



Superstore EDA

Driving Data-Driven Decisions for Growth

Project Summary | Data Analysis | Profit Insights

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Dataset Overview

Objective:

Analyzed Superstore data to uncover insights about sales, profitability, customer behavior, and operations.

Dataset Summary:

- Dataset contains 9,994 orders from a Superstore.
- Covers customer, sales, shipping, and product details.
- Objective: Identify profitable segments, optimize delivery, and improve business strategy.

Data Cleaning & Feature Engineering

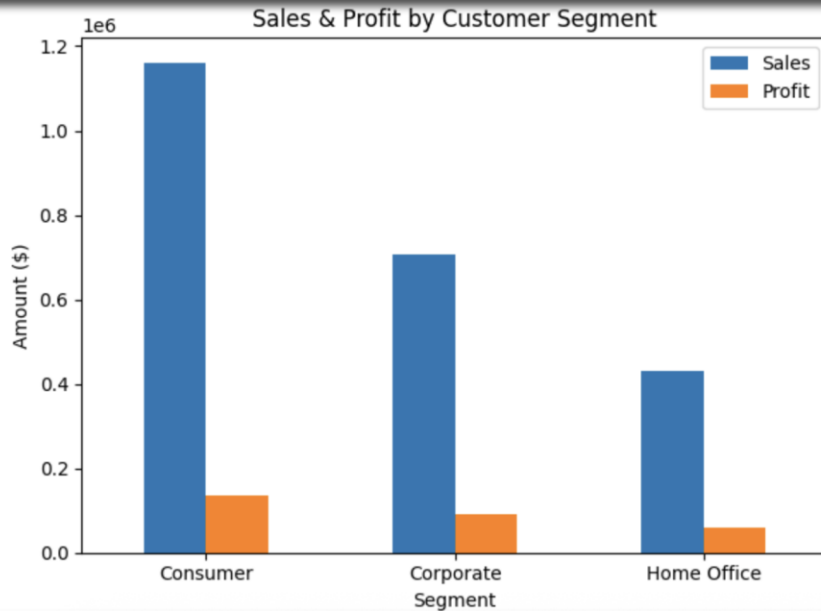
- **Converted Dates:**
 - Order Date and Ship Date converted to datetime format.
- **Null & Duplicate Check:**
 - No null values; duplicate orders removed.
- **Feature Engineering:**
 - Extracted Year, Month, Quarter for time-based analysis.
 - Calculated Delivery Time = Ship Date - Order Date.



EDA

Exploratory Data Analysis

Customer & Segment Insights

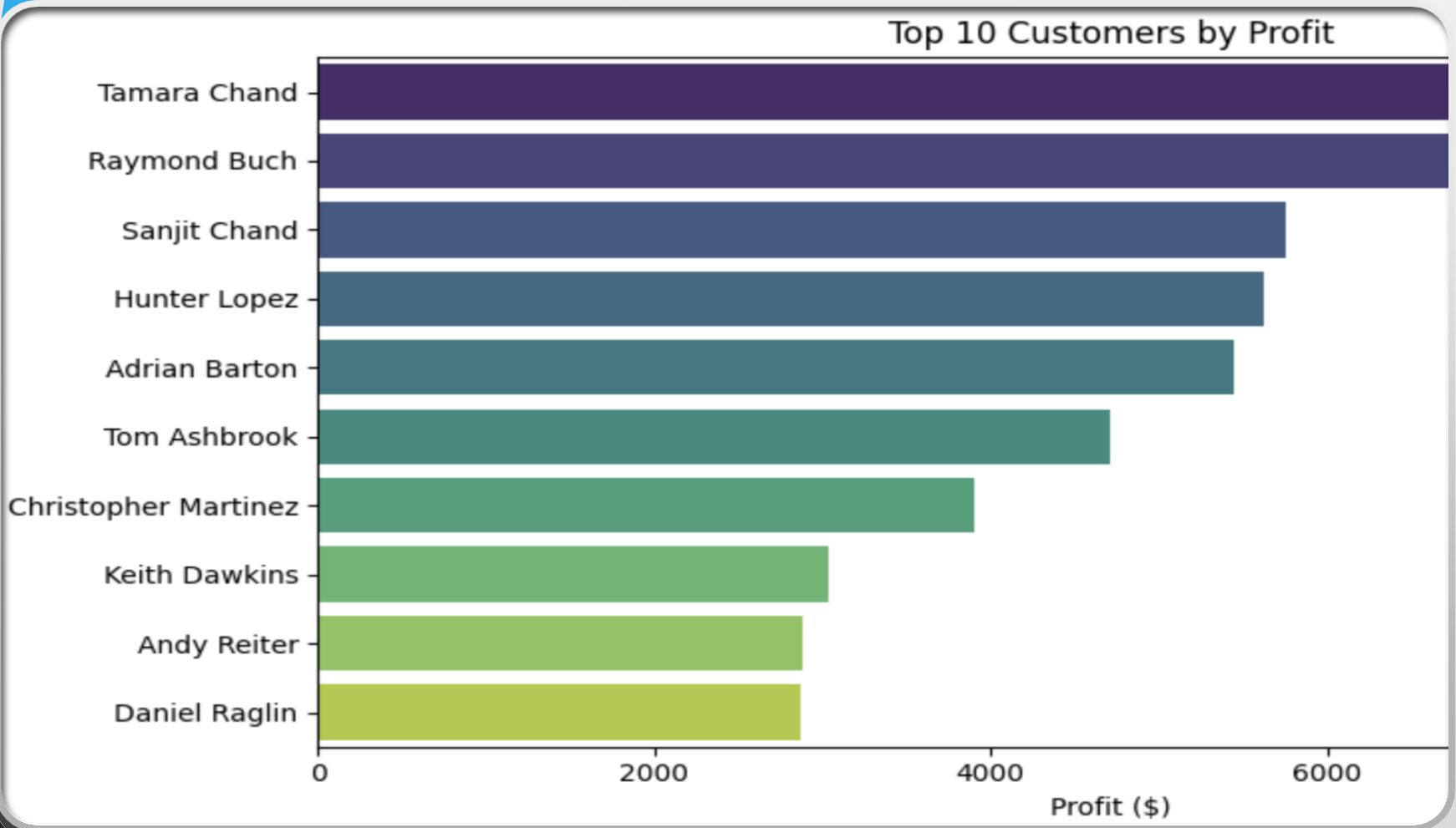


Segment Performance:

- Compare Sales & Profit across Consumer, Corporate, Home Office.
- Highlight most profitable segment with bar chart.

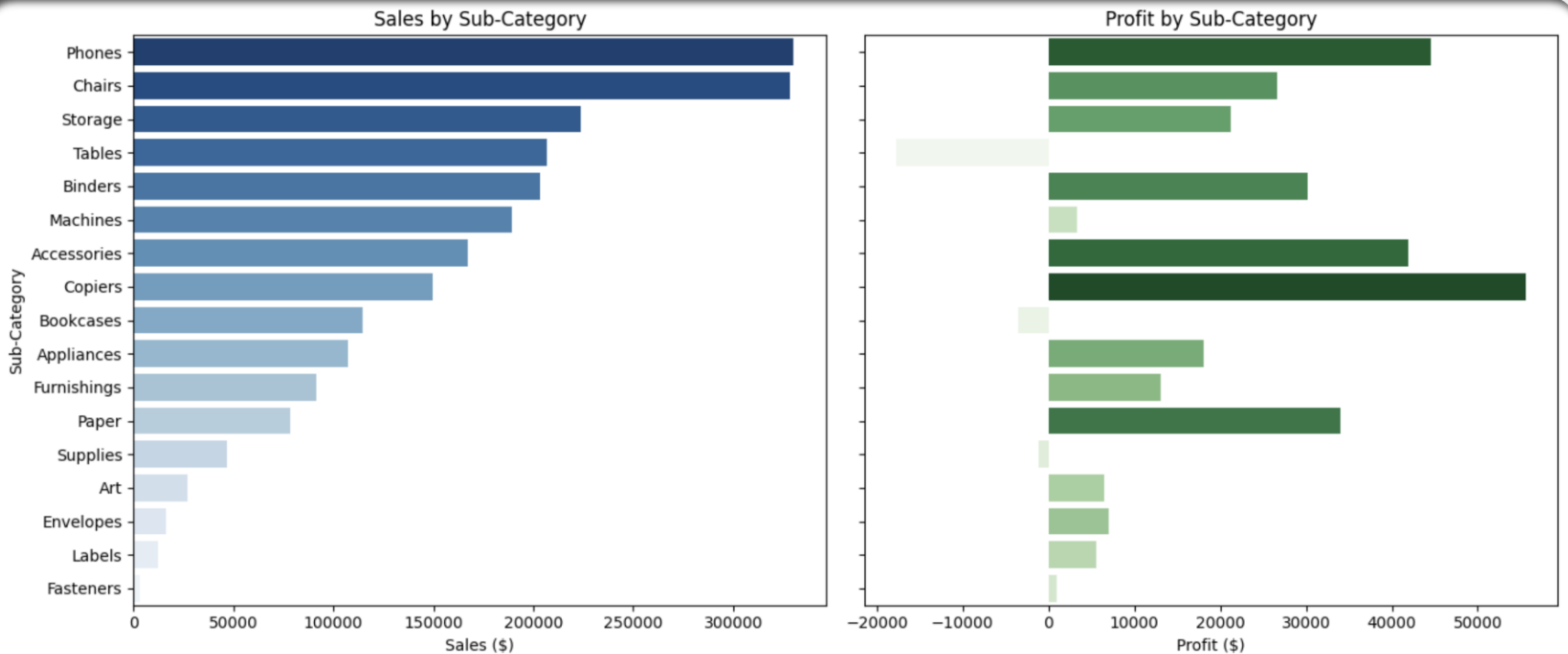
Top Customers

List of Top 10 Customers by Profit.

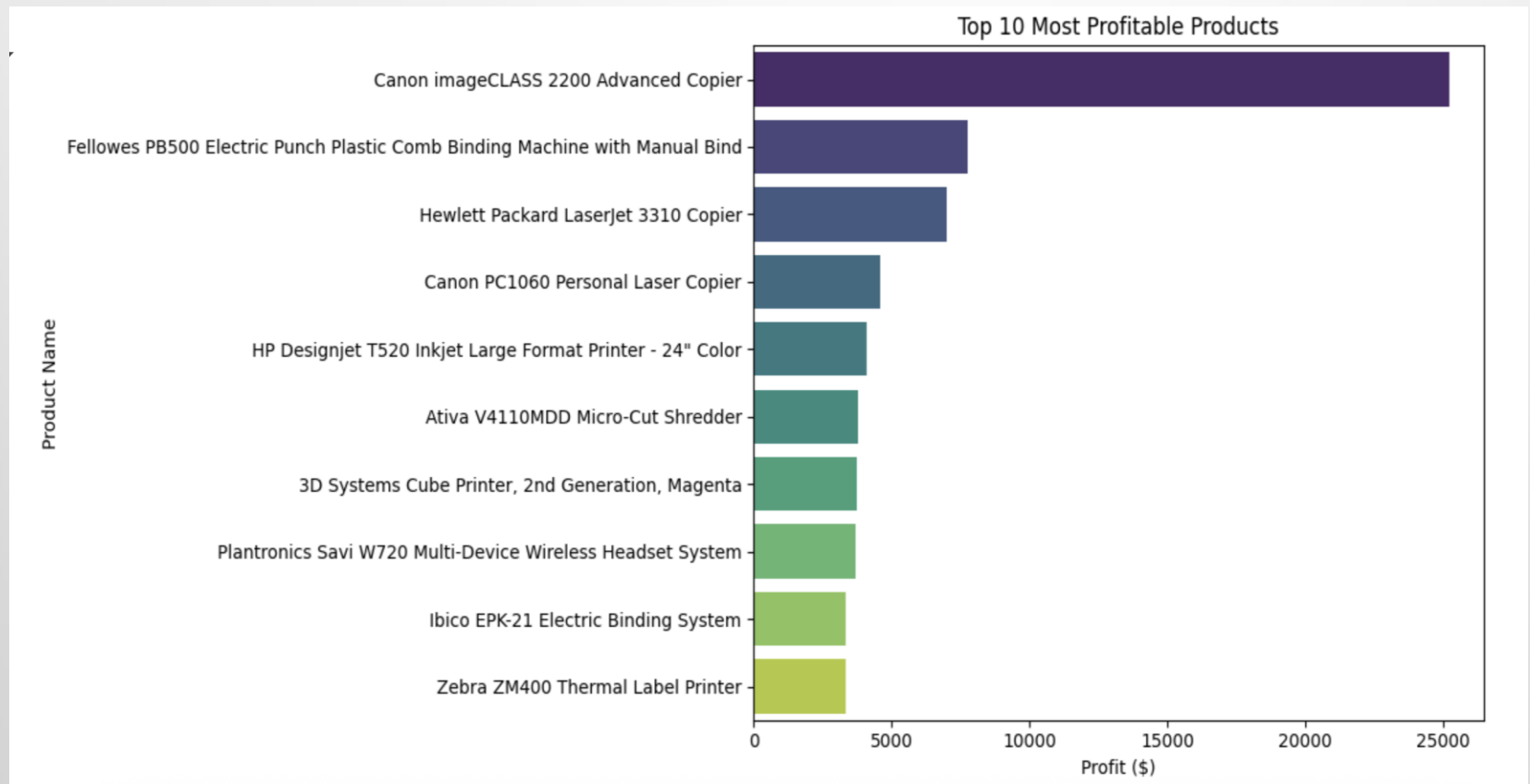


Sales & Profit by Segment and Category

- **Bar Chart:** Profit by Sub-Category (e.g., Chairs, Phones, Binders)
- **Insights:**
 - Which segment contributes most to revenue and profit?
 - Which categories need strategic focus?



Top 10 Profitable Products

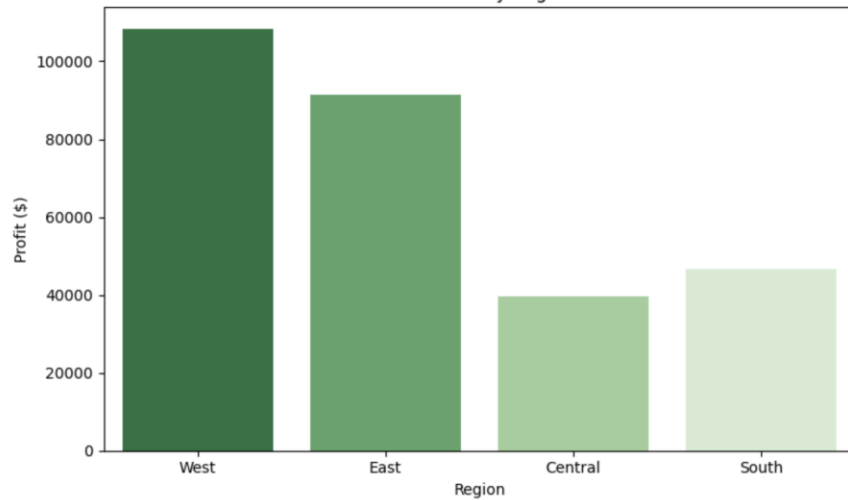


Regional & Geographic Insights

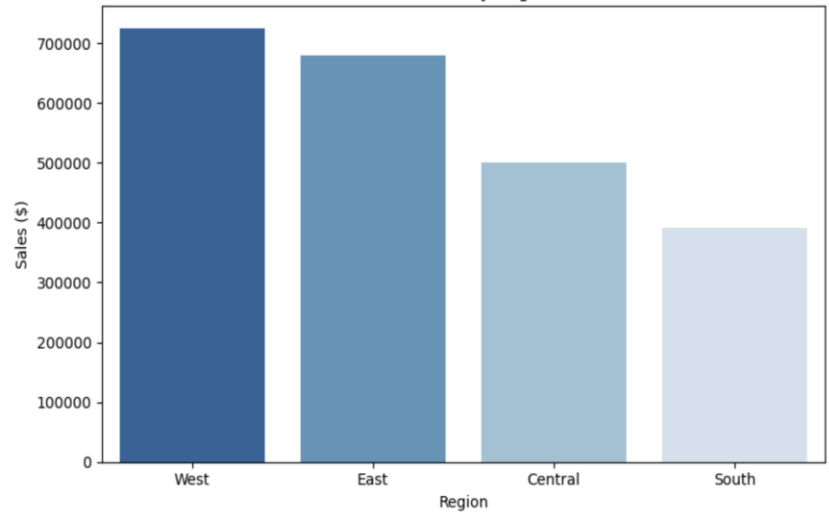
- **By Region:** Bar chart of Sales and Profit by Region (West, East, South, Central).
- **State-Level Breakdown:** heatmap showing which states bring the most profit or loss.

Region wise Sales and Profit bar graphs

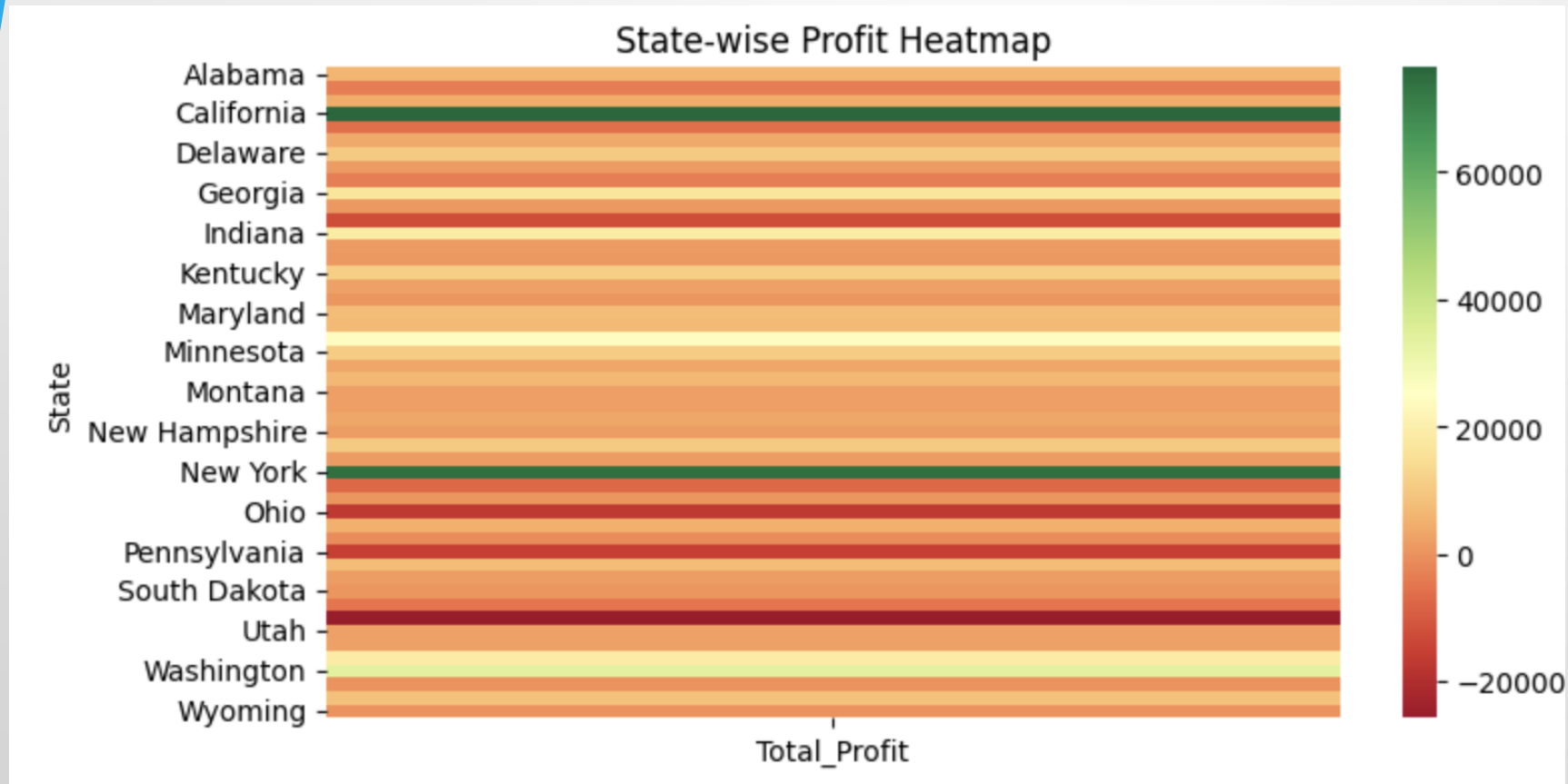
Total Profit by Region



Total Sales by Region

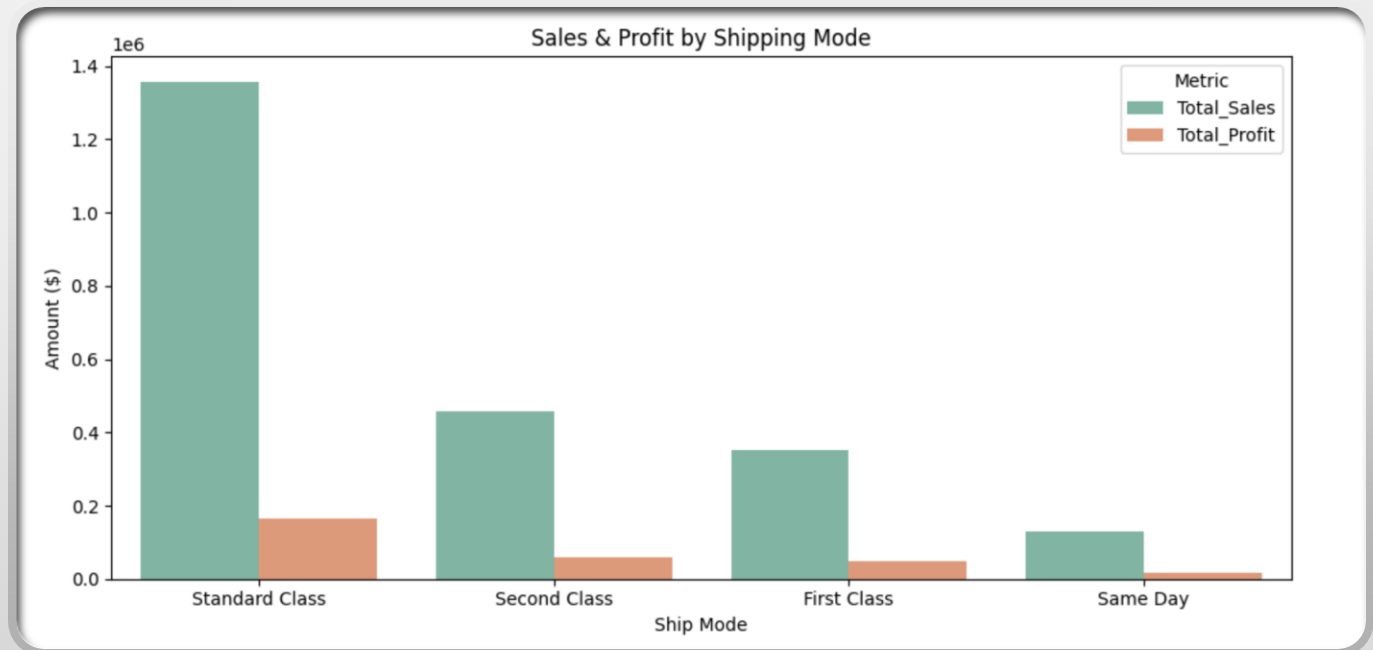


State wise profit Heat Map

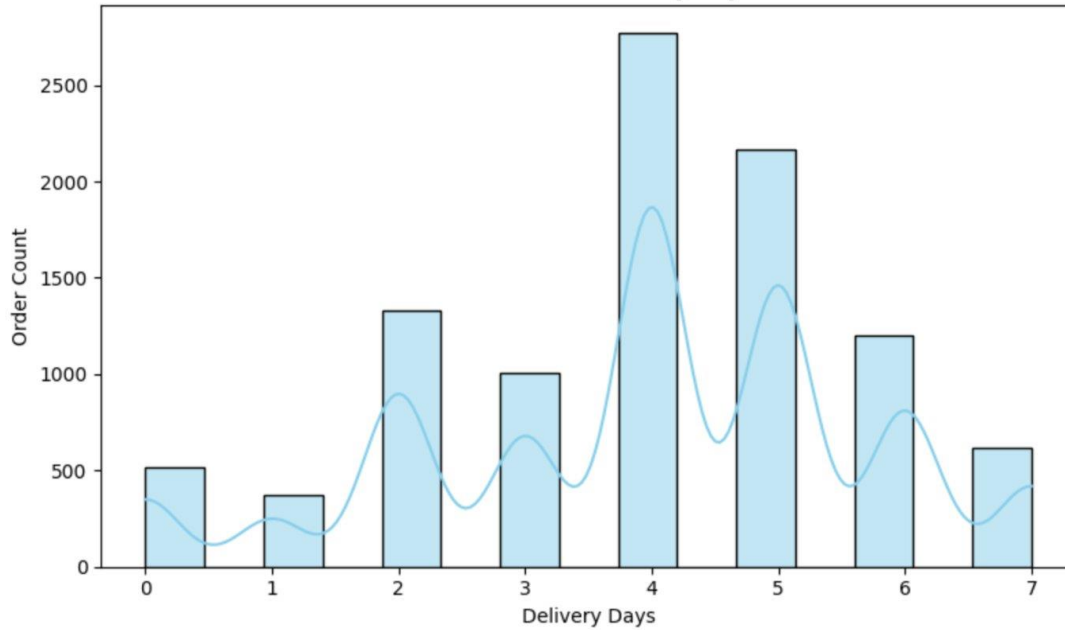


Shipping & Delivery Insights

- **Ship Mode Impact:** Compared Profitability by different Ship Modes (Standard, First Class, etc.)
- **Delivery Delays:** Analyzed delivery time. Show how delay affects customer satisfaction or profitability.



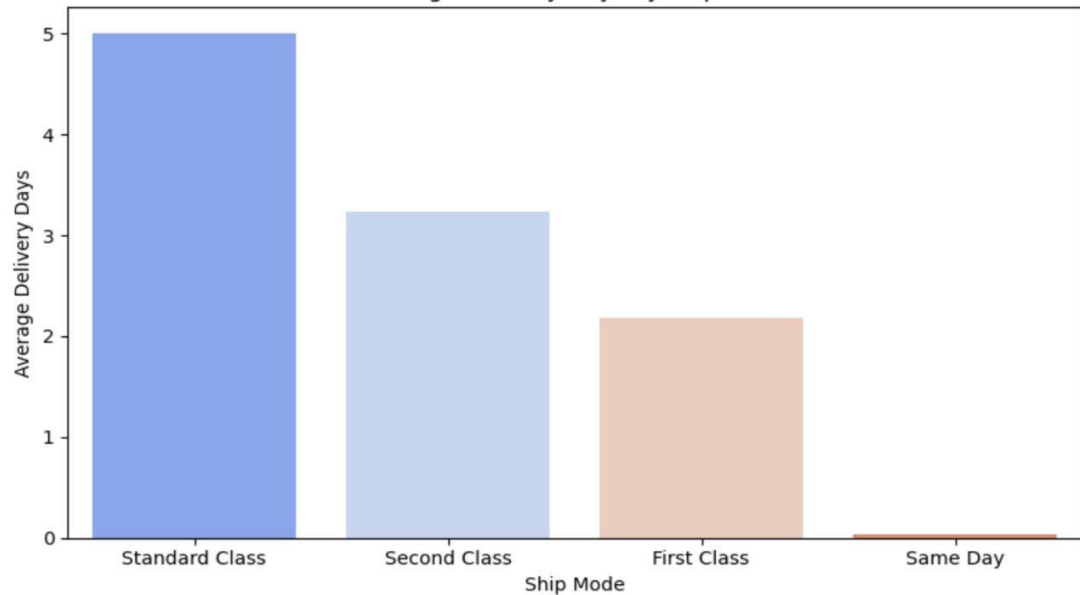
Distribution of Delivery Days

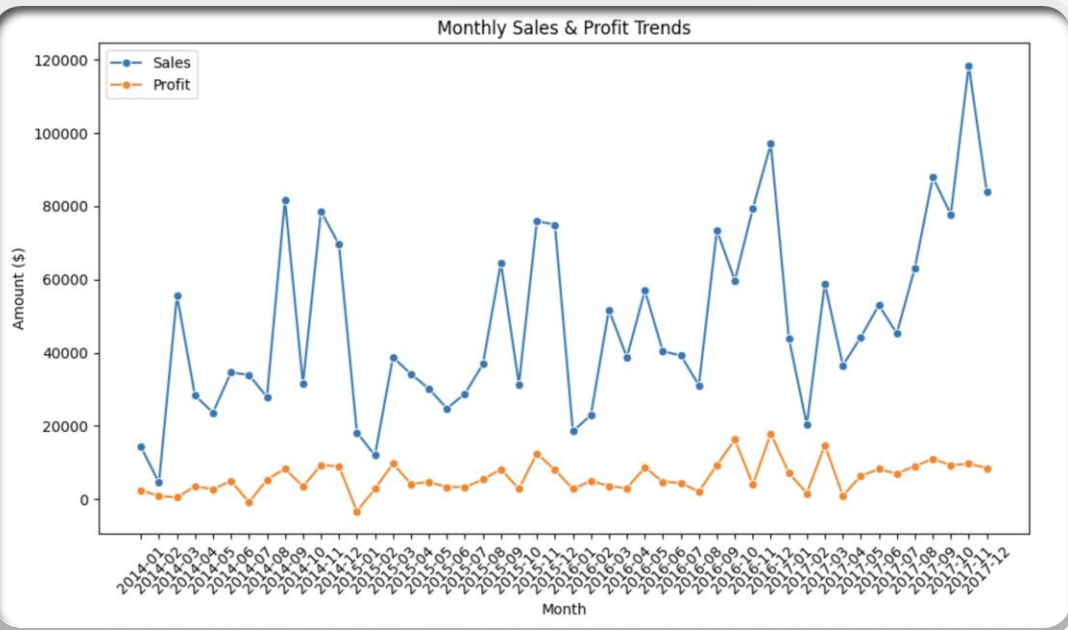


Showing how delivery days affects order count and profitability.

Average delivery days by different Ship Modes (Standard, First Class, etc.)

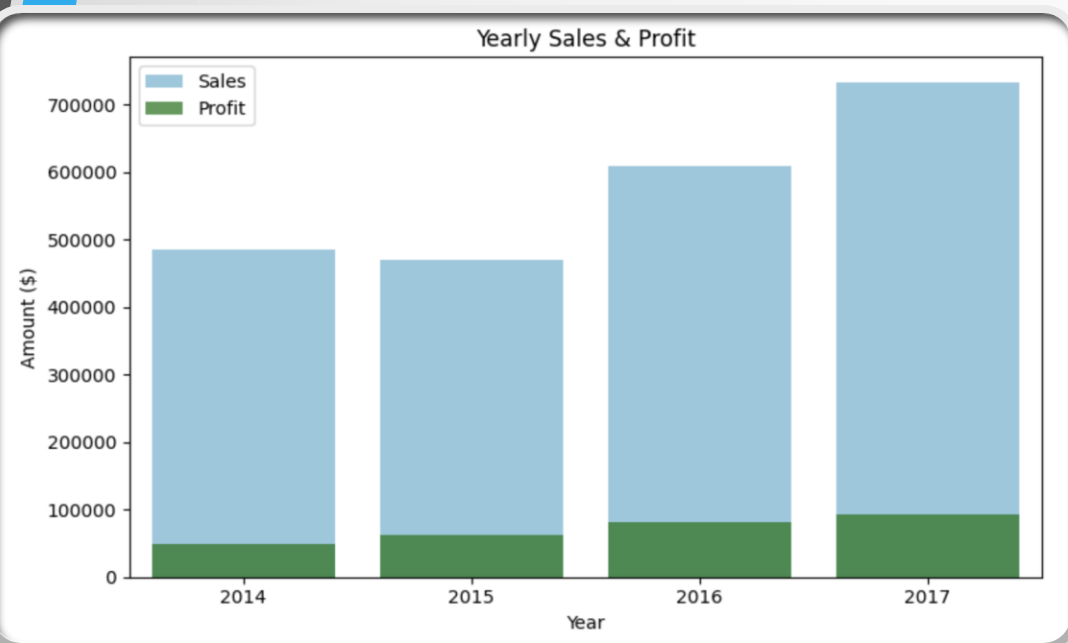
Average Delivery Days by Ship Mode





Time-Series Trends

- **Monthly/Yearly Trends:**
- Line plot showing Monthly Sales and Profit over time.
- Identify seasonal peaks or dips.





KPI METRICS

Key Performance Indicators (KPIs)

- Total Sales: \$X M
- Total Profit & Profit Margin: \$Y M | Z%
- Average Order Value (AOV): Sales / No.of Orders

Key Performance Indicators

Total Sales: \$2.30 Million

Total Profit: \$286397.02

Profit Margin: 12.47%

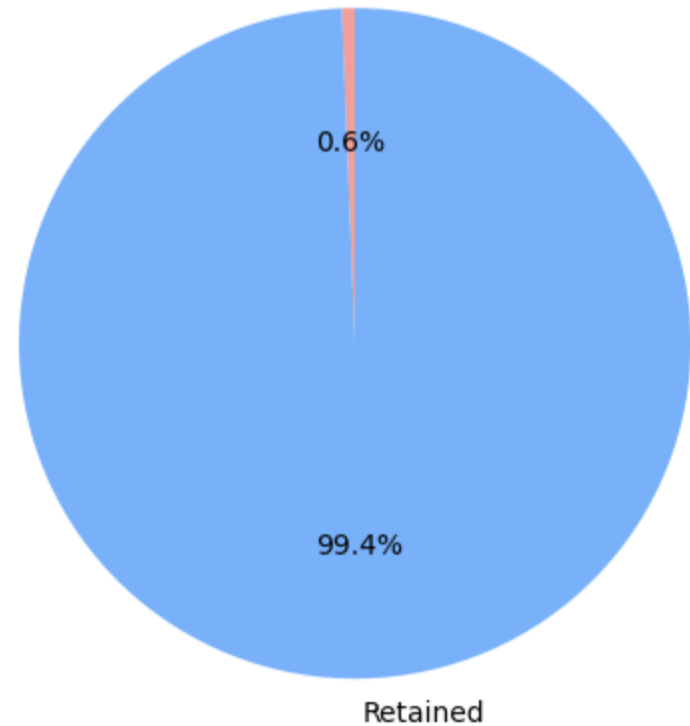
Average Order Value (AOV): \$458.61

Customer Acquisition vs. Retention

- Key Insights:
- Acquired Customers (First-Time Buyers): Orange
- Retained Customers (Repeat Buyers): Blue
- Indicates customer base health and potential for **customer loyalty** programs.

Acquired Customers (First-time Buyers): 5
Retained Customers (Repeat Buyers): 788

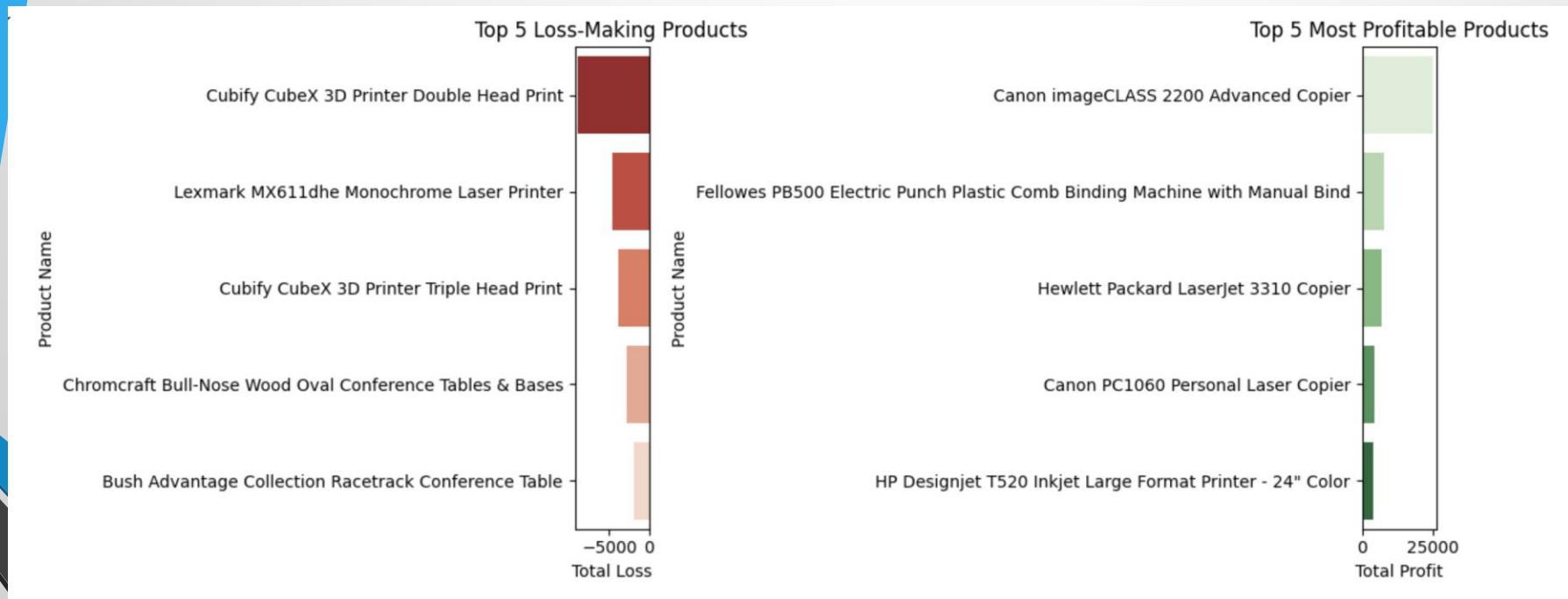
Customer Acquisition vs. Retention



Top & Bottom Performing Products & Categories

Interpretation:

- **Focus on scaling** high-profit products and categories.
- Investigate **loss-making products** — high discounting, returns, or poor margins?
- Consider **eliminating or re-pricing** bottom products.



Strategic Insights & Recommendations

What's Working:

- Best segments, top products, high-profit regions.

What Needs Attention:

- Loss-making categories, delivery inefficiencies, over-discounted items.

Suggested Actions:

- Optimize product portfolio.
- Focus marketing on profitable segments.
- Improve delivery strategy.

