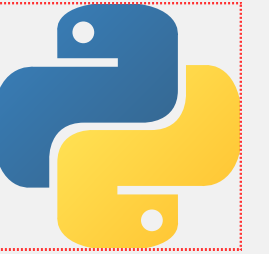# SUPER-MARKET SALES ANALYSIS

From Data to Decisions: Optimizing Supermarket Sales!

EDA Using :-

By - Aditya Tappu

Introduction

Why this project?

- Sales performance is the backbone of a supermarket's success, and understanding key trends is crucial.

- This analysis evaluates sales patterns, customer preferences, and transaction trends to drive informed business decisions.

What does this presentation cover?

- Key sales metrics (Total Sales, Customer Demographics, Payment Methods, etc.).

- Analysis methodologies used in Python.

- Insights and data-driven recommendations for optimizing sales and customer experience.

Objectives

- Identify peak sales periods and trends.

- Compare sales performance across different branches and cities.

- Understand customer preferences based on demographics and purchase behavior.

- Analyze payment method distribution for better financial planning.

- Leverage customer ratings to improve supermarket services.

EDA Methodologies Used

Data Preparation:

- Used pandas for data exploration and transformation.
- Checked and ensured proper data types for all columns.
- Created new columns to enhance analysis.

Analysis & Calculations:

- Performed basic statistical analysis and summary statistics using pandas.
- Explored key trends like total sales, customer distribution, and sales patterns across different variables.

Visualizations & Dashboards:

- Used matplotlib and seaborn for visualizing trends, distributions, and relationships.
- Created plots to explore key factors such as sales over time, customer demographics, and performance by product line.

EDA: Key Sales Insights

- Weekly Sales Over Time

- Branch-wise Sales Performance

- Gender-wise Total Sales Distribution

- Sales Performance by Customer Type & Payment Method

- City-wise Total Sales Distribution

- Customer Type vs. Product Line Sales

- Sales Trend Across Different Hours
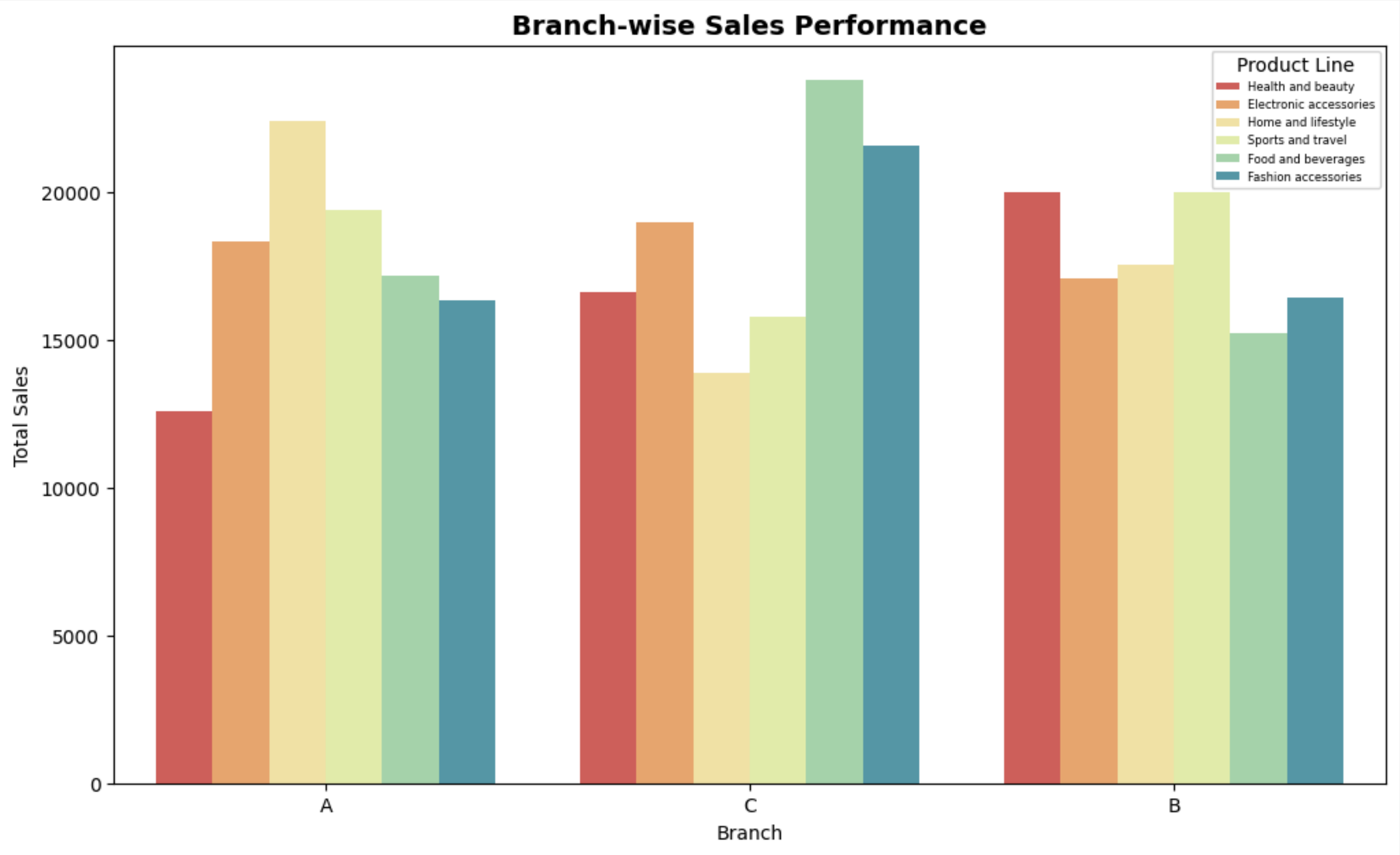
- Customer Rating Distribution

Insights

Sales peaked in Week 4, hit the lowest in Week 13, and followed a fluctuating but overall declining trend.
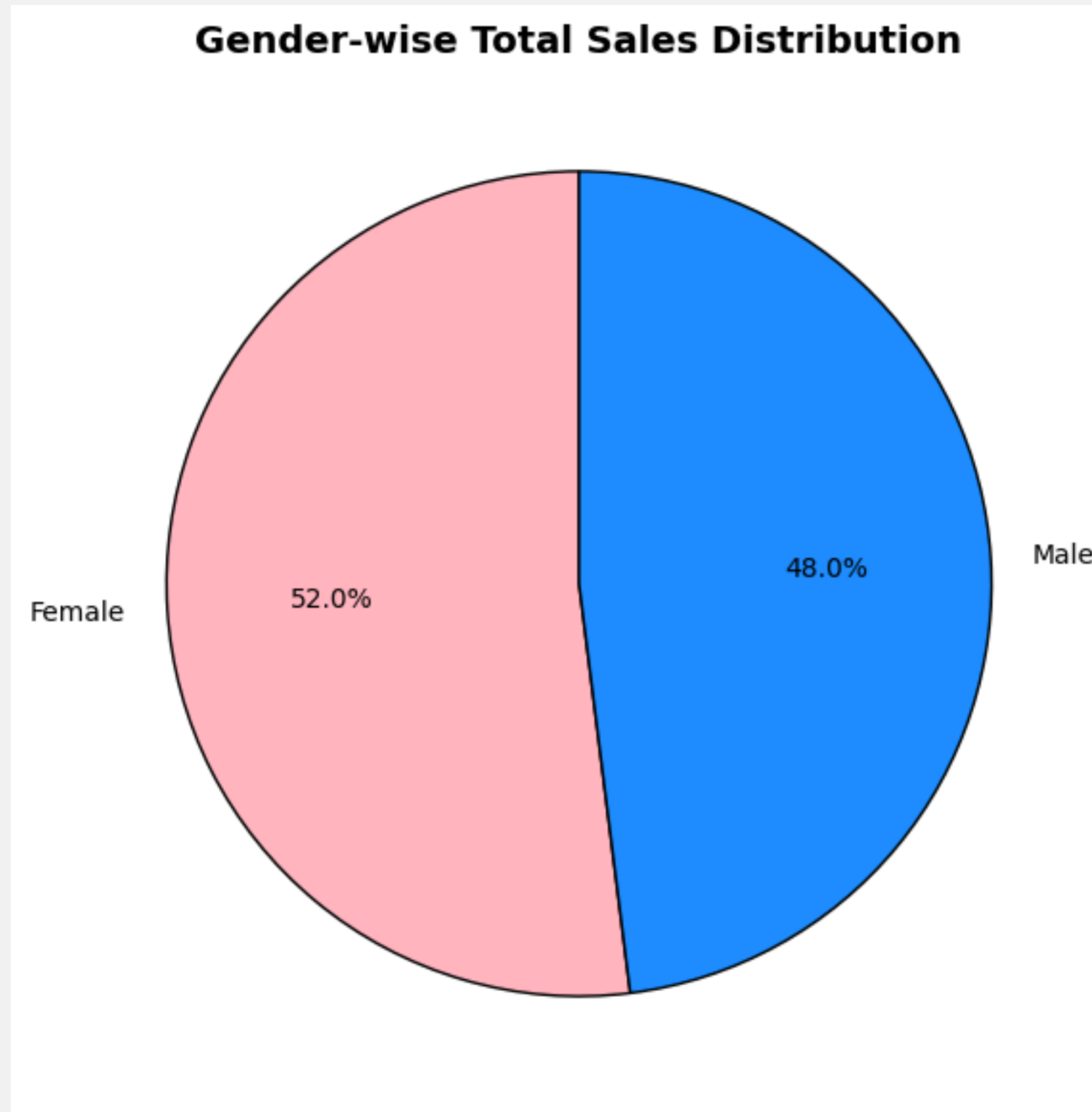

Weekly Sales Over Time
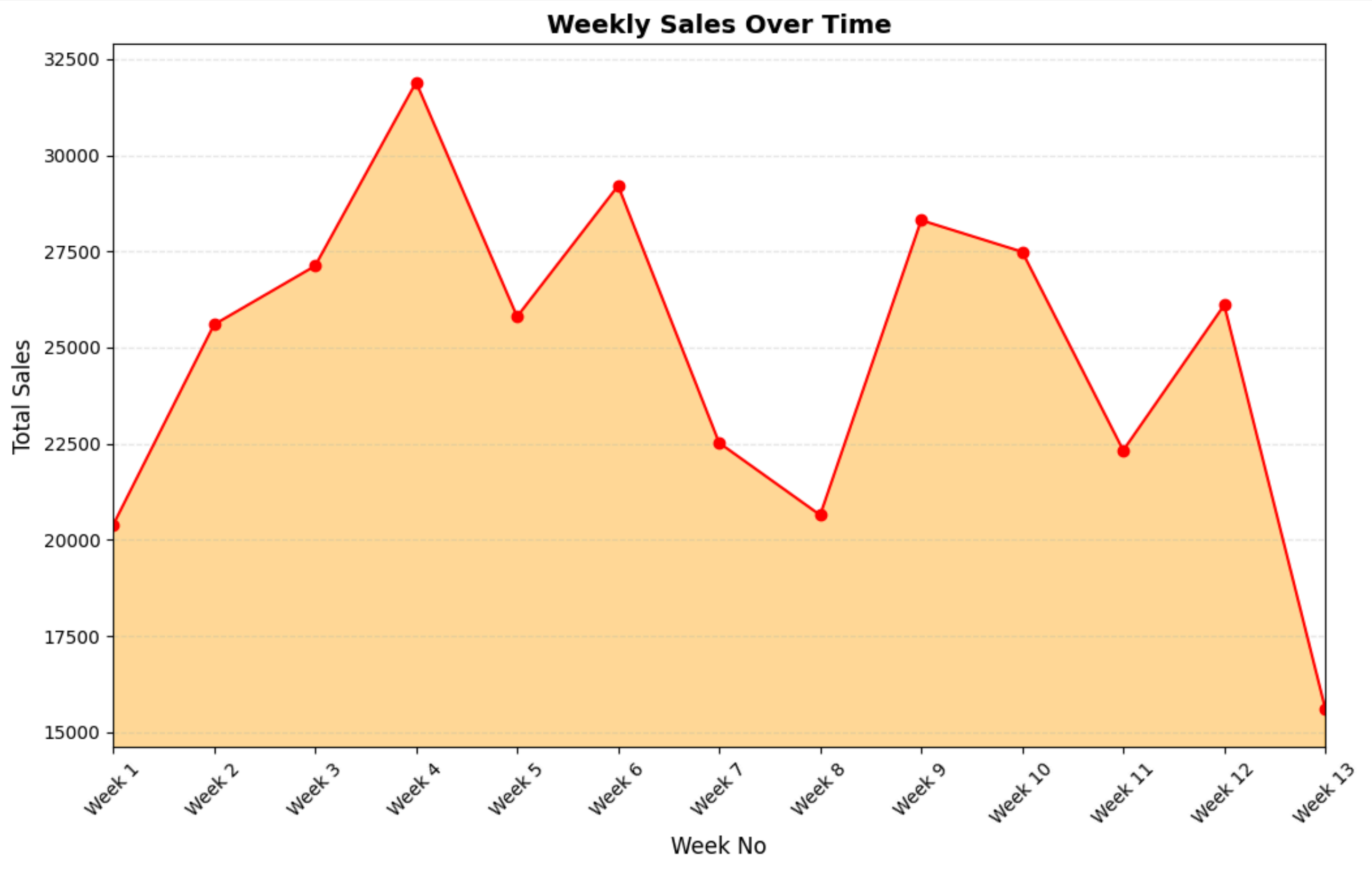
Insights

- Branch A: Home & Lifestyle leads.
- Branch B: Health & Beauty tops.
- Branch C: Food & Beverages highest.

Branch-wise Sales Performance
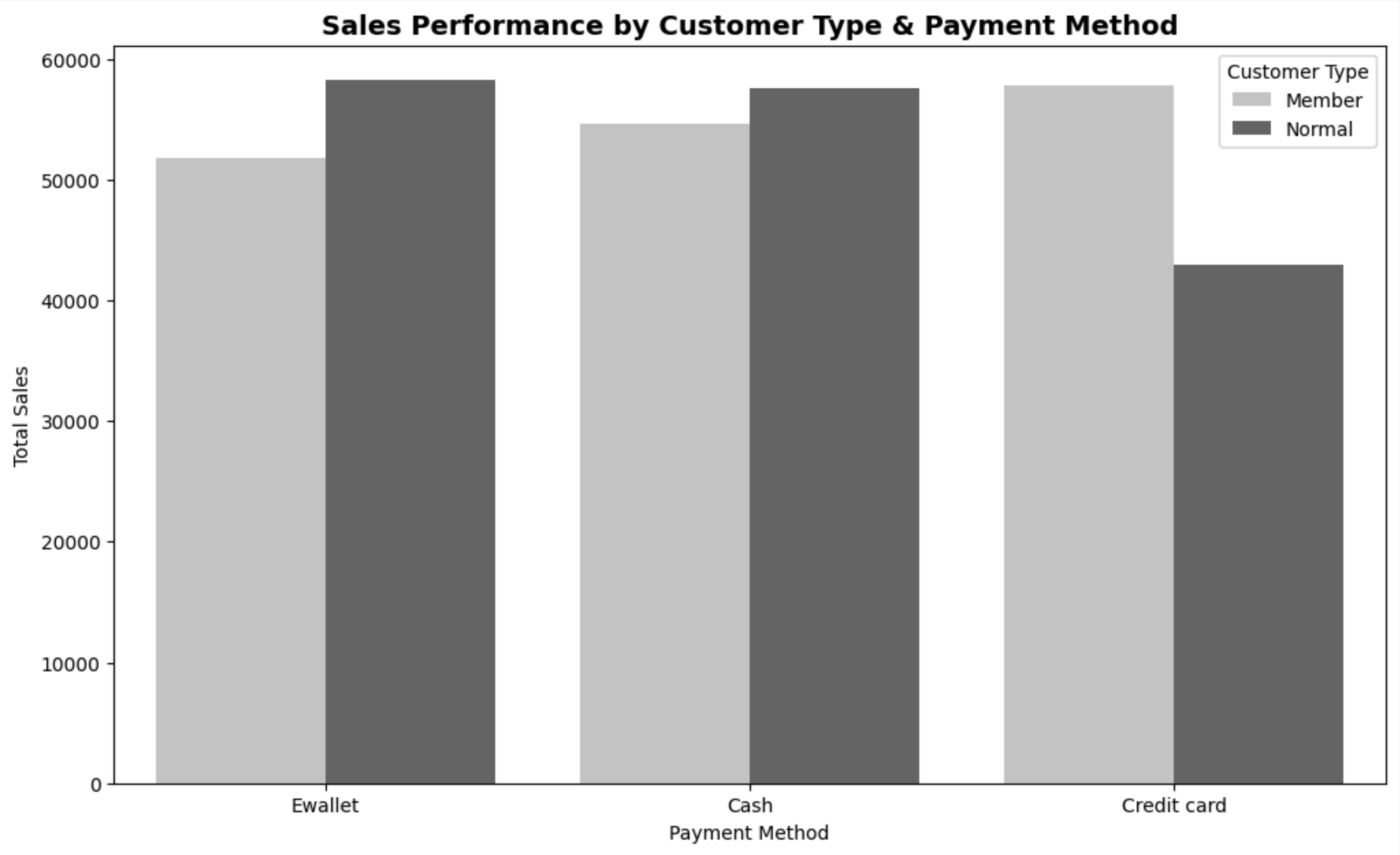
Insights

Sales are almost evenly split by gender, with females contributing 52% and males 48%.


Gender-wise Total Sales Distribution

Insights

- Normal customers prefer E-wallets the most.
- Members make the highest payments via Credit Cards.
- Cash payments are consistently high for both customer types.

Sales Performance by Customer Type & Payment Method

Insights

Naypyitaw leads in total sales with 34.2%, while Mandalay and Yangon contribute equally at 32.9% each.


City-wise Total Sales Distribution
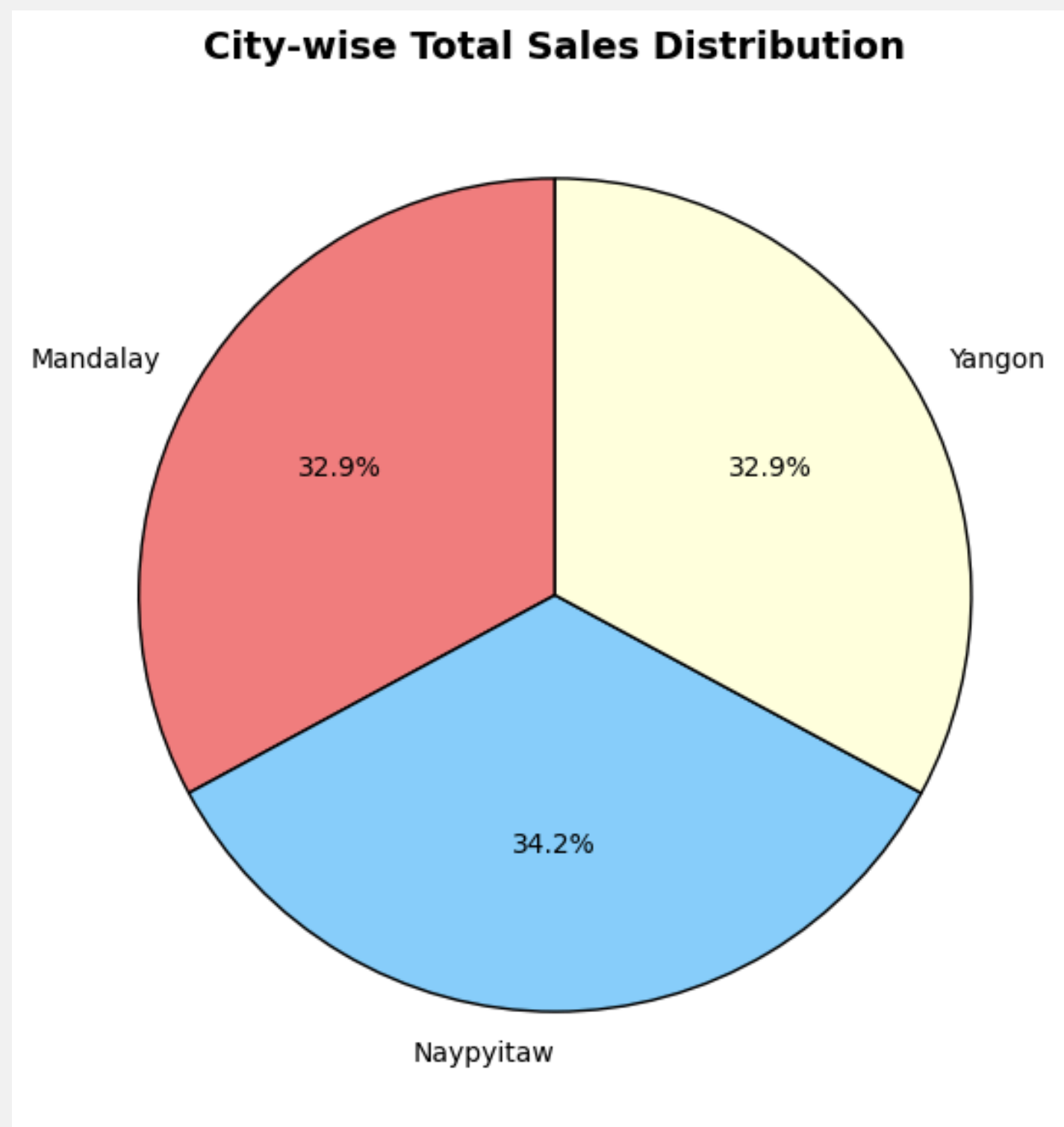
Insights

The highest sales for Members are in the Food and Beverages category, while for Normal customers, Electronic Accessories leads.


Customer Type vs. Product Line Sales
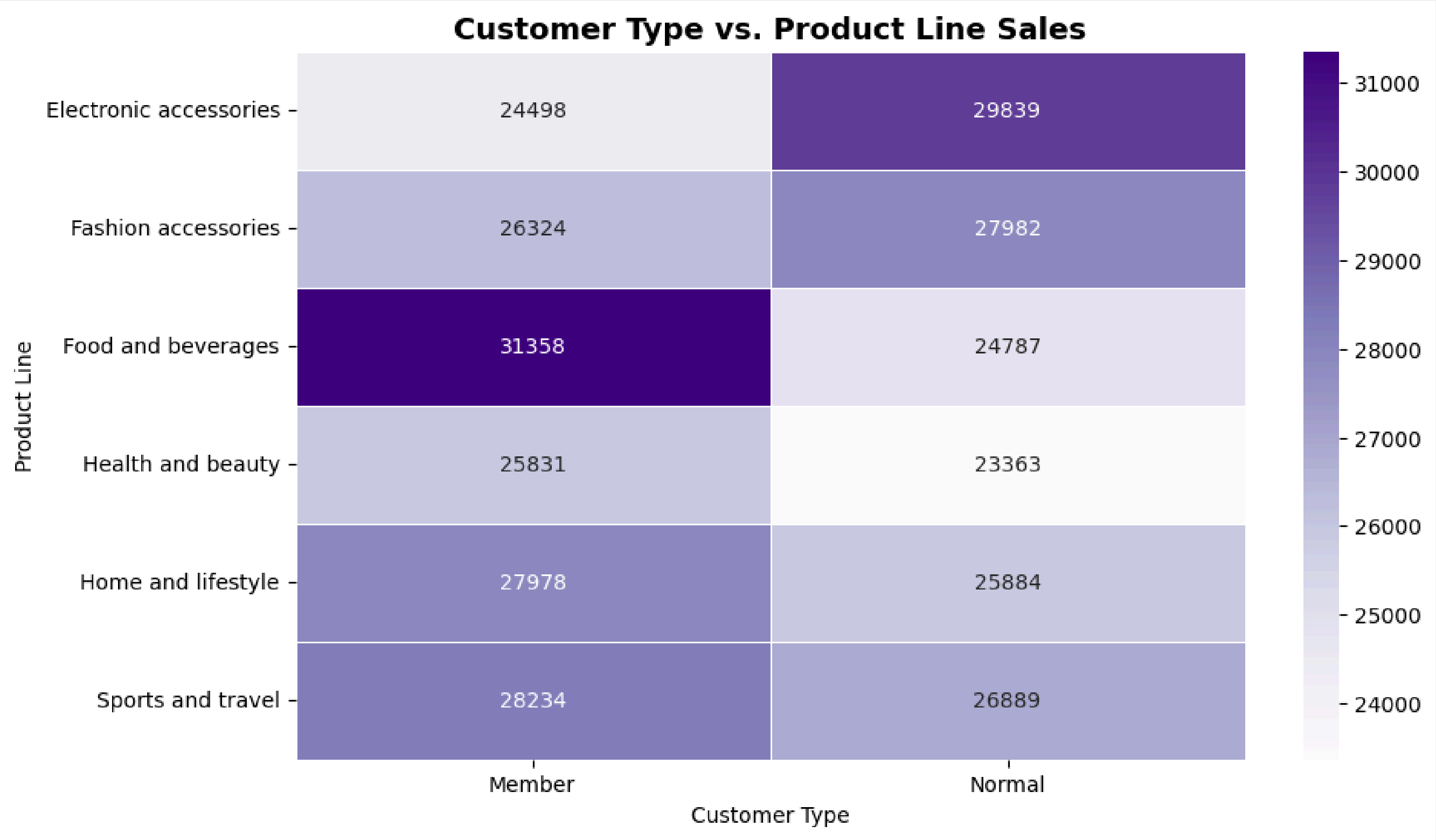
Insights

The sales trend shows a peak around 1 PM and 7 PM, with the highest sales occurring at 7 PM . Sales are lowest around 5-6 PM before rising sharply in the evening.

Sales Trend Across Different Hours
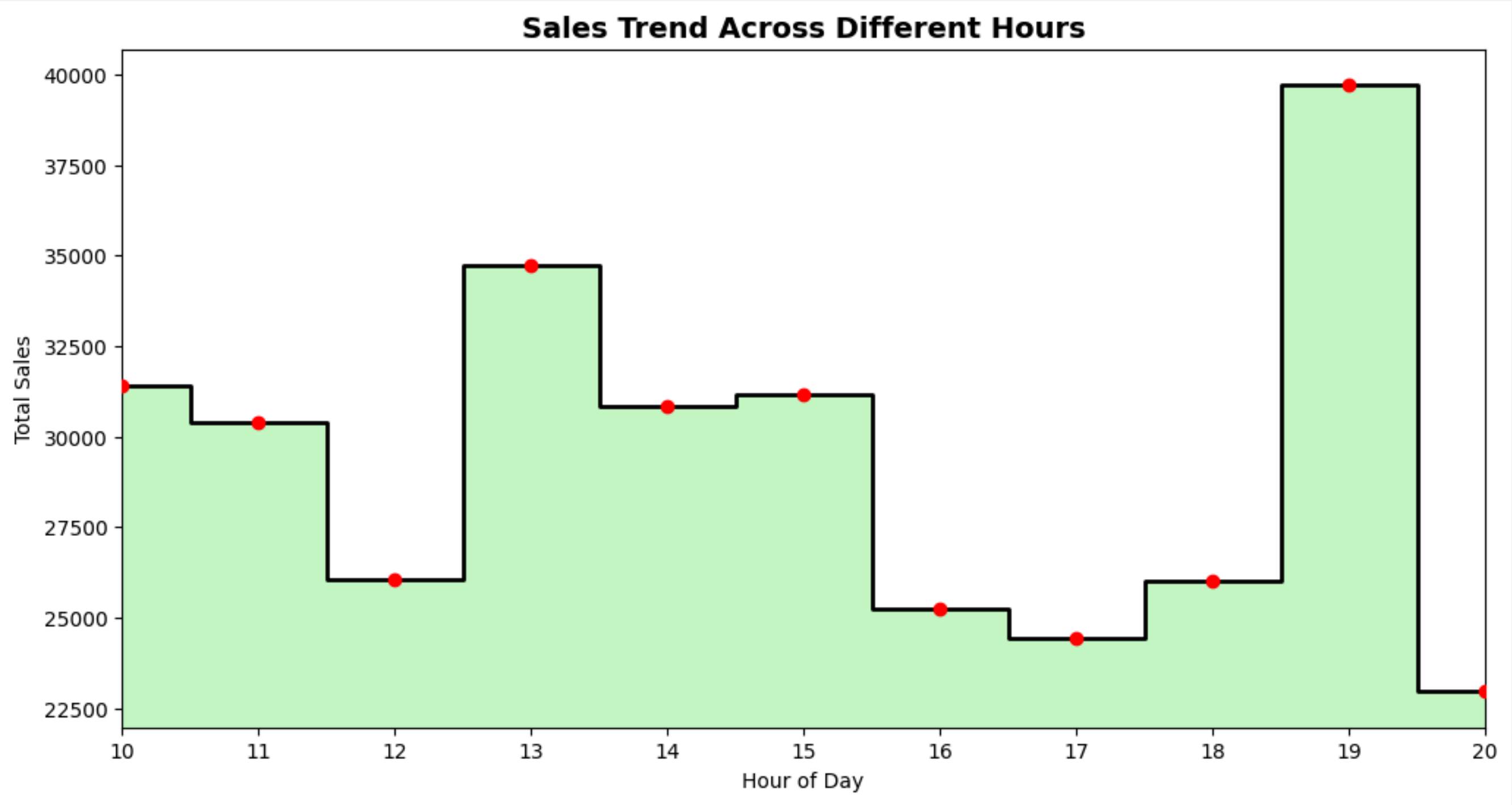
Insights

The customer ratings range from 4 to 10, with a fairly balanced spread. Ratings 6 and 7 are the most common.

Customer Rating Distribution
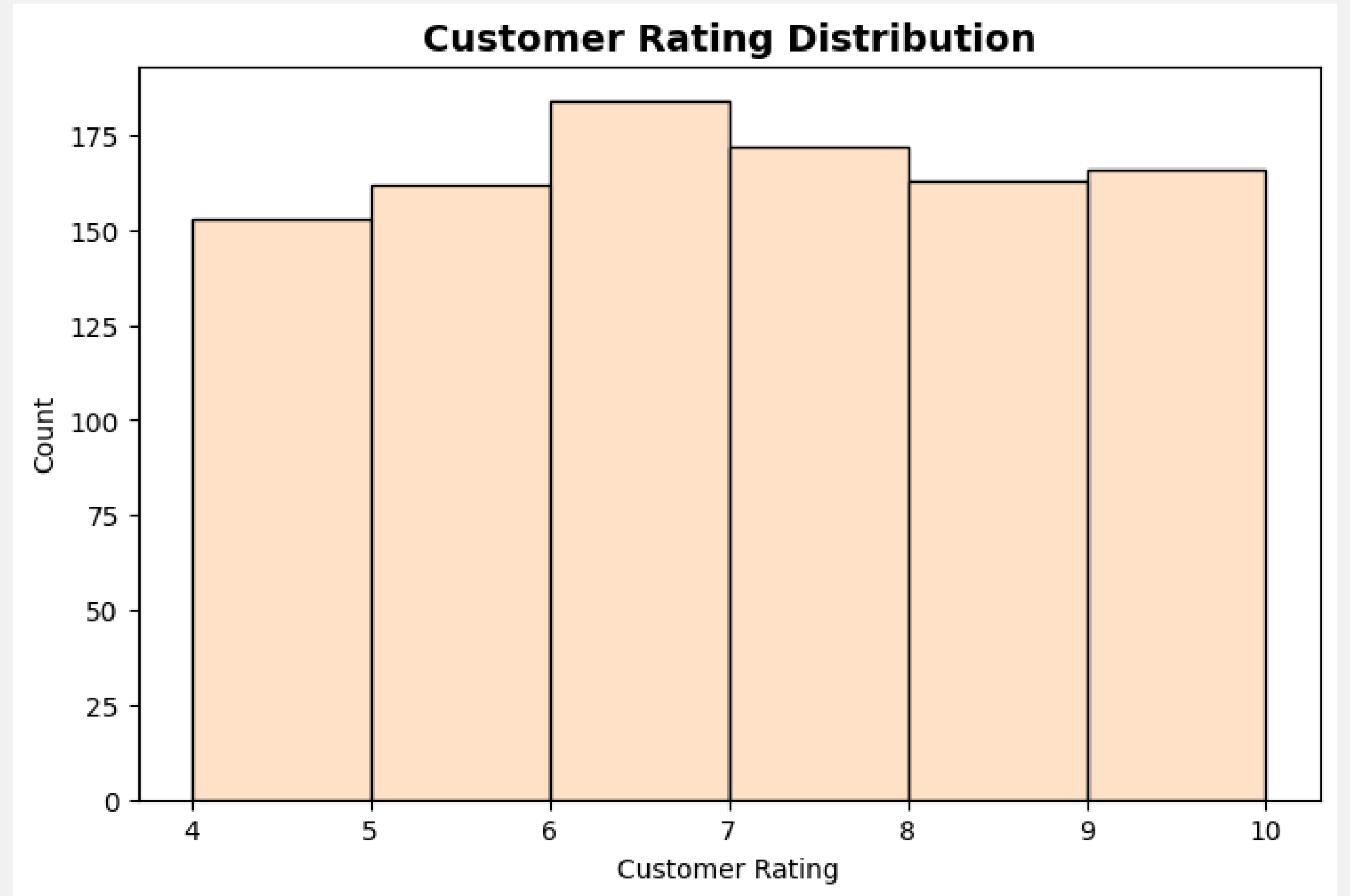
Recommendations For Supermarket

- Keep more Food & Beverages in stock since they sell the most, especially to members.

- Improve service in low-selling branches to increase sales.

- Focus more on high-sales cities and find ways to improve sales in low-sales areas.

- Arrange products better based on the most common customer gender in each store.

- Make sure there are enough staff and products during busiest hours (7-8 PM).

- Find ways to increase midday sales (12-5 PM), like special discounts or special combos.

- Improve customer service to get higher ratings and better reviews.

- Speed up billing by making popular payment methods faster and easier to use.

THANK YOU