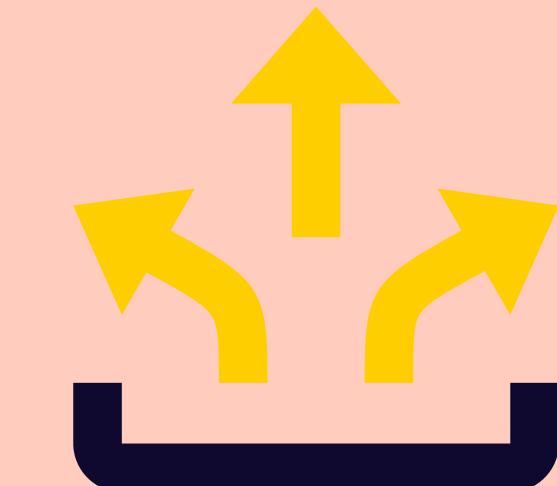


| | Order ID | Order Date | Ship Mode | Customer ID |
|---|----------------|-----------------|----------------|-------------|
| 0 | CA-2016-152156 | 11/8/2016 0:00 | NaN | CG-12520 |
| 1 | CA-2016-152156 | 11/8/2016 0:00 | Second Class | CG-12520 |
| 2 | CA-2016-138688 | 6/12/2016 0:00 | Second Class | DV-13045 |
| 3 | US-2015-108966 | 10/11/2015 0:00 | Standard Class | SO-20335 |
| 4 | US-2015-108966 | 10/11/2015 0:00 | Standard Class | SO-20335 |
| 5 | CA-2014-115812 | 6/9/2014 0:00 | Standard Class | BH-11710 |
| 6 | CA-2014-115812 | 6/9/2014 0:00 | Standard Class | BH-11710 |
| 7 | CA-2014-115812 | 6/9/2014 0:00 | Standard Class | BH-11710 |
| 8 | CA-2014-115812 | 6/9/2014 0:00 | Standard Class | BH-11710 |
| 9 | CA-2014-115812 | 6/9/2014 0:00 | Standard Class | BH-11710 |

| | Product ID | country | city | State | Postal Code |
|---|-----------------|---------------|-----------------|------------|-------------|
| 0 | FUR-BO-10001798 | United States | Henderson | Kentucky | 42420 |
| 1 | FUR-CH-10000454 | United States | Henderson | Kentucky | 42420 |
| 2 | OFF-LA-10000240 | United States | Los Angeles | California | 90036 |
| 3 | FUR-TA-10000577 | United States | Fort Lauderdale | Florida | 33311 |
| 4 | OFF-ST-10000760 | United States | Fort Lauderdale | Florida | 33311 |
| 5 | FUR-FU-10001487 | United States | Los Angeles | California | 90032 |
| 6 | OFF-AR-10002833 | United States | Los Angeles | California | 90032 |
| 7 | TEC-PH-10002275 | United States | Los Angeles | California | 90032 |
| 8 | OFF-BI-10003910 | United States | Los Angeles | California | 90032 |
| 9 | OFF-AP-10002892 | United States | Los Angeles | California | 90032 |

| | Region | Category | Sub-Category | Sales | Quantity | Discount | profit |
|---|--------|-----------------|--------------|----------|----------|----------|-----------|
| 0 | South | Furniture | Bookcases | NaN | 2.0 | 0.00 | 41.9136 |
| 1 | South | Furniture | Chairs | 731.9400 | 3.0 | 0.00 | NaN |
| 2 | West | Office Supplies | Labels | 14.6200 | 2.0 | 0.00 | 6.8714 |
| 3 | South | Furniture | Tables | 957.5775 | NaN | 0.45 | -383.0310 |
| 4 | South | Office Supplies | Storage | 22.3680 | 2.0 | 0.20 | 2.5164 |
| 5 | West | Furniture | Furnishings | 48.8600 | 7.0 | 0.00 | NaN |
| 6 | West | Office Supplies | Art | NaN | 4.0 | 0.00 | NaN |
| 7 | West | Technology | Phones | 987.1520 | 6.0 | 0.20 | 90.7152 |
| 8 | West | Office Supplies | Binders | NaN | NaN | 0.20 | NaN |
| 9 | West | Office Supplies | Appliances | NaN | 5.0 | 0.00 | NaN |

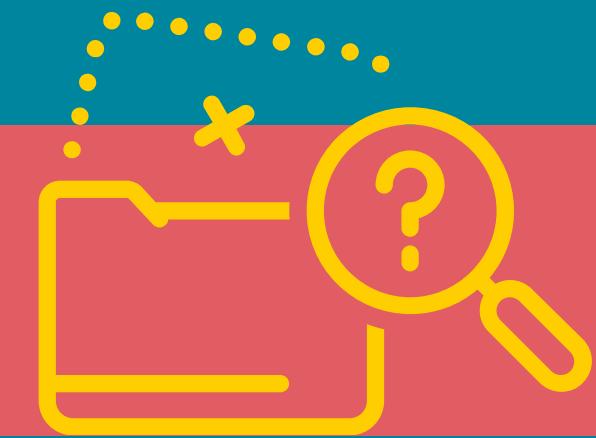
Output



Cleaning



Check for Missing Data



- We use the `isnull().sum()` function to check for missing values in each column.
- The dataset may have missing values in key columns like "Sales", "Quantity", and "Profit."

```
df1.isnull().sum()  
  
df3.isnull().sum()  
  
df2.isnull().sum()
```

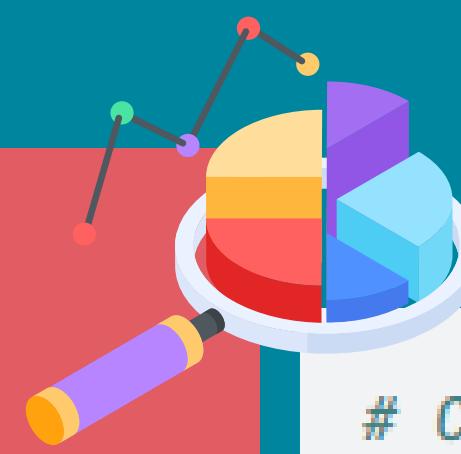
```
In [9]: df1.isnull().sum()  
  
Out[9]: Customer ID      0  
Customer Name      0  
dtype: int64  
  
In [10]: df3.isnull().sum()  
  
Out[10]: Product ID      0  
Product Name       0  
dtype: int64
```

```
In [11]: df2.isnull().sum()  
  
Out[11]: Order ID          0  
Order Date         0  
Ship Mode        1284  
Customer ID      0  
Product ID       0  
country           0  
city              0  
State             0  
Postal Code       0  
Region            0  
Category          0  
Sub-Category      0  
Sales             1596  
Quantity          558  
Discount          0  
profit            1921  
dtype: int64
```

Cleaning

Handling Missing Data

- We calculate the percentage of missing data in each column using a simple formula.
- Based on the percentage, we decide whether to drop the column or clean it (fill/drop rows).
- If missing values exceed a threshold (e.g., 60%), we drop the column.



```
# Calculating percentage of missing values
null_percentage = (df2.isnull().sum() / len(df2)) * 100
print(null_percentage)
```

```
df_cleaned = df2.loc[:, null_percentage < 60]
```

```
# Dropping rows with missing values
df2_cleaned = df2.dropna()
```

```
# Checking if missing values are removed
print(df2_cleaned)
```

Cleaning

Output

```
] null_percentage = (df2.isnull().sum() / len(df2)) * 100  
print(null_percentage)
```

```
Order ID      0.000000  
Order Date    0.000000  
Ship Mode     12.847709  
Customer ID   0.000000  
Product ID    0.000000  
country       0.000000  
city          0.000000  
State          0.000000  
Postal Code   0.000000  
Region         0.000000  
Category       0.000000  
Sub-Category   0.000000  
Sales          15.969582  
Quantity       5.583350  
Discount       0.000000  
profit         19.221533  
dtype: float64
```

```
Order ID      Order Date    Ship Mode Customer ID \\  
2   CA-2016-138688  6/12/2016 0:00  Second Class DV-13045  
4   US-2015-108966  10/11/2015 0:00 Standard Class SO-20335  
7   CA-2014-115812  6/9/2014 0:00  Standard Class BH-11710  
14  US-2015-118983  11/22/2015 0:00 Standard Class HP-14815  
21  CA-2016-137330  12/9/2016 0:00  Standard Class KB-16585  
...           ...           ...           ...           ...  
9989 CA-2014-110422  1/21/2014 0:00  Second Class TB-21400  
9990 CA-2017-121258  2/26/2017 0:00 Standard Class DB-13060  
9991 CA-2017-121258  2/26/2017 0:00 Standard Class DB-13060  
9992 CA-2017-121258  2/26/2017 0:00 Standard Class DB-13060  
9993 CA-2017-119914  5/4/2017 0:00  Second Class CC-12220
```

```
Product ID    country      city      State \\  
2   OFF-LA-10000240 United States Los Angeles California  
4   OFF-ST-10000760 United States Fort Lauderdale Florida  
7   TEC-PH-10002275 United States Los Angeles California  
21  OFF-AR-10000246 United States Fremont Nebraska  
...           ...           ...           ...  
9989 FUR-FU-10001889 United States Miami Florida  
9990 FUR-FU-10000747 United States Costa Mesa California  
9991 TEC-PH-10003645 United States Costa Mesa California  
9992 OFF-PA-10004041 United States Costa Mesa California  
9993 OFF-AP-10002684 United States Westminster California
```

```
Postal Code   Region      Category Sub-Category Sales  Quantity \\  
2   90036    West   Office Supplies Labels  14.620  2.0  
4   33311    South  Office Supplies Storage 22.368  2.0  
7   90032    West   Technology  Phones  907.152  6.0  
14  76106    Central Office Supplies Appliances 68.810  5.0  
21  68025    Central Office Supplies Art  19.460  7.0  
...           ...           ...           ...           ...  
9989 33180   South  Furniture Furnishings 25.248  3.0  
9990 92627   West   Furniture Furnishings 91.960  2.0  
9991 92627   West   Technology  Phones  258.576  2.0  
9992 92627   West   Office Supplies Paper  29.600  4.0  
9993 92683   West   Office Supplies Appliances 243.160  2.0
```

```
Discount      profit  
2   0.0   6.8714  
4   0.2   2.5164  
7   0.2   90.7152  
14  0.8  -123.8580  
21  0.0   5.0596  
...           ...           ...  
9989 0.2   4.1028  
9990 0.0   15.6332  
9991 0.2   19.3932  
9992 0.0   13.3200  
9993 0.0   72.9480
```

Cleaning

Checking for Duplicates

- Duplicates are checked and removed from the dataset to avoid redundant data affecting the analysis.



```
# Count the number of duplicate entries in the DataFrame df2  
df2.duplicated().sum()
```

In [16]:

```
df2.duplicated().sum()
```

Out[16]:

0

```
# Remove duplicate entries from the DataFrame df2_cleaned  
df2_cleaned = df2_cleaned.drop_duplicates()
```

Cleaning

Data Formatting & Preprocessing

- Convert columns to appropriate data types (e.g., date format).
- Strip any whitespace from column names.

Input & Output

```
# Remove leading and trailing whitespace from column names  
df2_cleaned.columns = df2_cleaned.columns.str.strip()
```

```
In [17]: df2_cleaned = df2_cleaned.drop_duplicates()
```

```
In [18]: df2_cleaned['Order Date'] = pd.to_datetime(df2_cleaned['Order Date'])
```

```
In [19]: print(df2_cleaned.head())
```

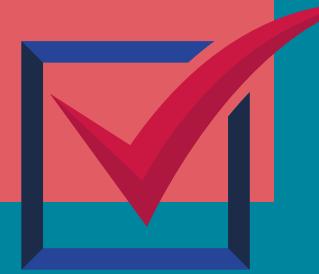
| | Order ID | Order Date | Ship Mode | Customer ID | Product ID |
|----|----------------|------------|----------------|-------------|-----------------|
| 2 | CA-2016-138688 | 2016-06-12 | Second Class | DV-13045 | OFF-LA-10000240 |
| 4 | US-2015-108966 | 2015-10-11 | Standard Class | SO-20335 | OFF-ST-10000760 |
| 7 | CA-2014-115812 | 2014-06-09 | Standard Class | BH-11710 | TEC-PH-10002275 |
| 14 | US-2015-118983 | 2015-11-22 | Standard Class | HP-14815 | OFF-AP-10002311 |
| 21 | CA-2016-137330 | 2016-12-09 | Standard Class | KB-16585 | OFF-AR-10000246 |

| | country | city | State | Postal Code | Region |
|----|---------------|-----------------|------------|-------------|---------|
| 2 | United States | Los Angeles | California | 90036 | West |
| 4 | United States | Fort Lauderdale | Florida | 33311 | South |
| 7 | United States | Los Angeles | California | 90032 | West |
| 14 | United States | Fort Worth | Texas | 76106 | Central |
| 21 | United States | Fremont | Nebraska | 68025 | Central |

| | Category | Sub-Category | Sales | Quantity | Discount | Profit |
|----|-----------------|--------------|---------|----------|----------|-----------|
| 2 | Office Supplies | Labels | 14.620 | 2.0 | 0.0 | 6.8714 |
| 4 | Office Supplies | Storage | 22.368 | 2.0 | 0.2 | 2.5164 |
| 7 | Technology | Phones | 907.152 | 6.0 | 0.2 | 90.7152 |
| 14 | Office Supplies | Appliances | 68.810 | 5.0 | 0.8 | -123.8580 |
| 21 | Office Supplies | Art | 19.460 | 7.0 | 0.0 | 5.0596 |

Cleaning

Checking for Zeros in Key Columns



- The code checks for zero values in the specified columns and provides a simple report on their presence or absence.
- The code snippet you provided checks for missing (null) values in the DataFrame `df2_cleaned` and prints the columns that have missing values, along with the count of those missing values.

In [22]:

```
zeros_in_col_sales = (df_cleaned['Sales'] == 0).any()
zeros_in_col_ship_mode = (df_cleaned['Ship Mode'] == 0).any()

if not zeros_in_col_sales and not zeros_in_col_ship_mode:
    print(" يوجد اصفر في المجموعات Sales و Ship Mode.")
else:
    if zeros_in_col_sales:
        print(" يوجد اصفر في المجموع Sales.")
    if zeros_in_col_ship_mode:
        print(" يوجد اصفر في المجموع Ship Mode.")
```

يوجد اصفر في المجموعات Sales و Ship Mode.

In [23]:

```
null_counts = df2_cleaned.isnull().sum()
print(null_counts[null_counts > 0])
```

Series([], dtype: int64)

Cleaning

Identifying Outliers

What is IQR?

The IQR represents the middle 50% of your data, which lies between the first quartile (Q1) and the third quartile (Q3). It helps in understanding the spread of the bulk of your data.

Q1 (First Quartile)

The value below which 25% of the data falls.

Q3 (Third Quartile)

The value below which 75% of the data falls.

IQR Calculation

$$\text{IQR} = Q3 - Q1$$

Identifying Outliers

Outliers are data points that fall outside the typical range of your dataset. Using the IQR method, we define outliers as values that are:

1. Less than $Q1 - 1.5 * \text{IQR}$
(Lower bound)
2. Greater than $Q3 + 1.5 * \text{IQR}$
(Upper bound)

Cleaning

Output



```
Q1 = df2['Sales'].quantile(0.25)
Q3 = df2['Sales'].quantile(0.75)
IQR = Q3 - Q1

lower_bound = Q1 - 1.5 * IQR
upper_bound = Q3 + 1.5 * IQR

outliers = df2[(df2['Sales'] < lower_bound) | (df2['Sales'] > upper_bound)]
print(outliers)
```

```
9931 FUR-BO-10004357 United States San Bernardino California
9942 OFF-ST-10001128 United States Anaheim California
9947 FUR-CH-10003746 United States Indianapolis Indiana
9948 OFF-AP-10002945 United States Indianapolis Indiana
9968 OFF-BI-10004600 United States Plainfield New Jersey
```

```
Postal Code Region Category Sub-Category Sales Quantity ...
3 33311 South Furniture Tables 957.5775 NaN
7 90032 West Technology Phones 907.1520 6.0
11 90032 West Technology Phones 911.4248 4.0
27 19140 East Furniture Bookcases 3083.4300 7.0
35 75080 Central Technology Phones 1097.5440 7.0
...
9931 92484 West Furniture Bookcases 683.3320 4.0
9942 92804 West Office Supplies Storage 998.8200 9.0
9947 46203 Central Furniture Chairs 1925.8800 6.0
9948 46203 Central Office Supplies Appliances 2405.2000 8.0
9968 7060 East Office Supplies Binders 735.9800 2.0
```

```
Discount profit
3 0.45 -383.0310
7 0.20 90.7152
11 0.20 68.3568
27 0.50 -1665.0522
35 0.20 123.4737
```

```
9931 0.15 -48.1960
9942 0.00 29.9646
9947 0.00 539.2464
9948 0.00 793.7160
9968 0.00 331.1910
```

[805 rows x 16 columns]

```
Product ID country city State ...
3 FUR-TA-10000577 United States Fort Lauderdale Florida
7 TEC-PH-10002275 United States Los Angeles California
11 TEC-PH-10002033 United States Los Angeles California
27 FUR-BO-10004834 United States Philadelphia Pennsylvania
35 TEC-PH-10004977 United States Richardson Texas
```

Cleaning

Pivot Table Creation for Sales Summary

In this step, we created a pivot table to summarize sales data by region and category. This allows us to easily analyze the total sales performance of different product categories across various regions.

Code Overview:

We used the `pivot_table` function in Python to group sales by region and category.

The table aggregates the total sales for each category in each region.

Purpose:

To provide a clear overview of how different regions perform in terms of sales, helping us identify trends and opportunities.

Cleaning

Output



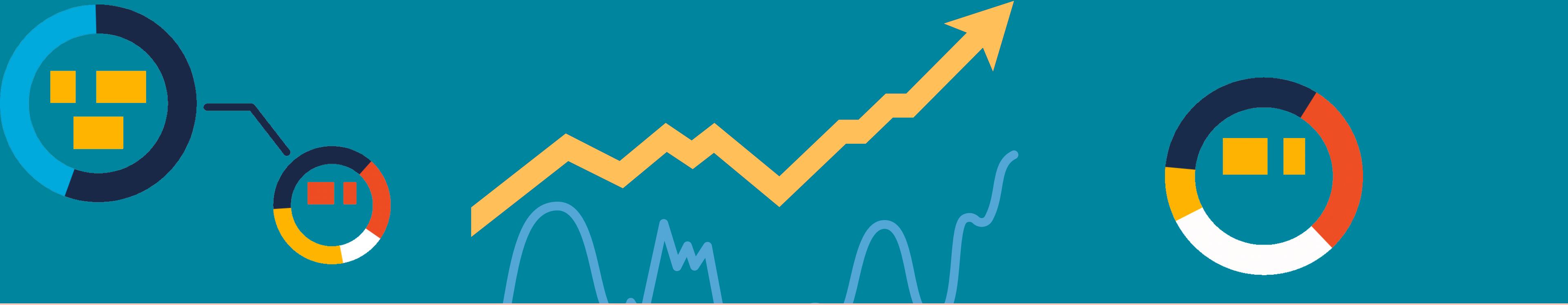
In [29]:

```
pivot_table = df2.pivot_table(  
    values='Sales',  
    index='Region',  
    columns='Category',  
    aggfunc='sum',  
    fill_value=0  
)
```

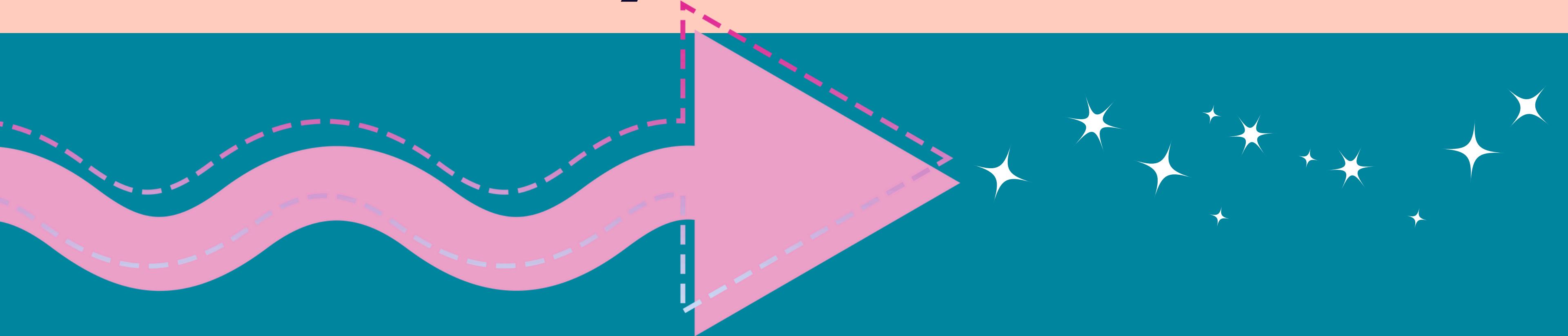
In [30]:

```
print(pivot_table)
```

| Region | Category | Furniture | Office Supplies | Technology |
|---------|--------------|-------------|-----------------|------------|
| Central | 143,028.5072 | 147,617.447 | 141,641.242 | |
| East | 182,563.8010 | 171,074.916 | 223,227.764 | |
| South | 98,250.8980 | 100,359.534 | 130,533.251 | |
| West | 214,402.4985 | 192,492.751 | 215,061.602 | |

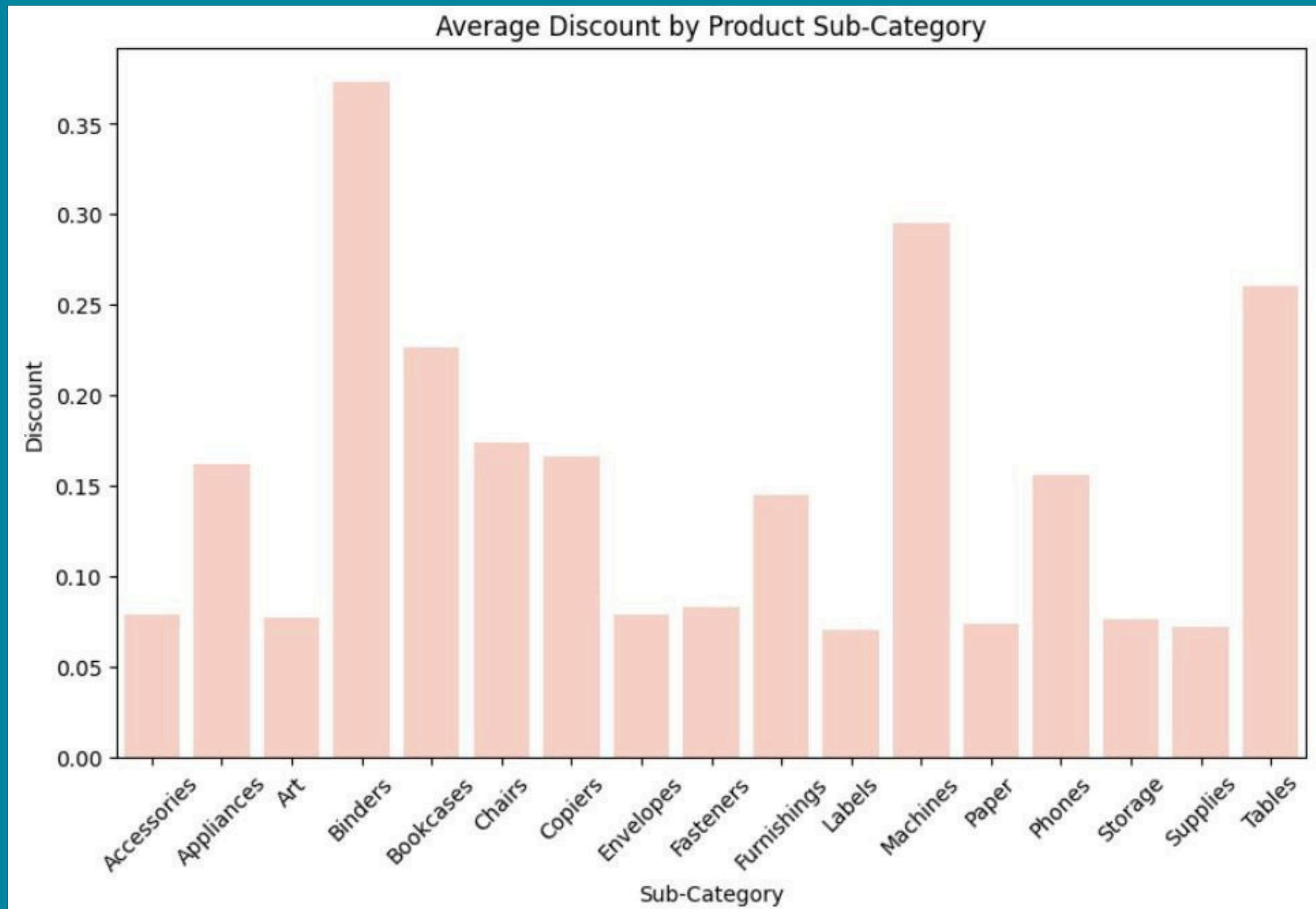


NEXT, **Analysis Process**

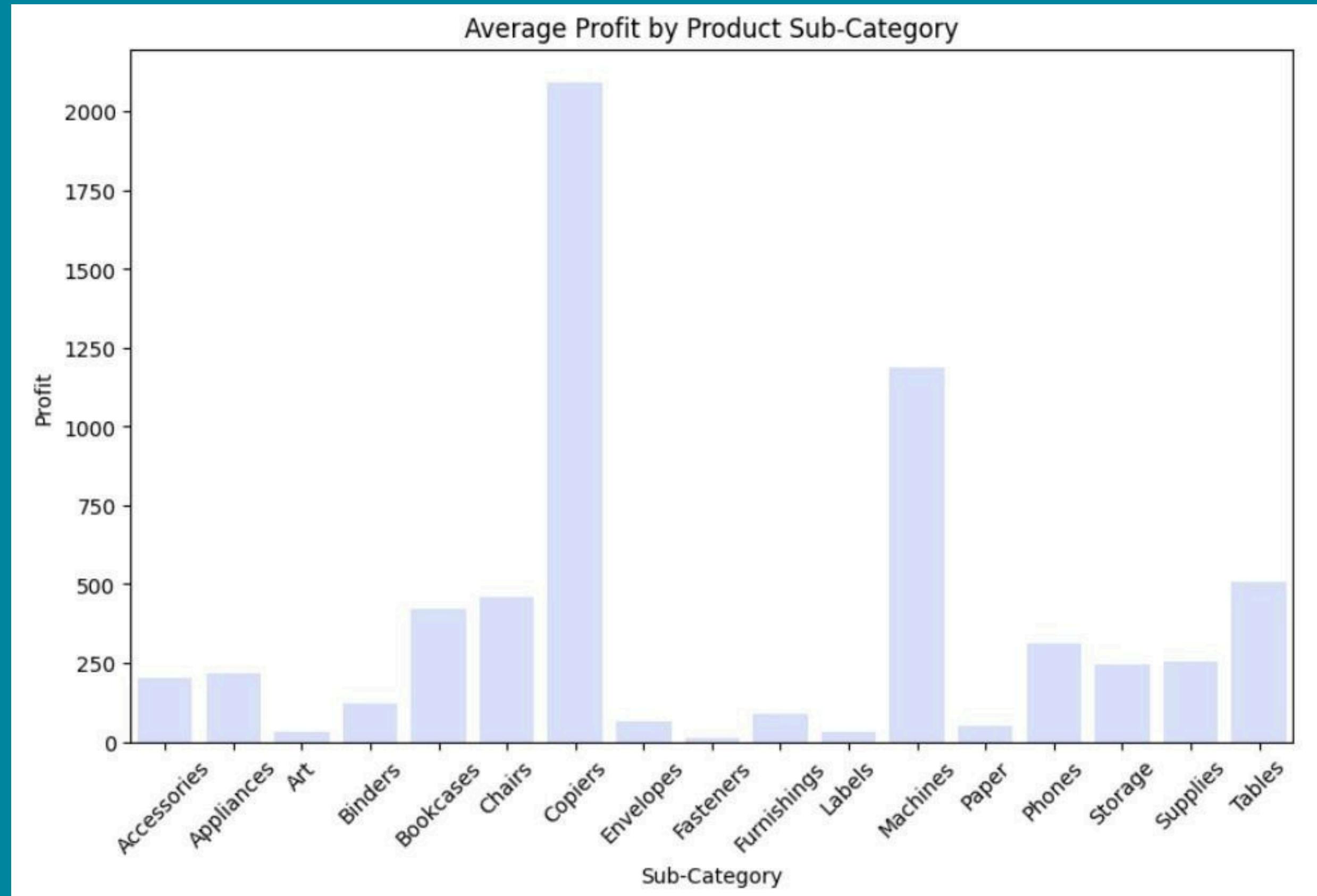




Average Discount by product Sub-Category



Average Profit by Product Sub-Category





Sales by ship mode, region, category and sum category

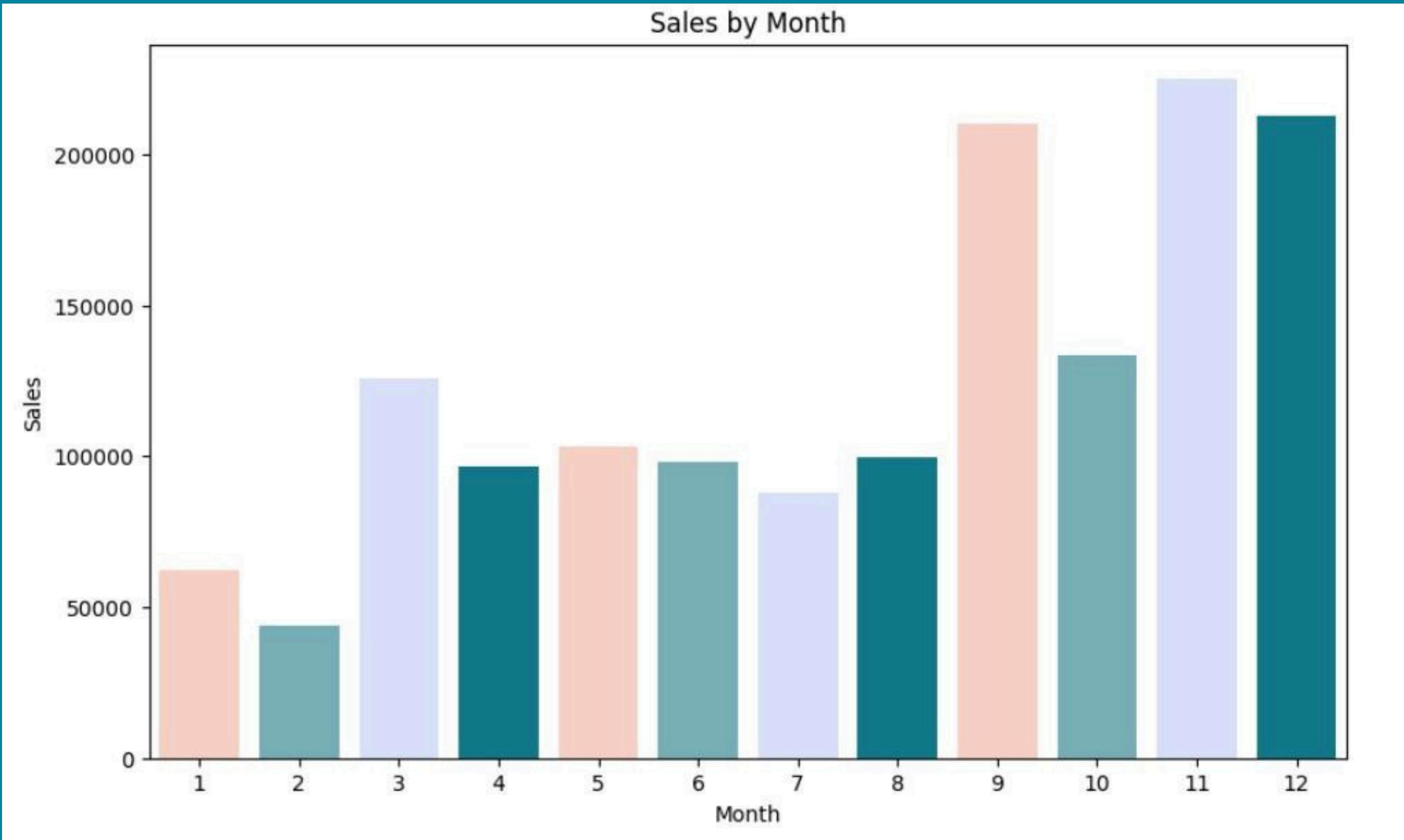


| | Category | Sub-Category | Sales |
|----|-----------------|--------------|-------------|
| 0 | Furniture | Bookcases | 75575.7316 |
| 1 | Furniture | Chairs | 220596.9850 |
| 2 | Furniture | Furnishings | 60520.3760 |
| 3 | Furniture | Tables | 134581.4235 |
| 4 | Office Supplies | Appliances | 71819.0080 |
| 5 | Office Supplies | Art | 16422.4040 |
| 6 | Office Supplies | Binders | 147734.7850 |
| 7 | Office Supplies | Envelopes | 10994.4200 |
| 8 | Office Supplies | Fasteners | 1786.0060 |
| 9 | Office Supplies | Labels | 7527.6700 |
| 10 | Office Supplies | Paper | 48728.9860 |
| 11 | Office Supplies | Storage | 137795.9540 |
| 12 | Office Supplies | Supplies | 34682.6460 |
| 13 | Technology | Accessories | 110385.7580 |
| 14 | Technology | Copiers | 110168.6400 |
| 15 | Technology | Machines | 105446.6030 |
| 16 | Technology | Phones | 204767.9860 |

| | Region | Sales |
|---|---------|-------------|
| 0 | Central | 342225.6916 |
| 1 | East | 463223.3870 |
| 2 | South | 230533.2635 |
| 3 | West | 463553.0400 |

| | Ship Mode | Sales |
|---|----------------|-------------|
| 0 | First Class | 224116.7439 |
| 1 | Same Day | 76555.2320 |
| 2 | Second Class | 299994.1230 |
| 3 | Standard Class | 898869.2832 |

Sales by Month

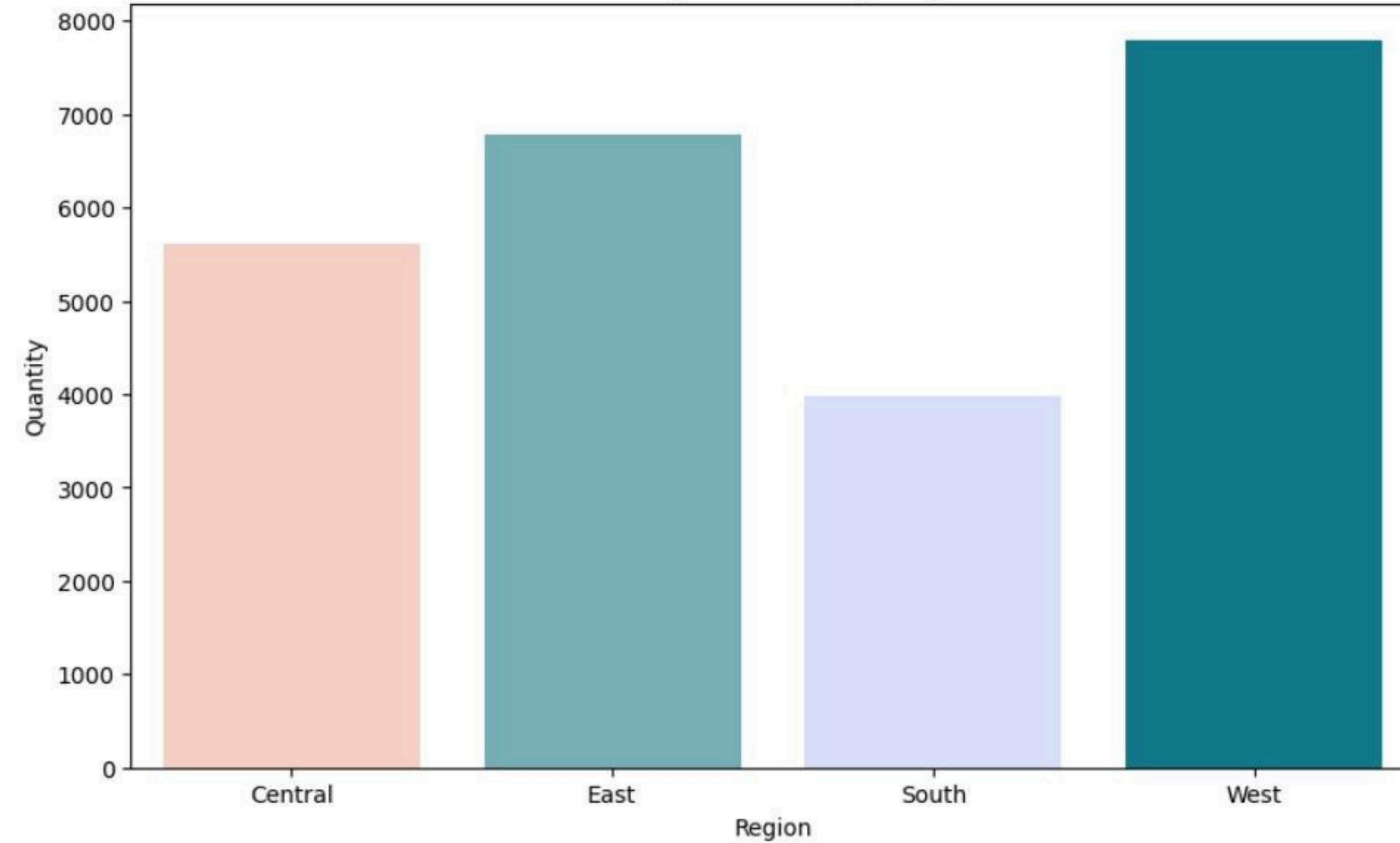




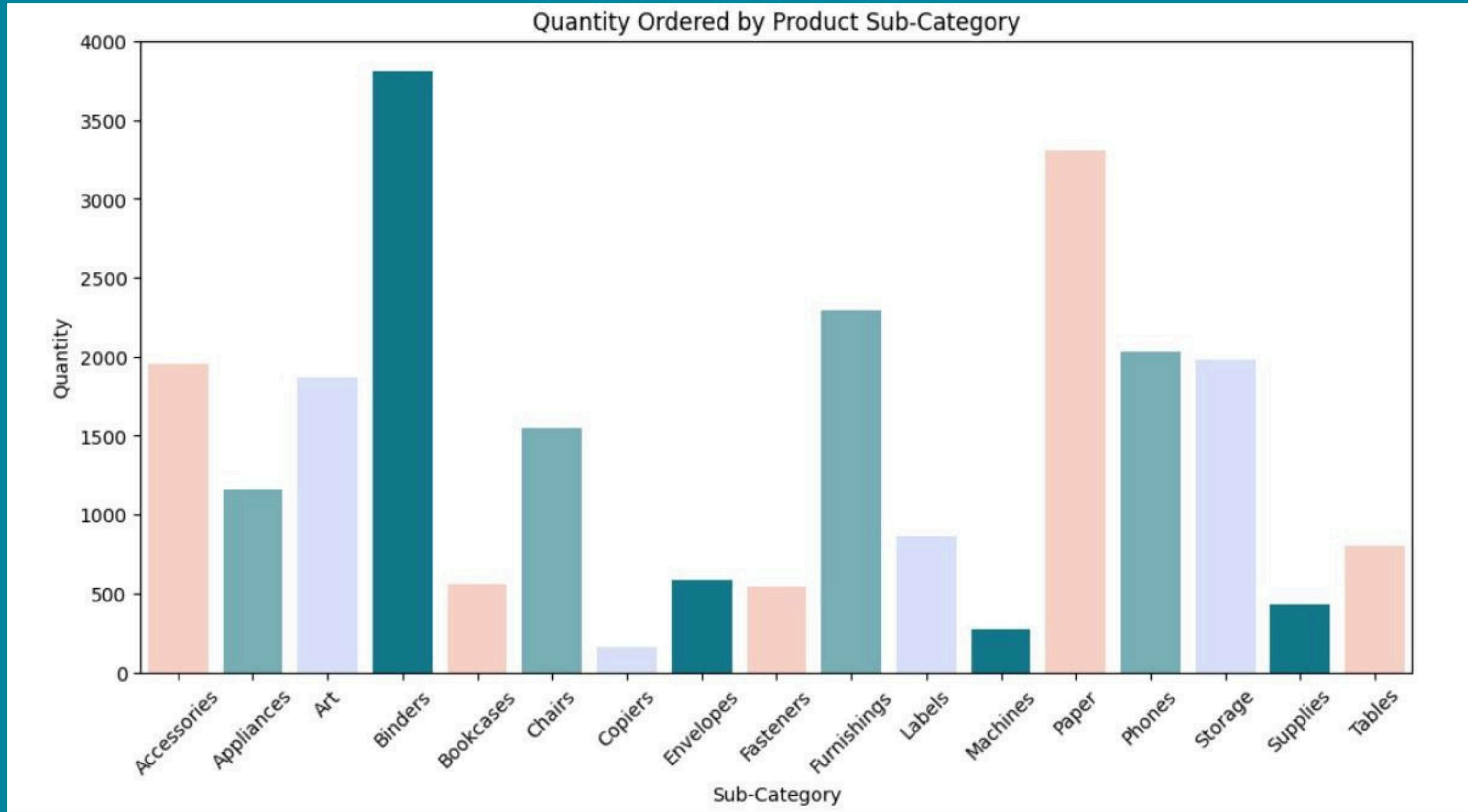
Quantity Purchased by Region



Quantity Purchased by Region

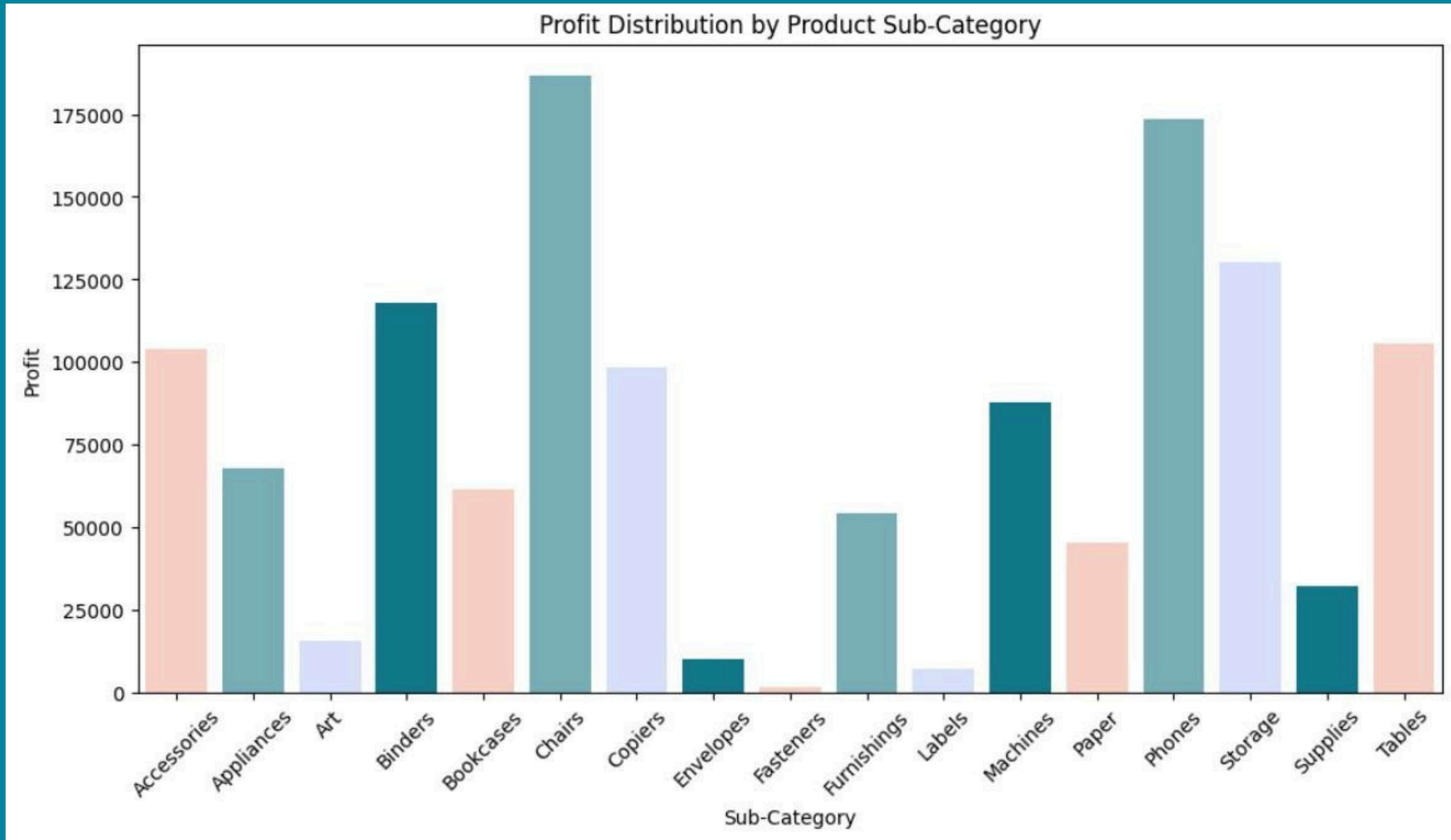


Quantity Ordered by Product Sub-Category

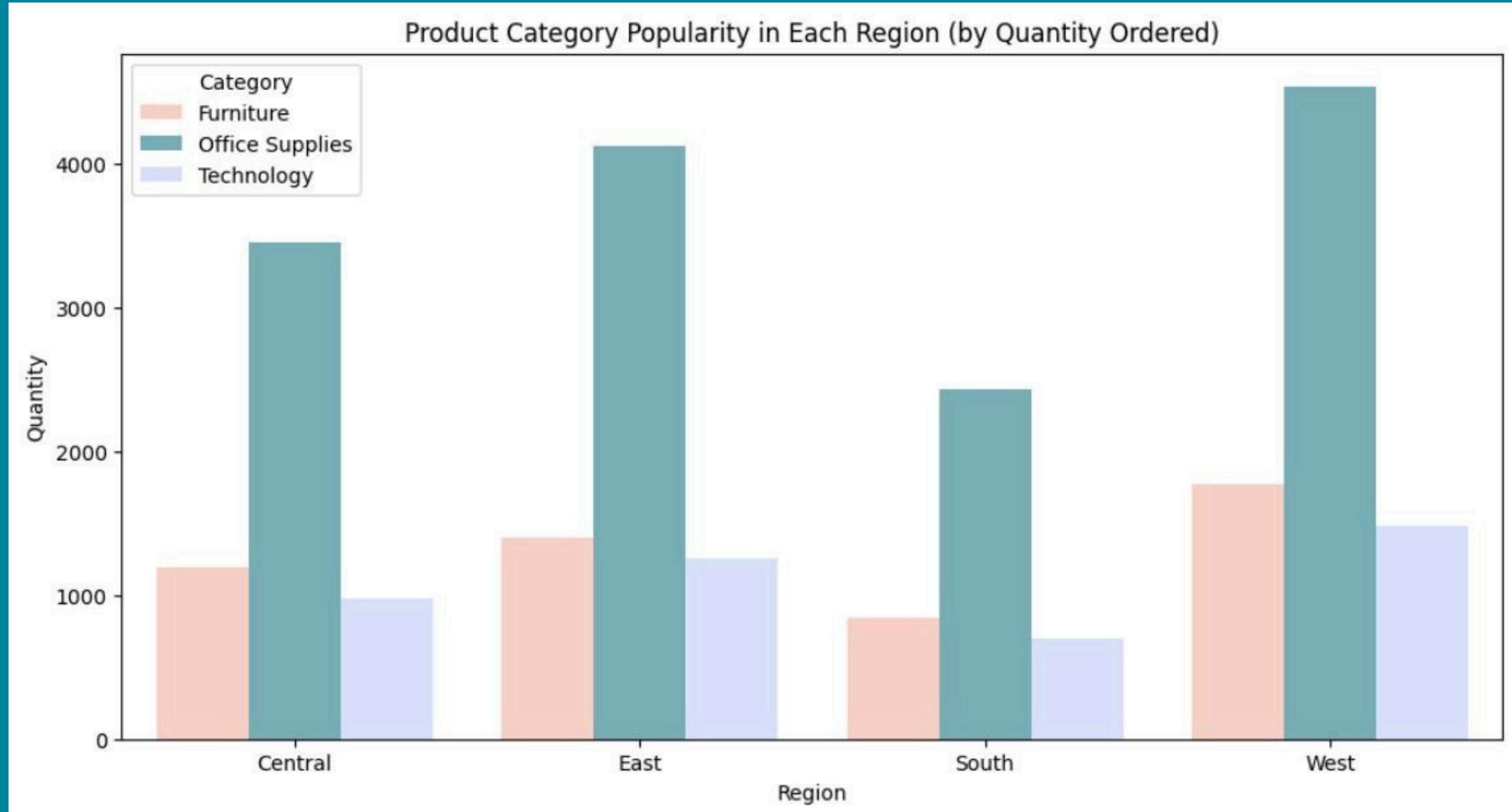




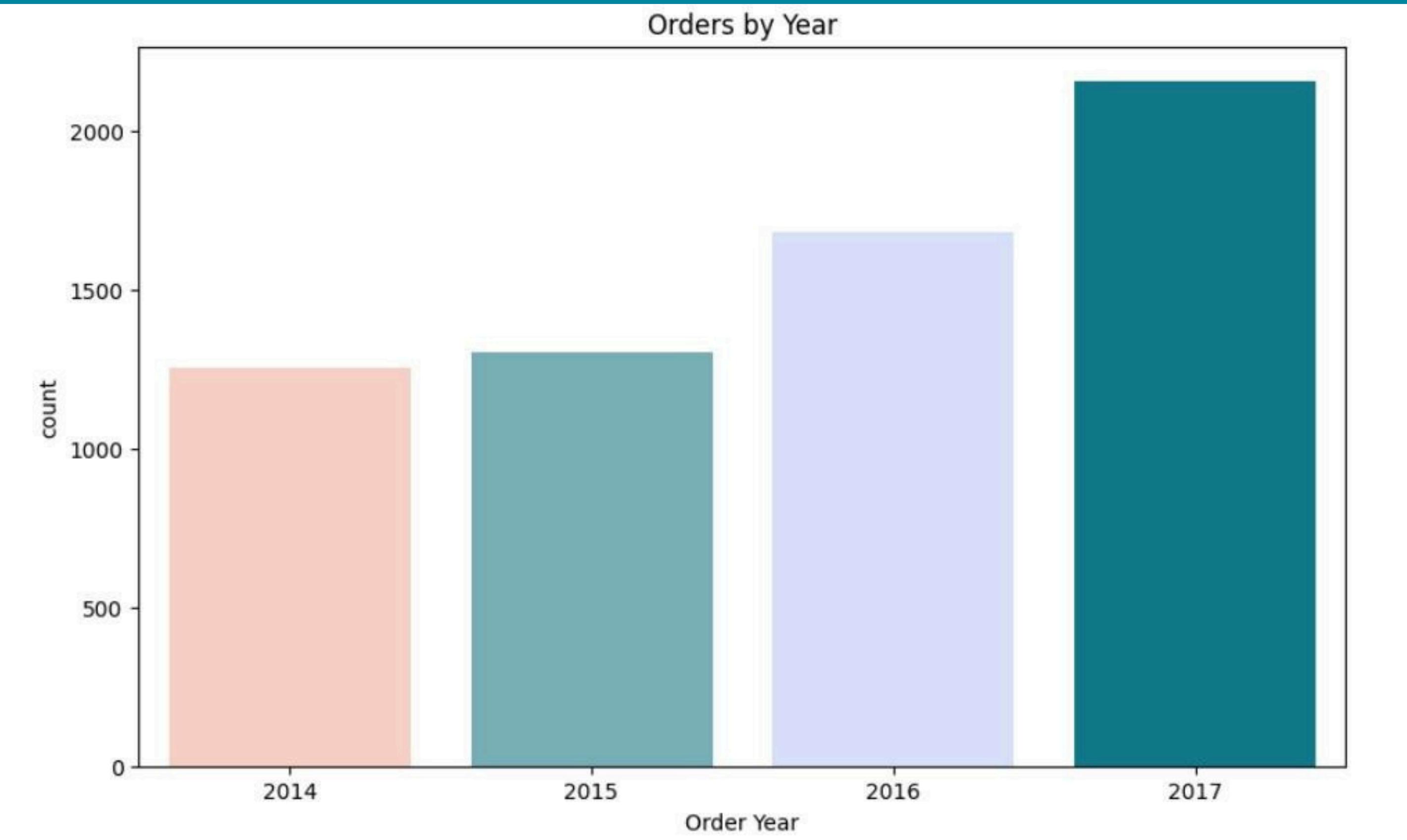
Profit Distribution by Product Sub-Category



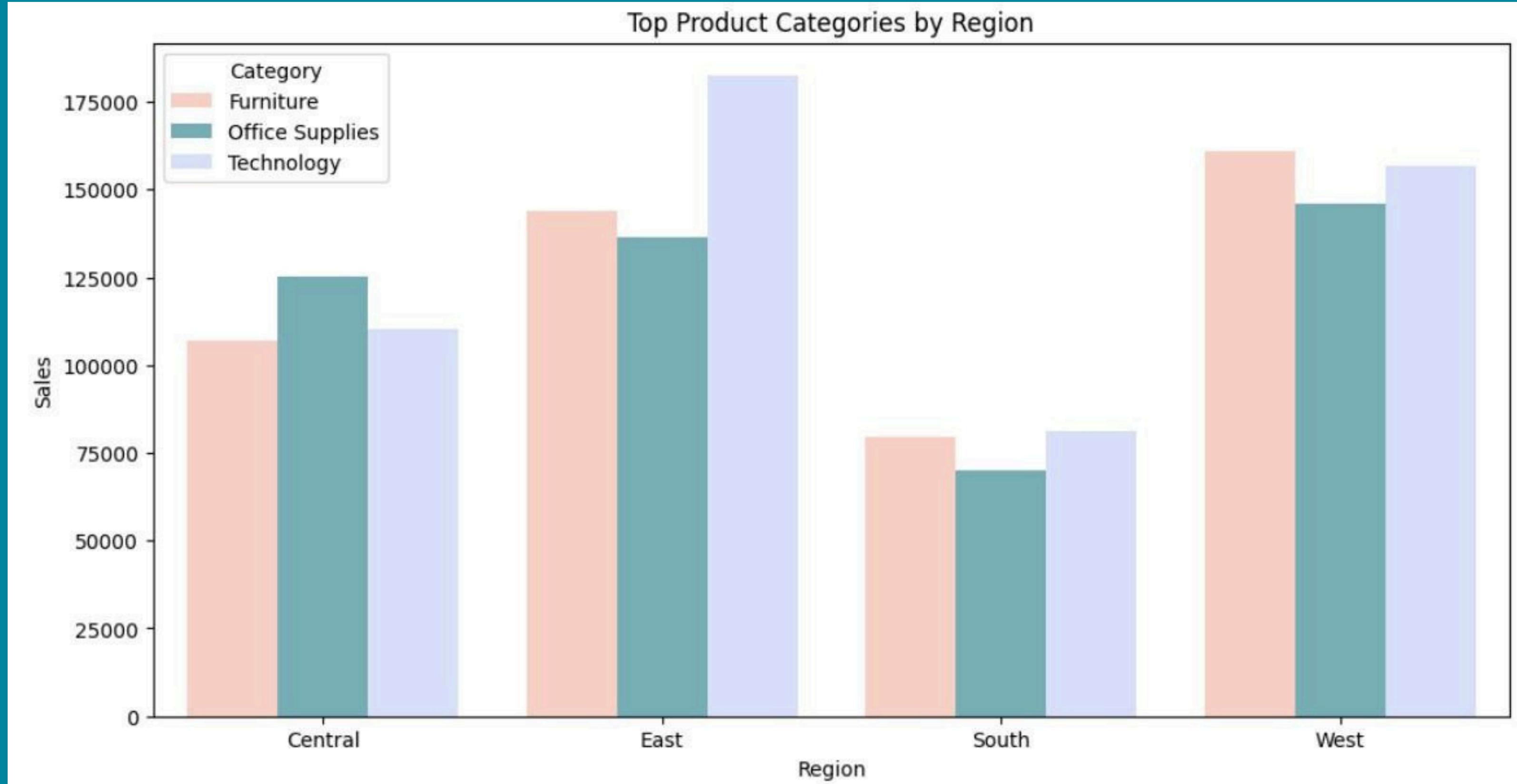
Product Category Popularity in each Region



Orders by Year

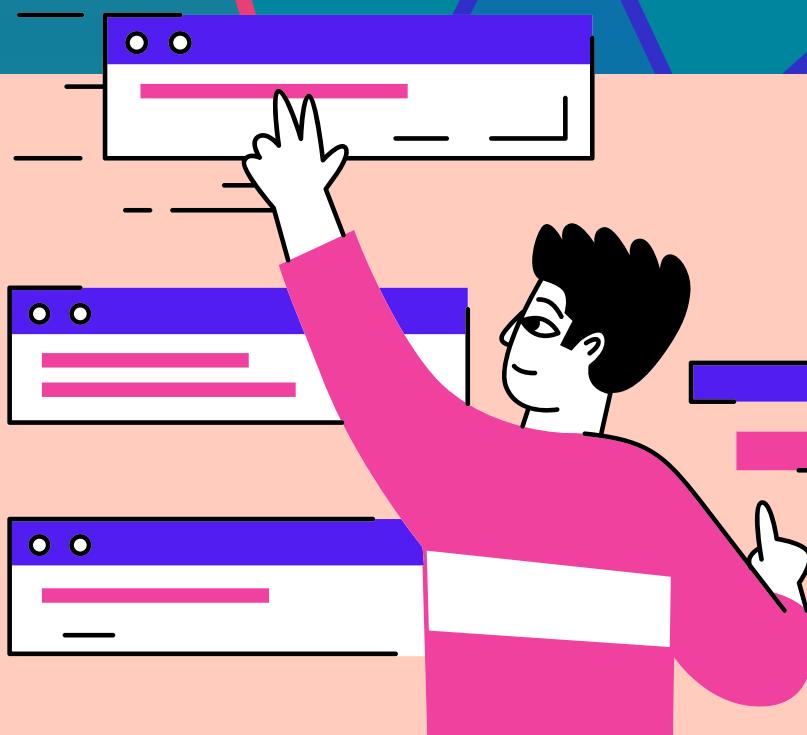


Top Product Categories by Region





**Finally,
Tableau**



Tableau

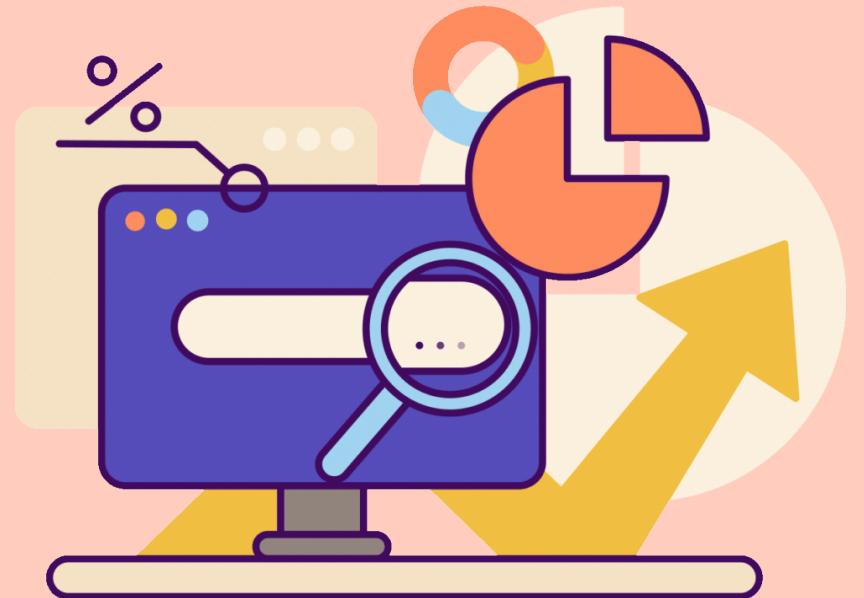
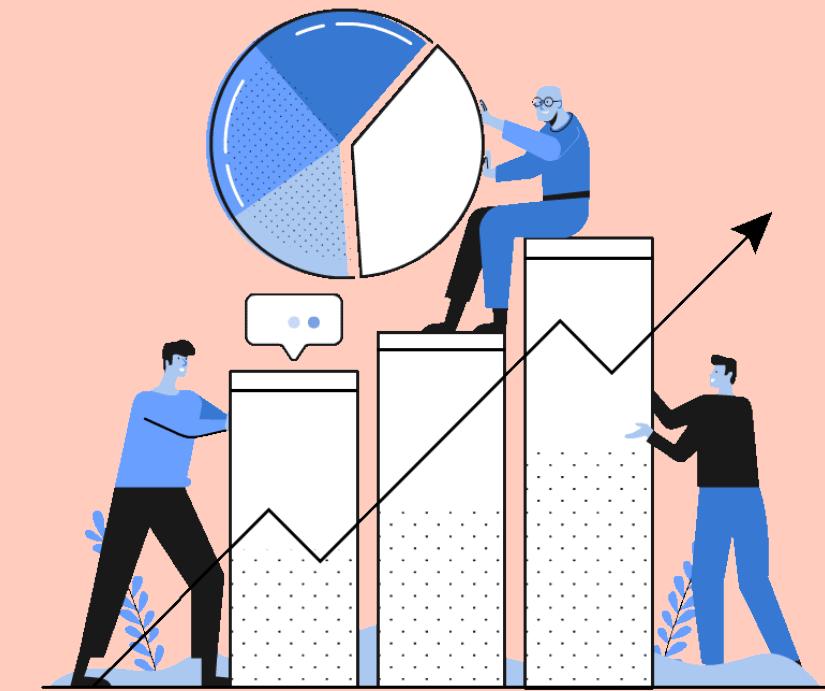
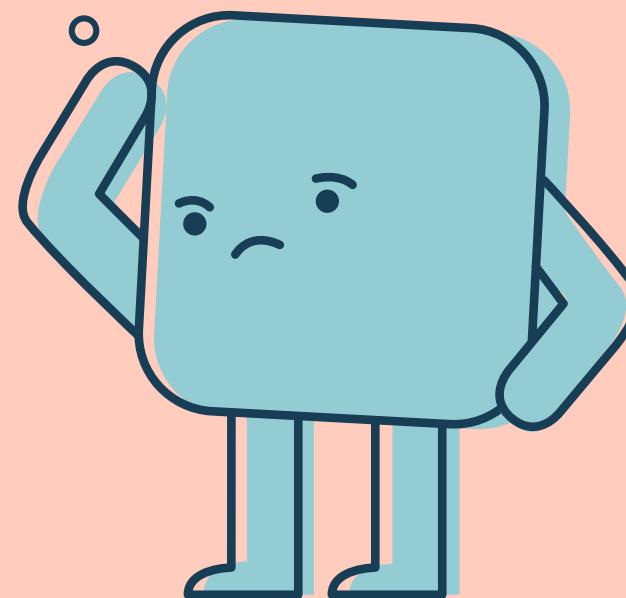
+tableau+public

INSIGHTS

DASHBOARD

**VISUALIZATION
TRENDS**

ANALYSIS



Step 1

Requirements

Choose the right charts

Decide on colours

Step 2

Connect to data

Build data model

Check data types

Step 3

Build charts

Create calc fields

Check format

• Requirements

Present the data for each KPI on a monthly basis for both the current year and the previous year, identify months with highest and lowest sales, profits and quantity and make them easy to recognize.



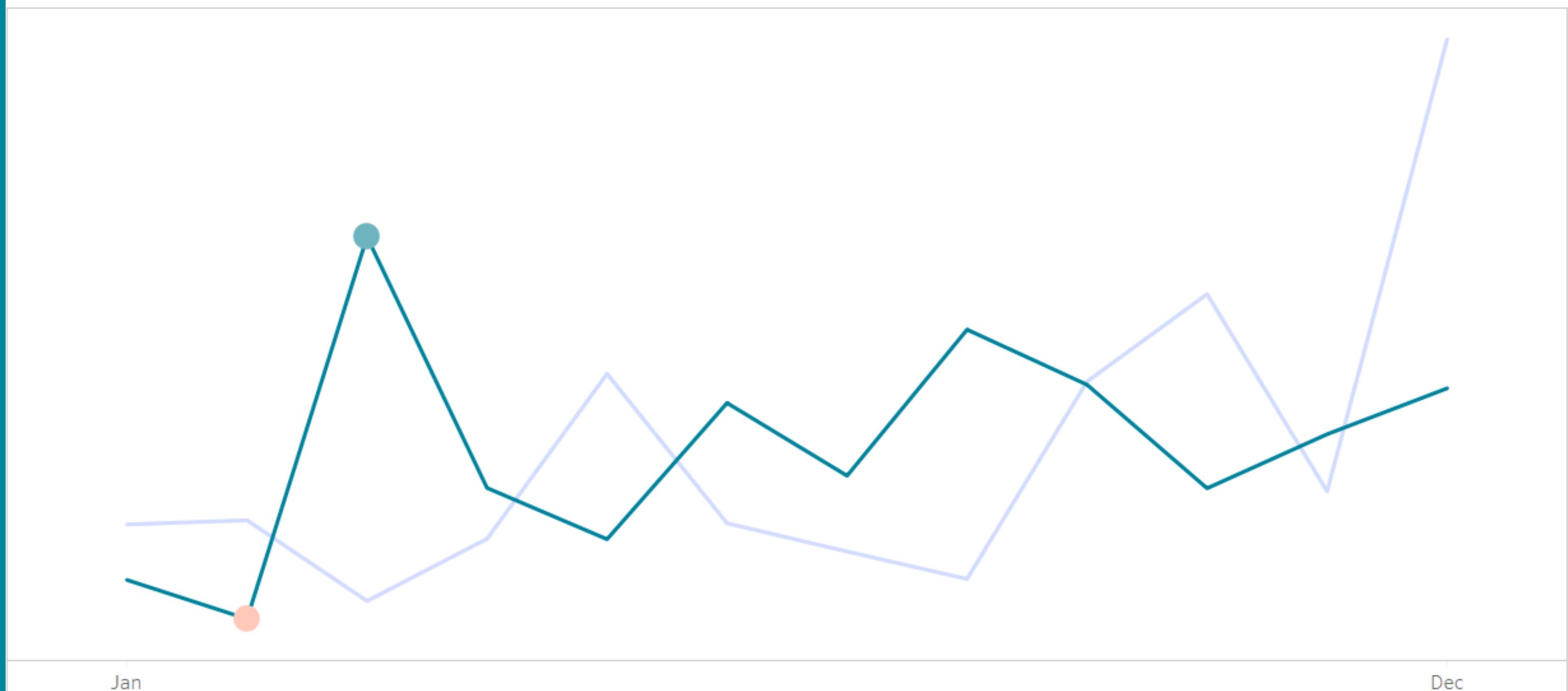
parameter



Current and last year



Max / Min for current year

TOTAL PROFITS**CURRENT 6.74M****LAST 6.56M****DIFF ▲ 2.64%**

select year

2017

Measure Names

CY profits

LY profits

AGG(min / max profit)

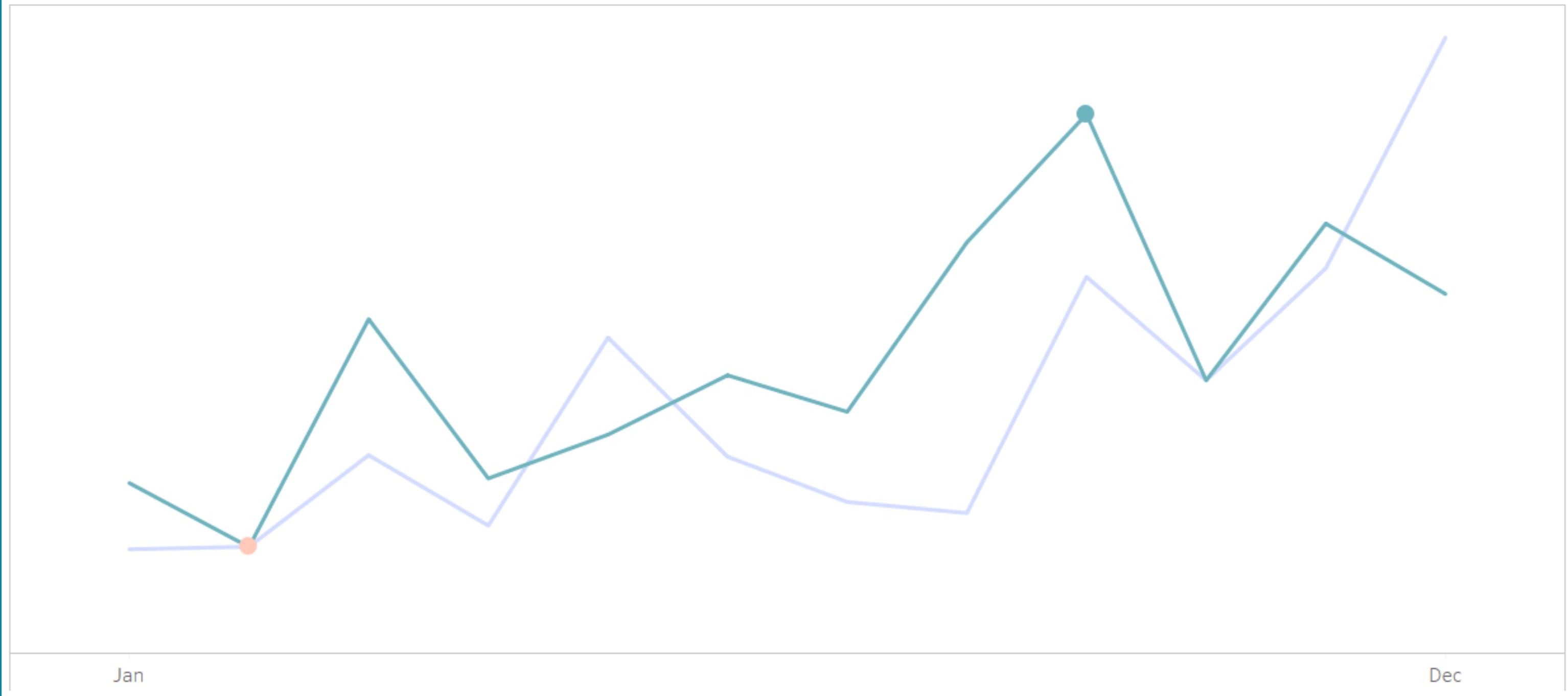
-1,266,707 1,266,707

Insights

- There is a slight increase in total profits Compared to last year
- The highest profit was in March and the lowest in February. After that, there was a fluctuation in profits until they rose again slightly in December.
- In March, profits were the highest, unlike last year, when profits were the lowest in March.

Recommendations

- Focus on improving stability in the early months
- Capitalize on end-of-year growth
- Analyze the factors causing large fluctuations

TOTAL SALES**CURRENT 50.89M****LAST 43.04M****DIFF ▲ 18.24%**

Measure Names

CY sales

LY Sales

select year

2017

AGG(min/max sales)

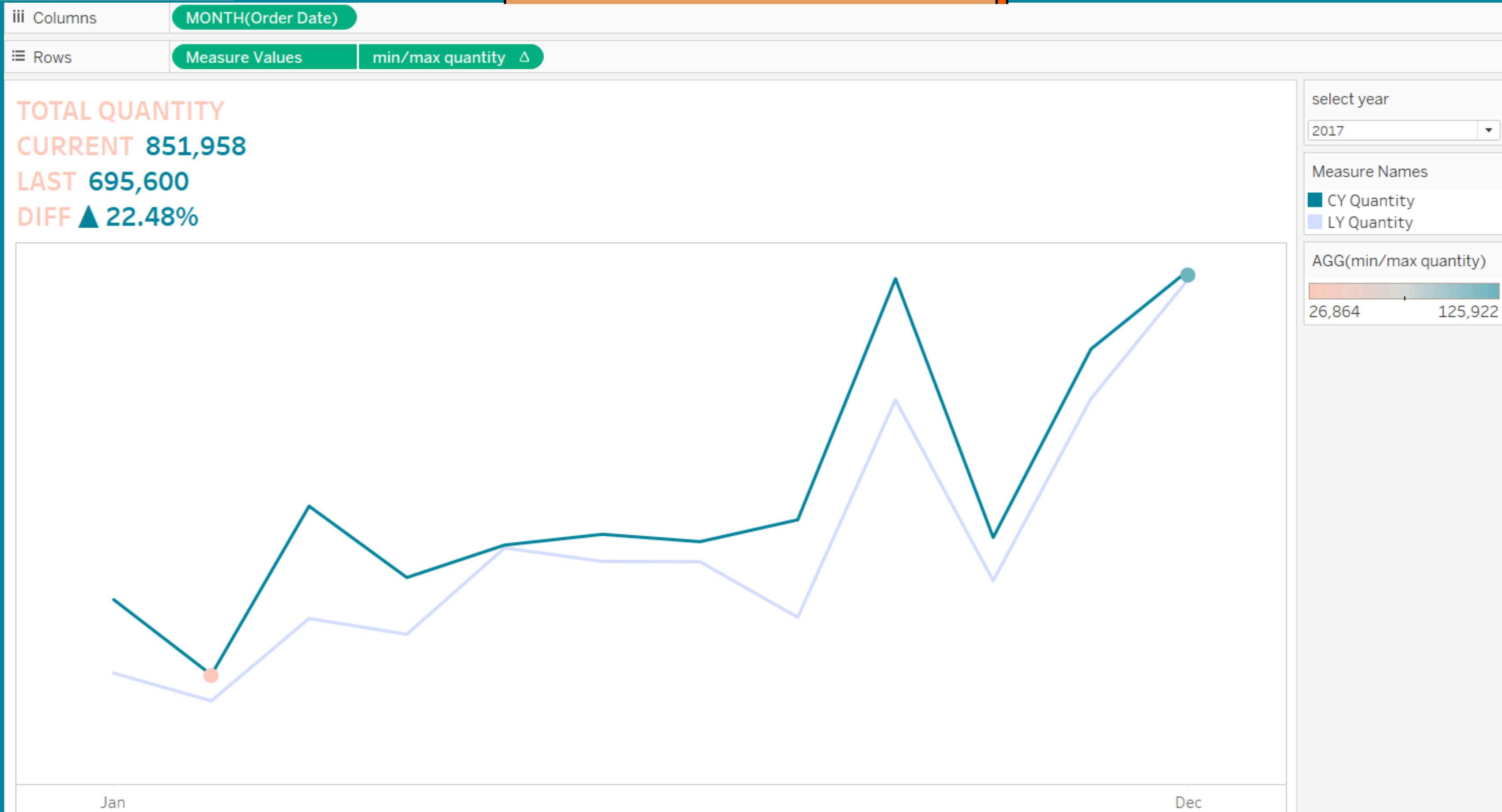
1,529,434 7,759,267

Insights

- There is a significant increase in total sales Compared to last year
- Highest sales in September and lowest in February
- Relative stability in other months: In the other months, despite some minor fluctuations, sales remained relatively stable without sharp drops, reflecting overall stability throughout the year.

Recommendations

- The sales strategy can be improved in the last and first months.
- Capitalize on end-of-year growth
- Improve performance in weaker periods and Analyze the factors causing large fluctuations



Insights

- There is a slight increase in quantities compared to last year
- The highest quantity was in December and the lowest in February
- There was stability in the middle of the year and the quantity increased at the end of the year by a large percentage

Recommendations

- Focus on maximizing production specially in the first and middle of the year
- Capitalize on end-of-year growth
- Investigate June's High Demand:

• Requirements

- Comparison between sales and profits of products monthly
- Comparison between sales and profits of sub category monthly
- Monthly trend, prediction by sales and quantity



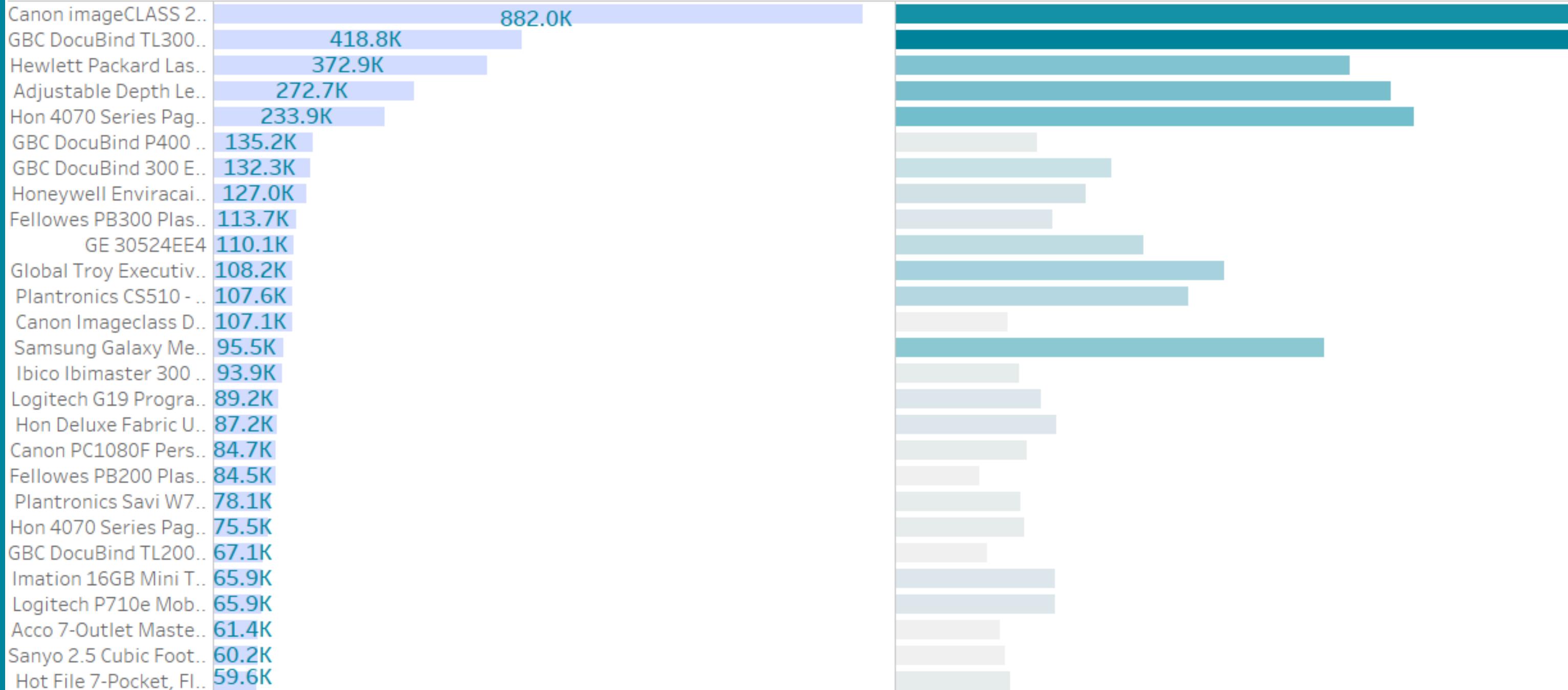
• **Top sub category parameter**



• **Filter , forecast line**

• **Select year parameter**

PRODUCTS COMPARISON , SORT BY PROFITS



Insights

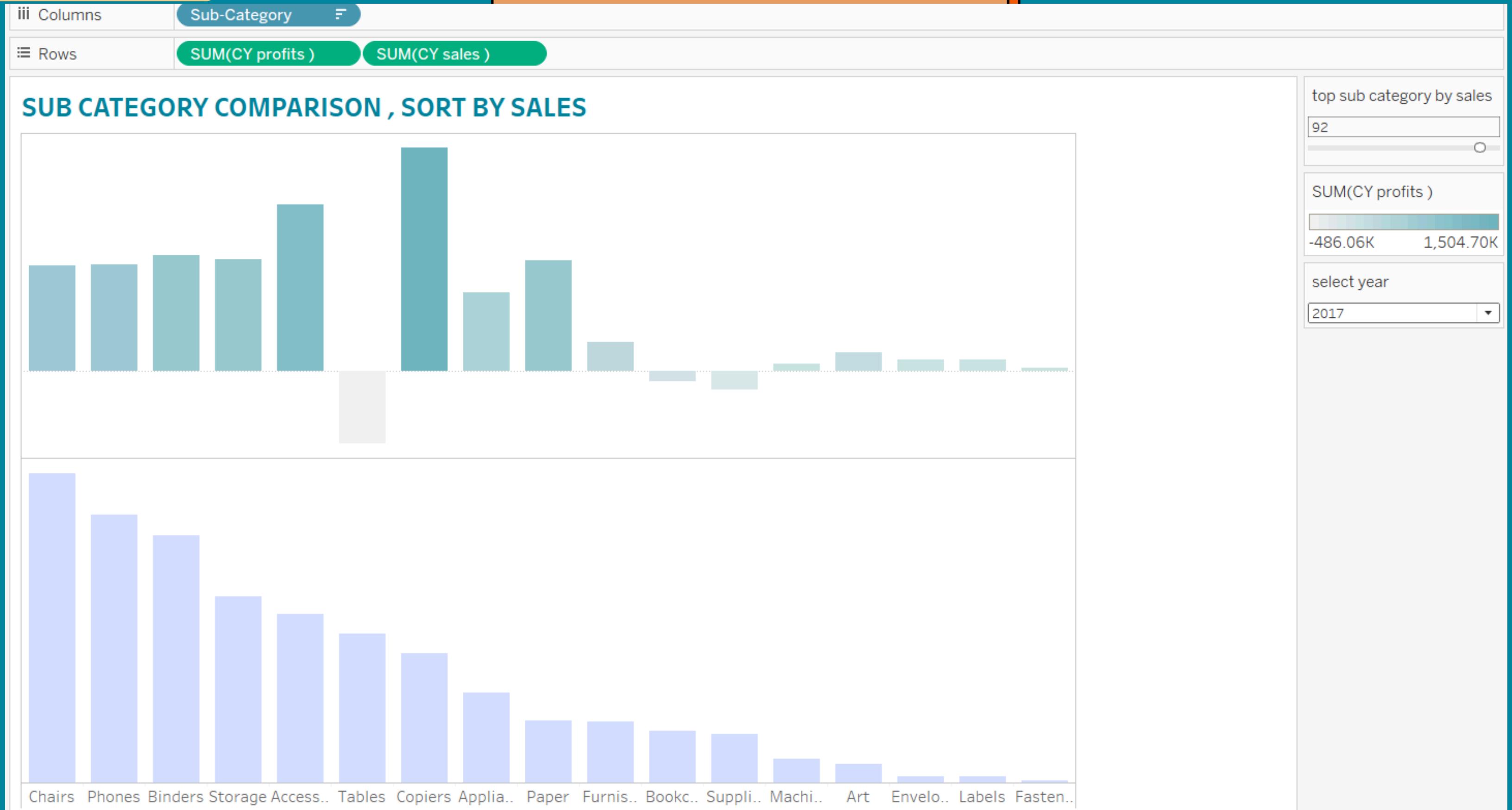
- High profit products ranked from high to low
- Products that are dark in color have a high percentage of sales, while products that are light in color have a low percentage of sales
- Top Profitable Products: Canon image CLASS 2200

Recommendations

- Focus on High-Profit Products: Invest more in marketing and promoting the top-profit products
- Reevaluate Low-Profit Products: For products with lower profits, it may be necessary to reassess pricing, distribution strategies, or even discontinue them if they do not add value.
- Diversify Product: Since profits are heavily concentrated in a few products, consider diversifying the product portfolio and improving the performance of mid-tier products to reduce risk and increase overall profitability.

Tableau

Sub category



Insights

- High sales sub category ranked from high to low
- Sub category that are dark in color have a high percentage of profit , while products that are light in color have a low percentage of profit
- Top sales of Sub category: chairs

Recommendations

- **Enhance Best-Selling Categories:** Invest in promoting categories like Tables and Copiers through stronger marketing campaigns to boost sales and profits.
- **Reduce Losses:** Analyze the reasons for profit losses in categories like Binders and Storage Access, and work on improving efficiency or reducing costs.

MONTHLY TREND , PERDICTION BY SALES AND QYANTITY



Forecast indicator
Actual
Estimate

sales

Quantity

Insights

- During the years since 2014, fluctuations in production and profits
- According to the forecast line in Tableau, the first month of 2018 will have large profits and production,
- and after that, it will decrease in varying proportions and increase again at the end of the year.

Recommendations

- Follows up the reasons for the decline in production and profits
- Through the forecast line of the tableau, be careful of the middle months of the year because a decline is expected in them.

• Requirements

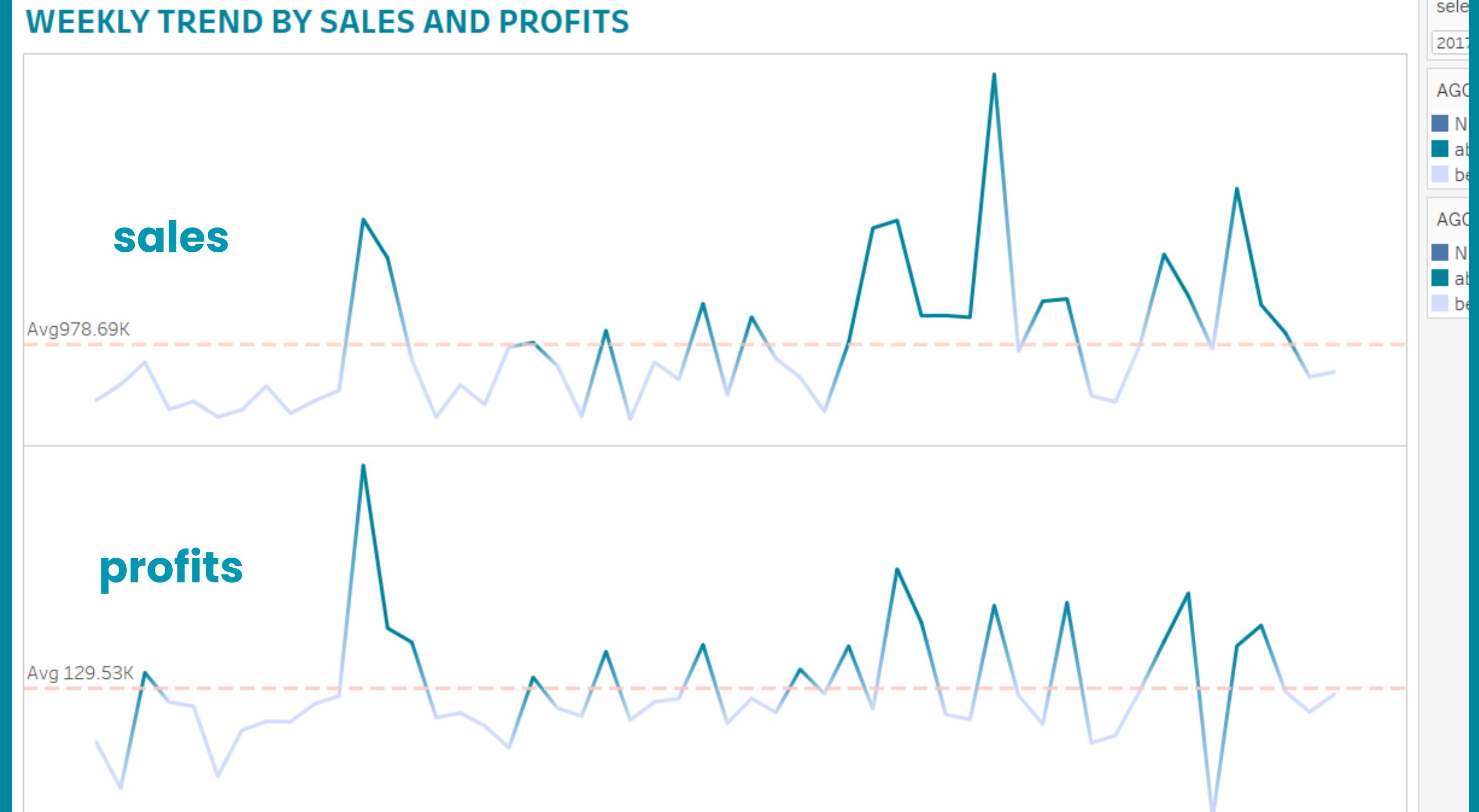
- Weekly trend by sales and profits
- Top products by state
- Top customers by profit
- Sales by category



Maps

Above or below avg profit

Select year parameter



Insights

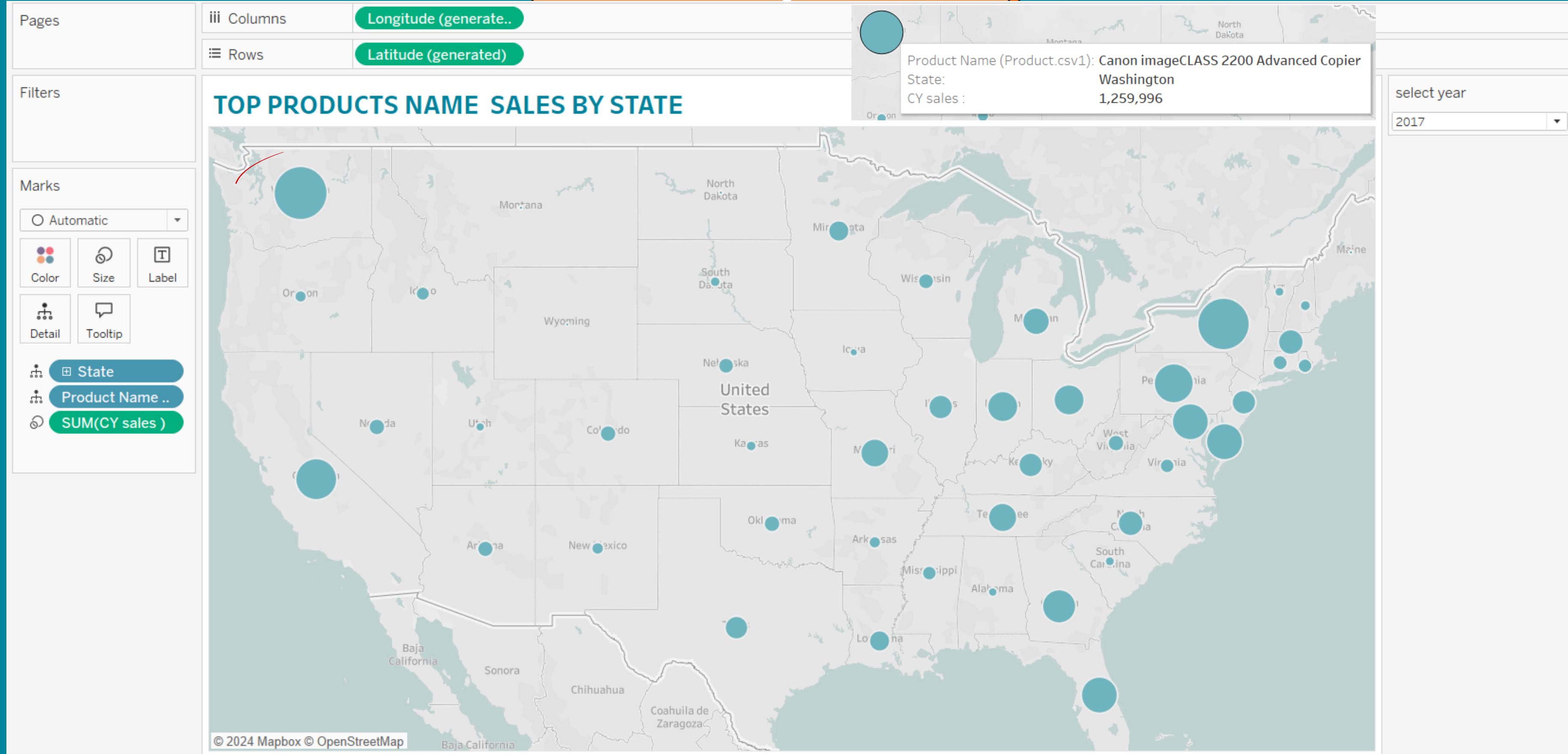
- Those above the average line are sales that are above the average and are considered to have made a good sales and profit
- Below the average line are sales and profit that are below the average and are considered to have made a small profit
- There are fluctuations in profits and sales during the weeks

Recommendations

- Follows up the reasons for the decline in sales and profits
- Try out a variety of sales and marketing strategies.

Tableau

Top products sales by state



Insights

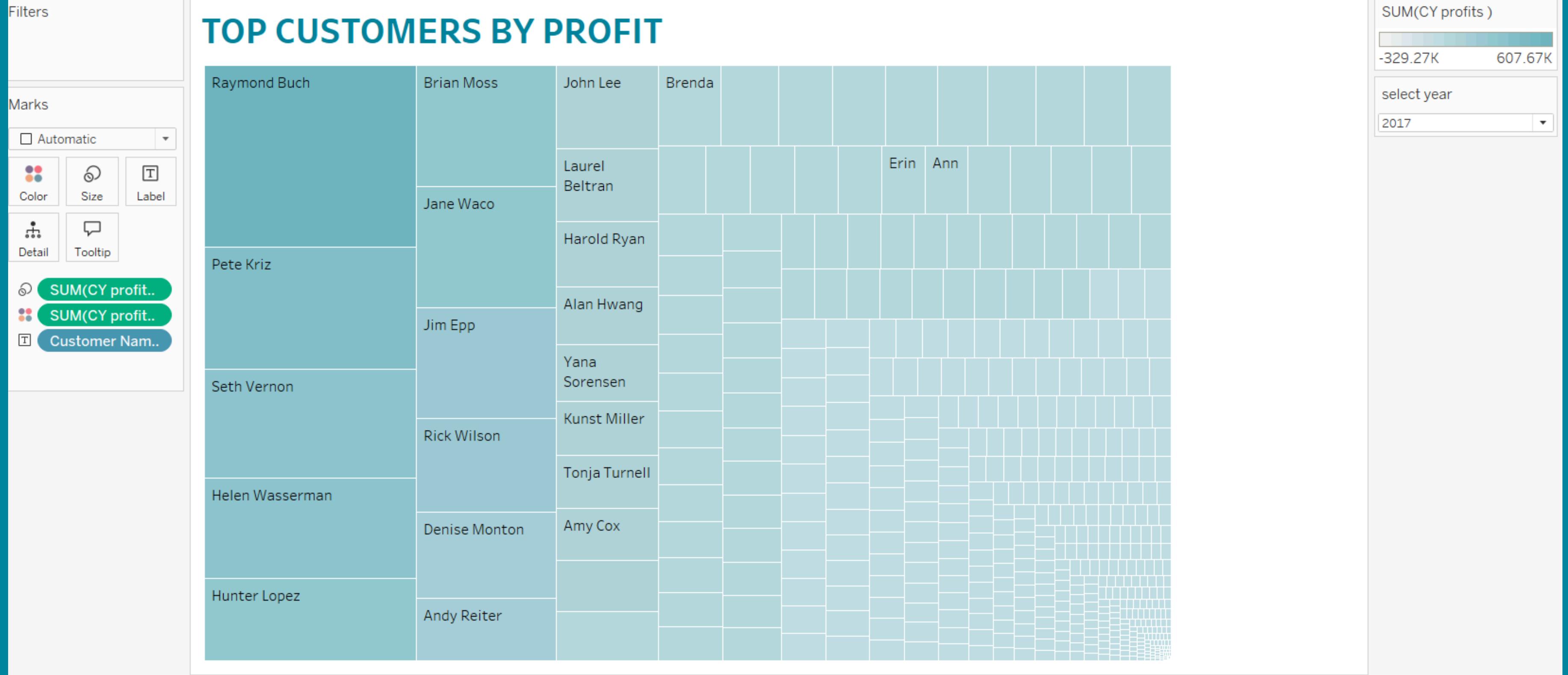
- Washington and New York top sales in canon image advanced copier and electric bending system
- state with large circles have high sales and vice versa.

Recommendations

- Increase production and change the marketing, sales and advertising strategy in areas with low sales.
- The 2 top products are considering the best seller in states Develop their profits to maintain the same level of profit.

Tableau

Top customers



Insights

- Larger squares have higher customers' profits and vice versa
- The darker the color, the more that this customer make a big profit

Recommendations

- I keep customers who make a good profit and make a discount to ensure that they will always remain my customers
- I try to make a voucher, coupon, for whose profits are small

Sales by category

Filters

Category

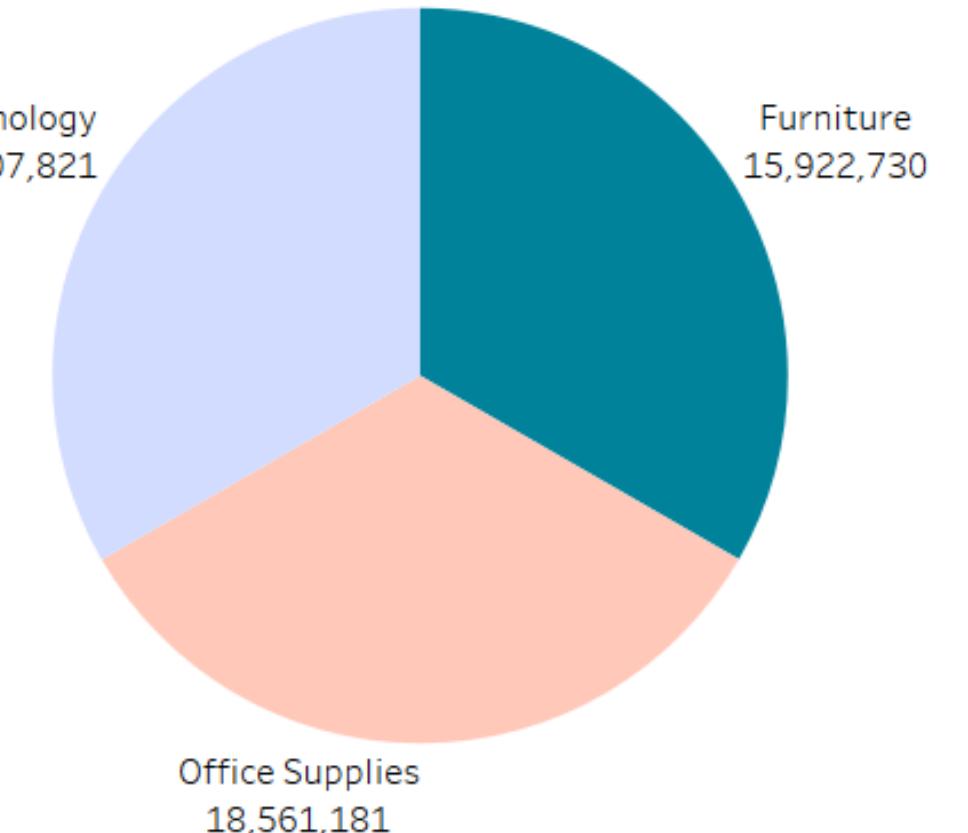
Marks

Pie

Color
Size
Label
Detail
Tooltip
Angle

Category
Category
SUM(CY sales)
SUM(CY sales)

SALES BY CATEGORY



Category
Furniture
Office Supplies
Technology

select year

2017

Insights

Top sales:

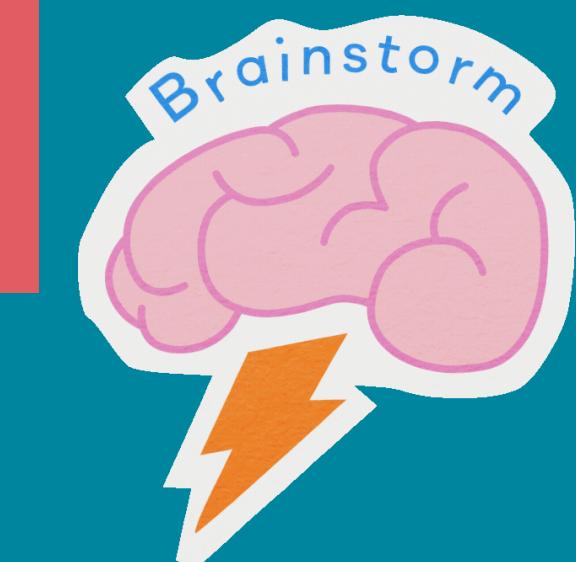
1. Office supplies then technology and furniture at the end
2. Technology
3. Furniture at the end

Recommendations

- Develop a furniture sales strategy, marketing method and advertising
- And keep the strategy of office supplies and technology

• Requirements

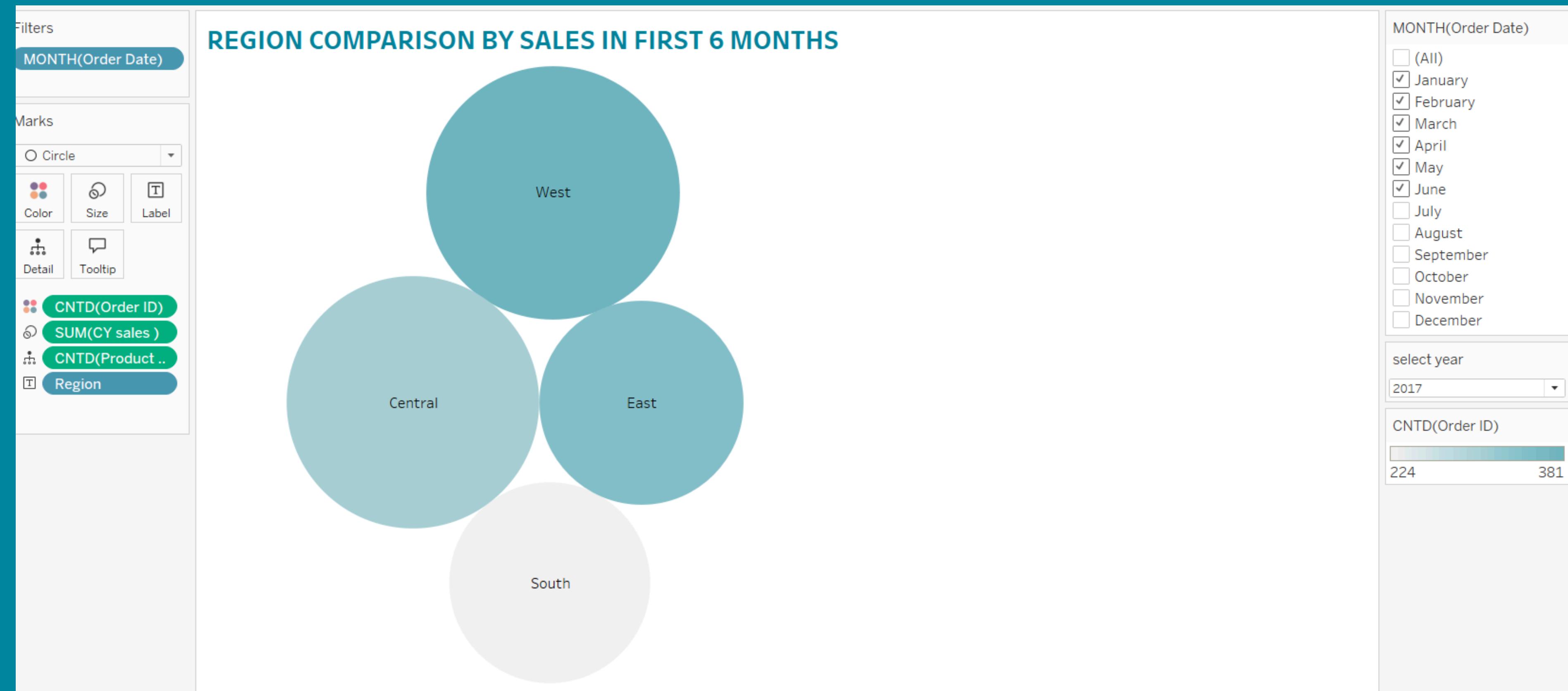
- Region comparison by sales
in first 6 month , countd
order id and product name
- COUNTD of orders by sub
category in cities
- Profits based on discount
- Sales by ship mode



Maps

Month filters

Select year parameter

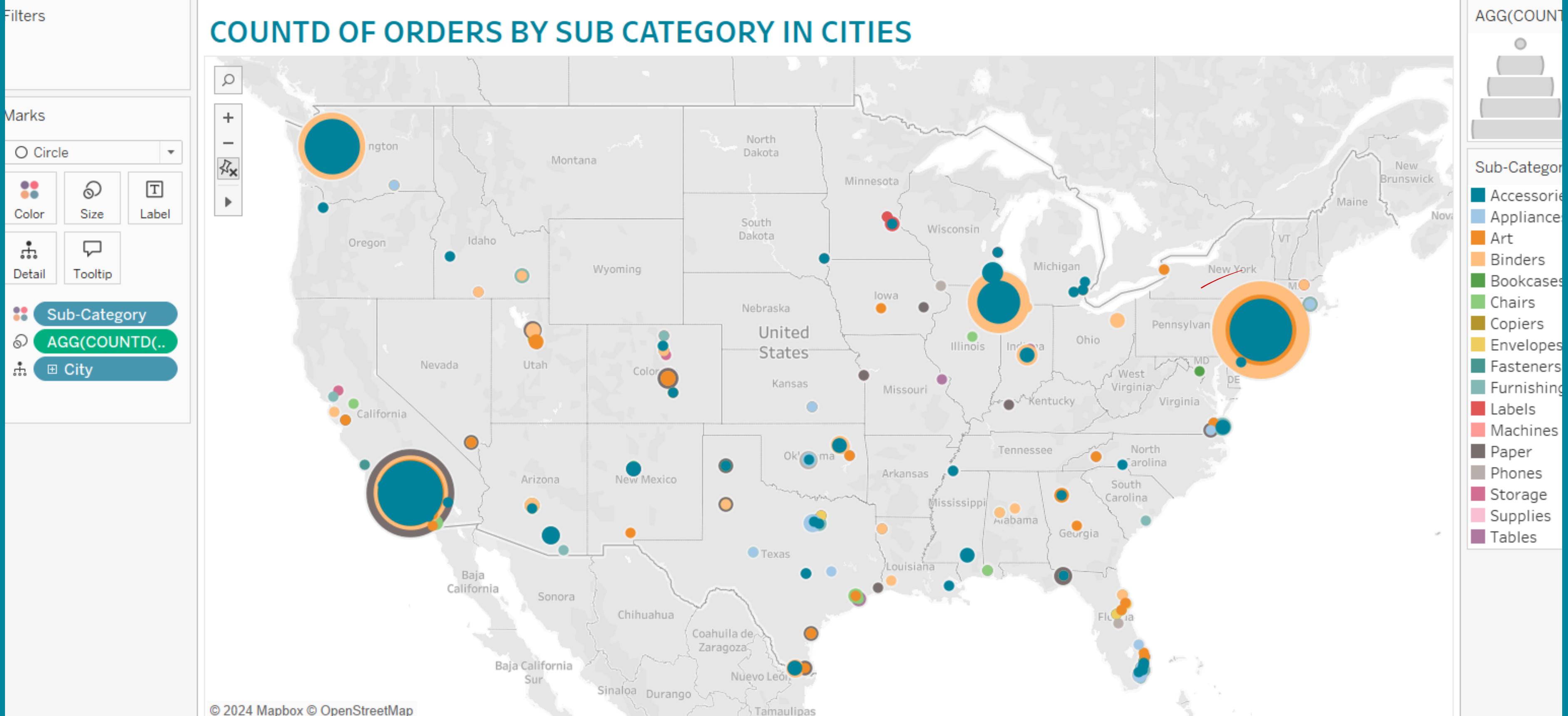


Insights

- The highest sales were in the West and central
- The lowest sales were in the east and central
- The West region has many orders, unlike the South

Recommendations

- Develop a south sales strategy, marketing method and advertising
- And keep the strategy of office west and central
- to ensure their top sales



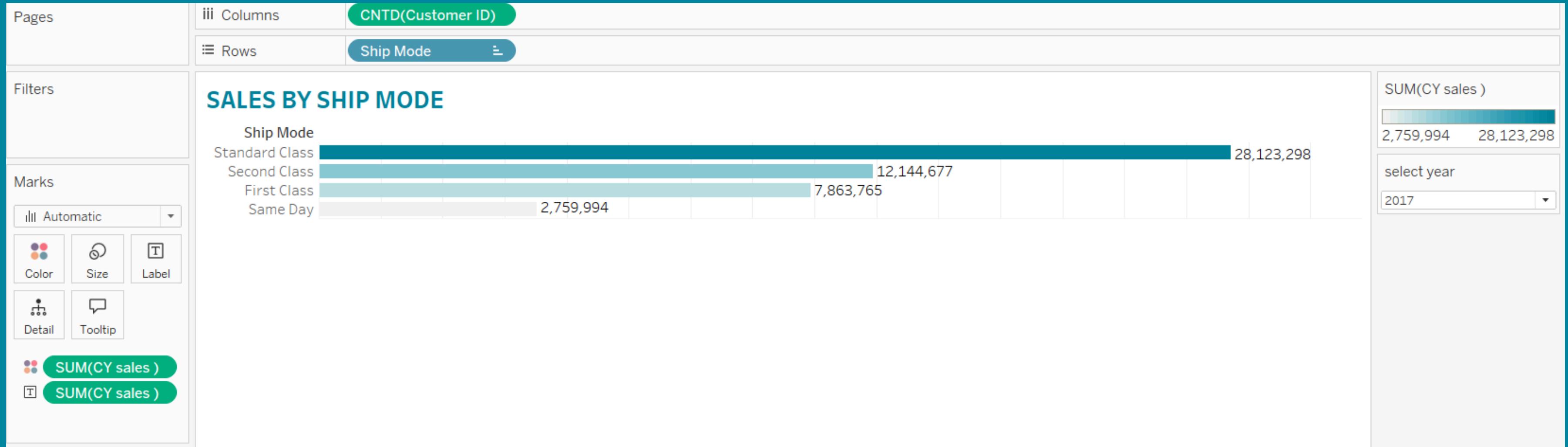
Insights

- The larger the circle, the more count of orders based on sub category
- New York has the largest number of orders : blinder

Recommendations

- Focus on areas with a small circles and on sales methods and strategies there
- And keep the strategy of New York l to ensure their top orders

Sales by ship mode



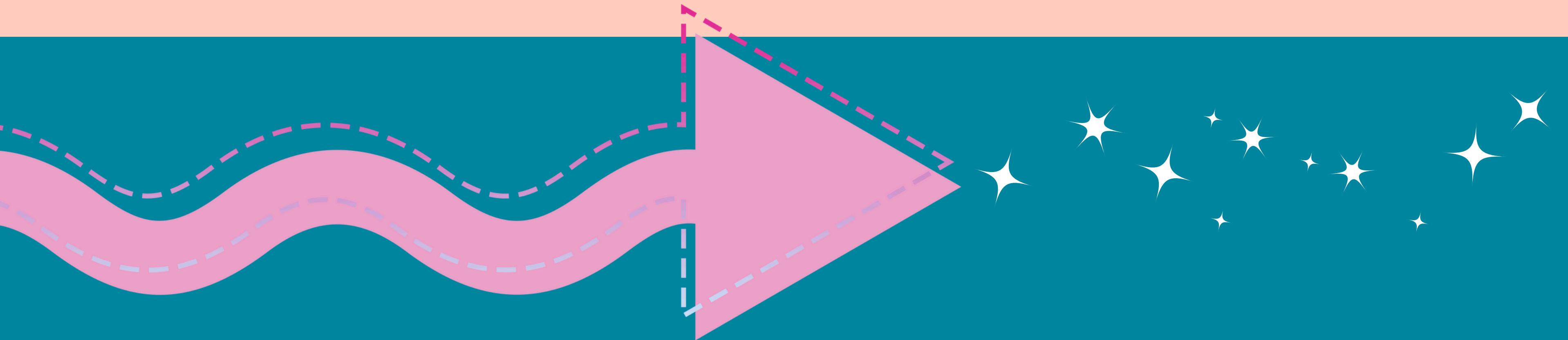
Insights

- Standard class is the highest sales then second class
- first class is the lowest sales then same day
- Also the Standard class is the highest count of customers then second class
- first class is the lowest sales then same day

Recommendations

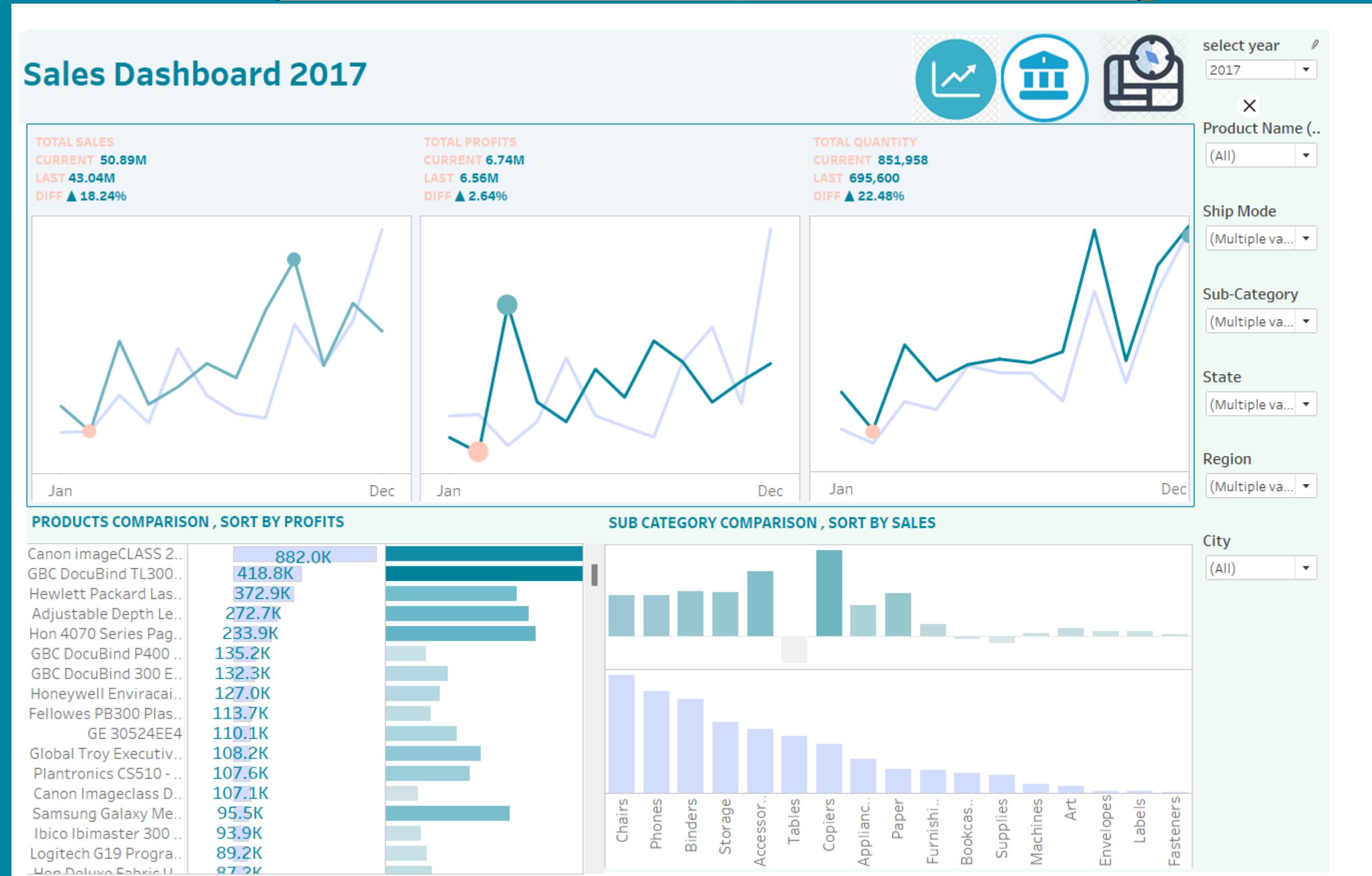
- Focus on count of customers in first class and same day, try to find new strategies for them
- And keep the strategy of standard class l and second class

Tableau Dashboards



Tableau

Sales Dashboard Analysis

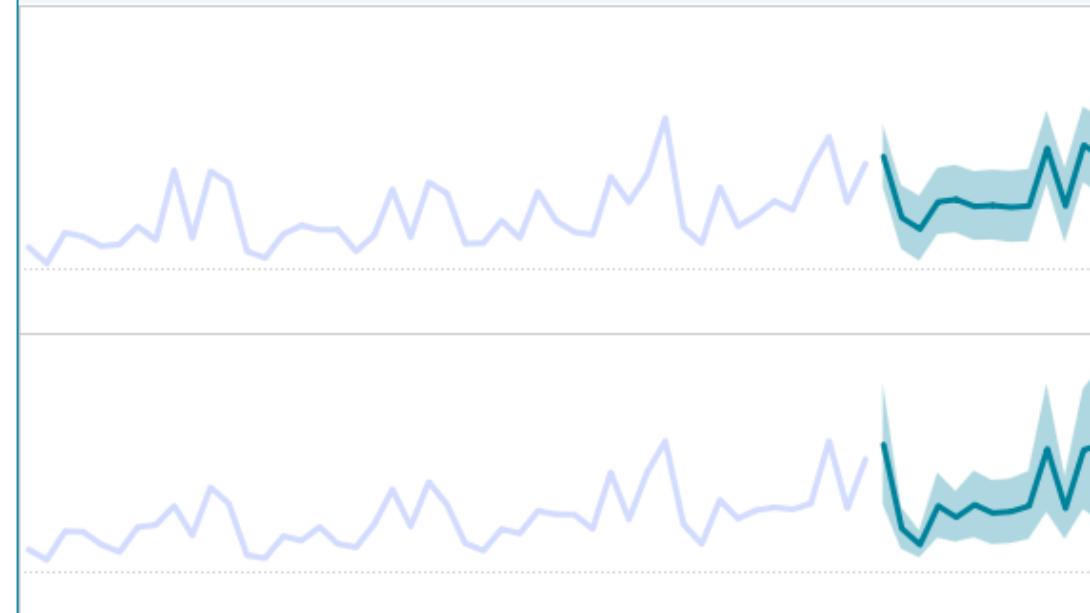


Tops & Trends

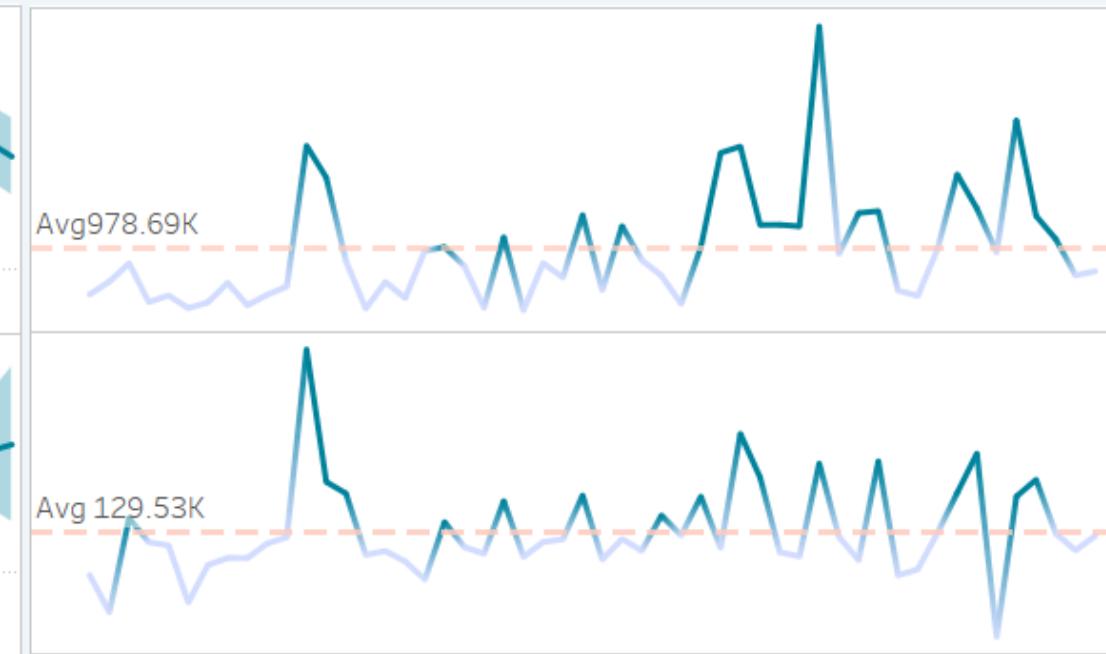
Trend Dashboard 2017



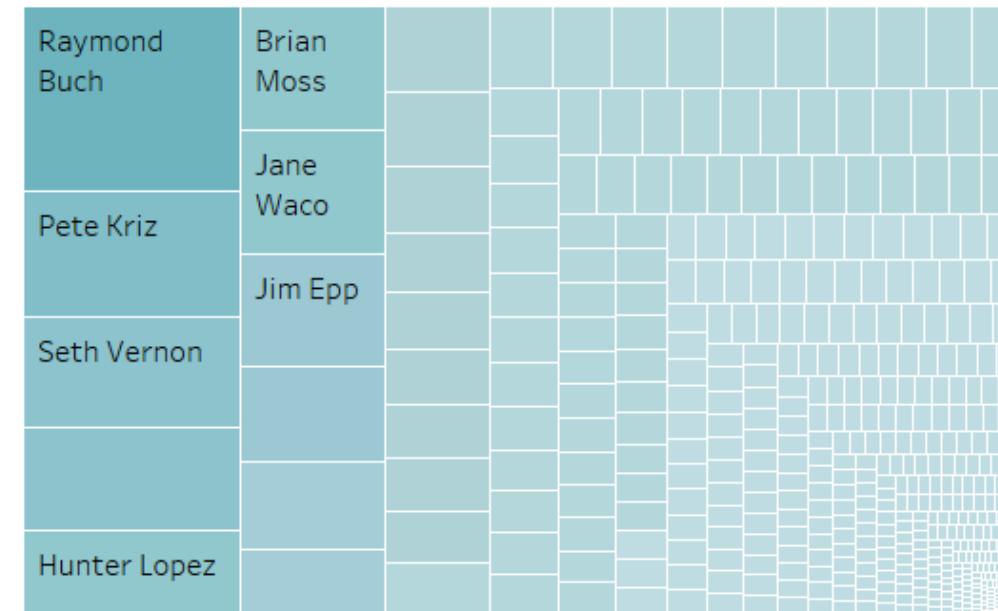
MONTHLY TREND , PREDICTION BY SALES AND QUANTITY



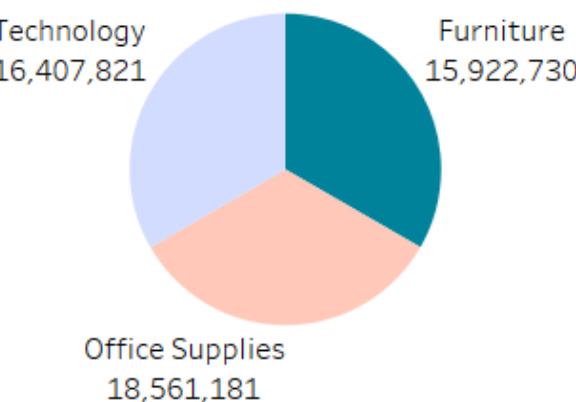
WEEKLY TREND BY SALES AND PROFITS



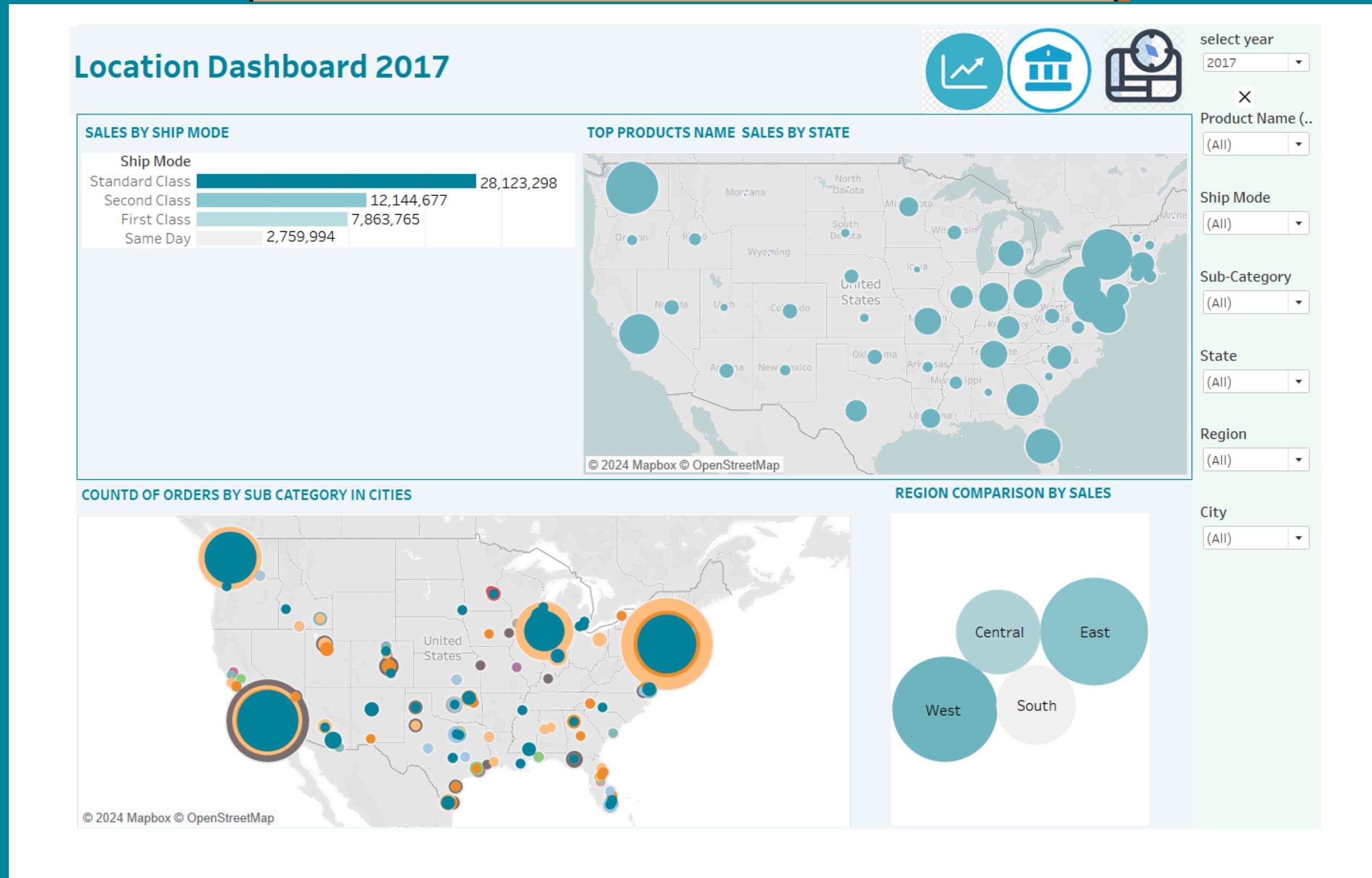
TOP CUSTOMERS BY PROFIT



SALES BY CATEGORY



Location Dashboard



Dashboard Details

- **Horizontal Bars:** Horizontal Containers used to group elements side by side.
- **Vertical Bars:** Vertical Containers used to group elements in a vertical layout.
- **Blanks:** Empty objects used to create space for better layout and spacing.
- **Filters:** Allow users to filter data on the dashboard based on specific criteria.

Conclusion

- In this project, we successfully analyzed the data to uncover key insights and trends. Our findings highlight significant patterns that can inform decision-making and strategy development. By leveraging advanced analytical techniques, we provided actionable recommendations that can enhance operational efficiency and drive growth. Future work should focus on continuous data monitoring and further refinement of our models to adapt to changing conditions.



Resources

<https://www.assaal.com/file-share/fa740f32-9b0d-404d-b155-594c31c827a9>

THANKS
TO YOU

