

# SUPERMARKET ANALYTICS

A shopping cart is positioned in front of a brick wall, partially obscured by the text. The cart is empty and has a barcode scanner attached to the handle.

A Report Presented By the Group V Team of TECH1M Data  
Analytics Bootcamp

# TEAM MEMBERS

## Team Lead-

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- Abioye Adekunle
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## Project Documentation-

- Winsome Ogidi
- Abioye Adekunle

# PROJECT SUMMARY

- **Title:** Supermarket Analysis.
- **Dataset:** [https://github.com/Kile-kun/Marketing-Analytics/blob/main/Supermarket\\_Sales.htm](https://github.com/Kile-kun/Marketing-Analytics/blob/main/Supermarket_Sales.htm)
- **Analytics Tools:** Microsoft Excel, Python, and PowerBI
- **GitHub Link:** <https://github.com/Kile-kun/Marketing-Analytics>

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# INTRODUCTION

- ❑ Maximizing Sales and Revenue forms a pivotal goal of every business setup.
- ❑ Conscious effort, time, and resources in turn are deployed to increase the customer/patronage base, which usually results in more sales/revenue and profit.
- ❑ One of the most prominent Techniques to enhance sales and revenues is the encouragement of repeated purchases via loyalty programs.
- ❑ By offering rewards, personalized communications, and exclusive experiences, businesses show their customers that they value their business and are committed to providing them with the best possible experience.

# PROBLEM STATEMENT AND OBJECTIVES

## ❑ PROJECT GOAL-

- The Project entails analyzing supermarket outlet data to help drive strategic actions.

## ❑ PROJECT OBJECTIVES

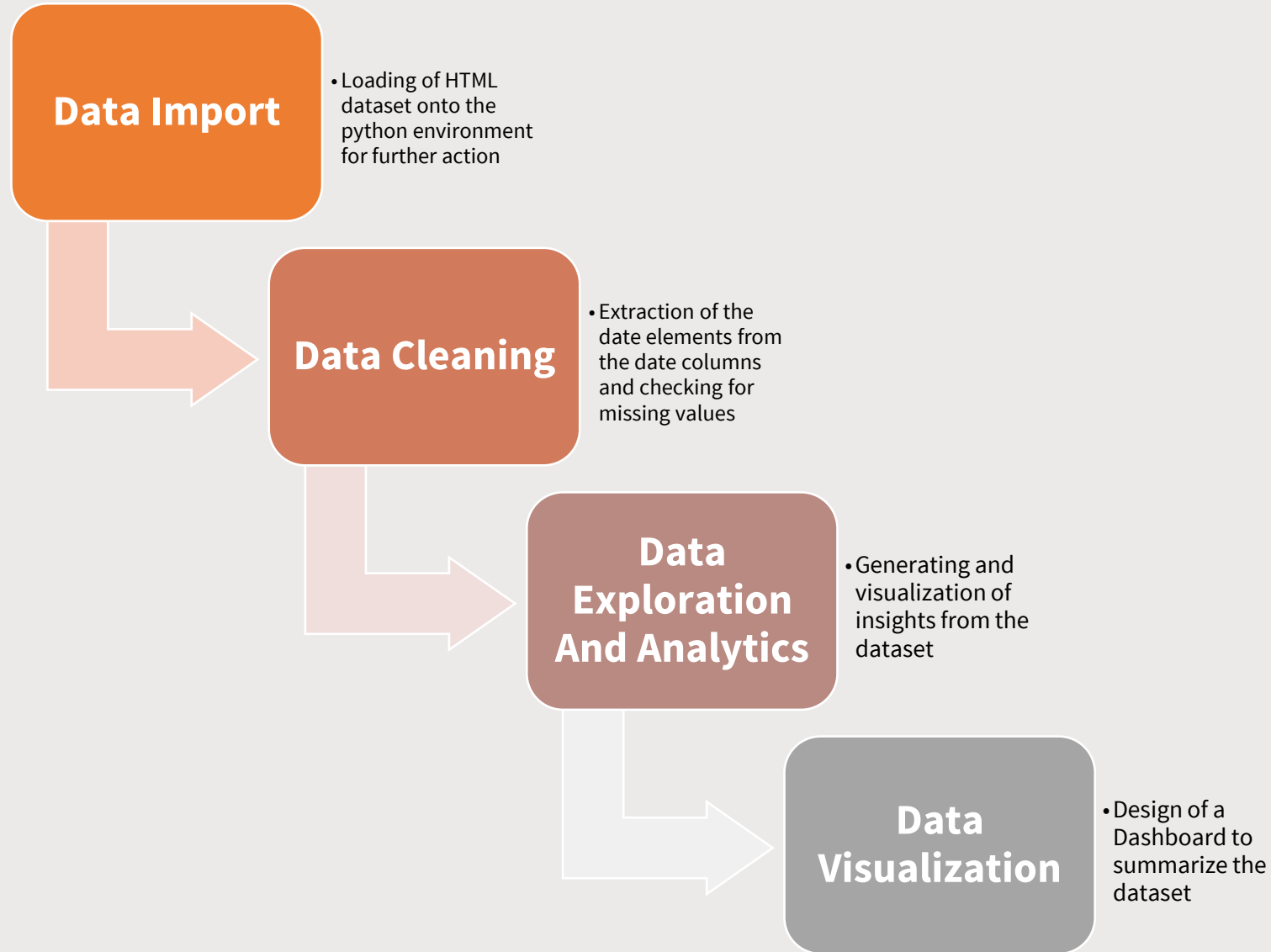
- To Use different analytics tools to load and analyze the provided data.
- To Establish the different demography of all the customers that patronize the supermarket.
- To establish the effect of the loyalty program on sales.

# DATASET DESCRIPTION

This dataset was provided as part of the Bootcamp Group Project by [TECH1M](#). The dataset provides details about a supermarket outlet across 3 different branches for 3 months sales period. The columns contained in the dataset include;

- **RowID** - Serially generated row number
- **Invoice ID**- Transaction ID
- **Branch**- Supermarket Branch
- **City**- Location of Customer
- **Customer type**- Type of Customer (Member or Normal)
- **Gender**- Gender of Customer
- **Product line**- Product Description
- **Unit price**- Price product is sold for by supermarket
- **Quantity**- How many quantities purchased
- **Tax 5%**- Tax at point of sale
- **Total**- Price x Quantity (less tax)
- **Date**- Date of Transaction
- **Time**- Time of Transaction
- **Payment**- Method of Payment
- **cost\_of\_goods\_sold**- How much it cost the supermarket to acquire/produce the product
- **gross margin percentage**- % profit over cost
- **gross income**- Profit in money terms
- **Rating**- Customer rating
- **Year in City**- How long customer has been in City
- **Age**- The age category of customers
- **ProdID**- Unique ID for products sold

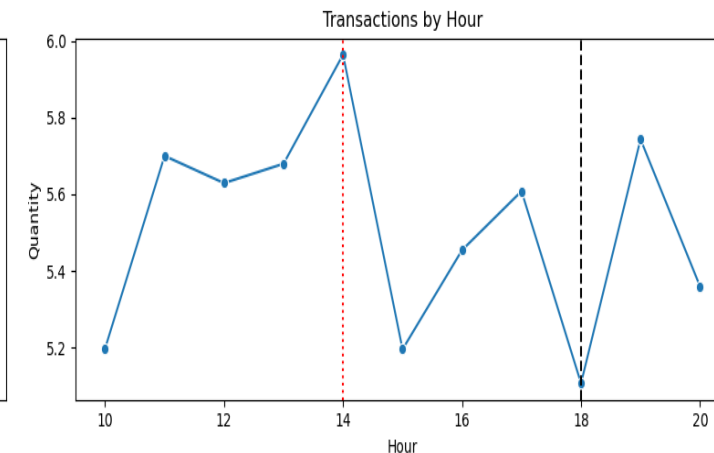
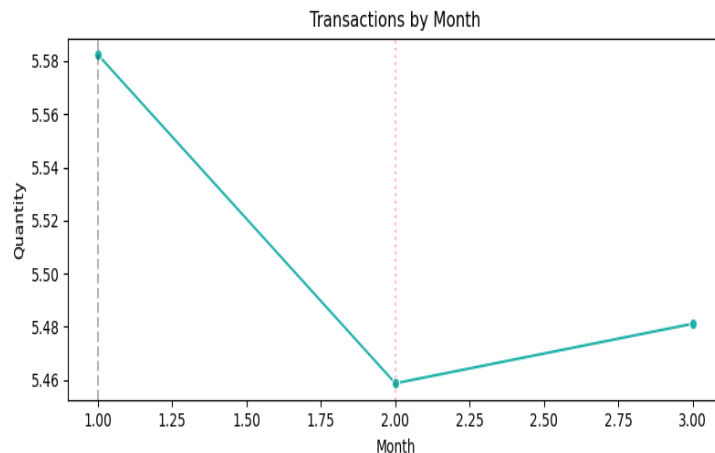
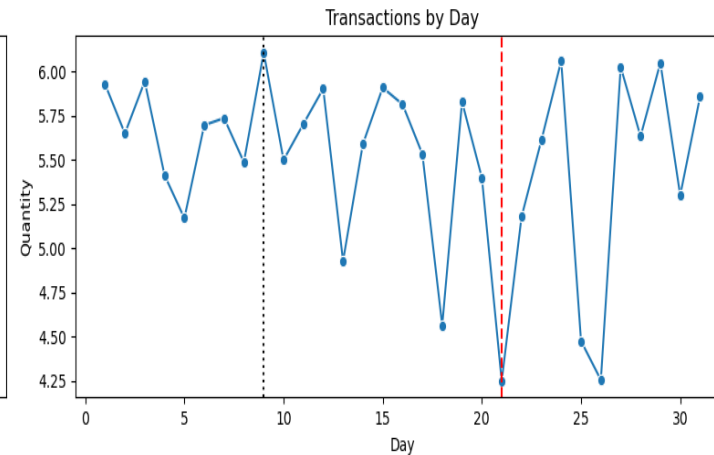
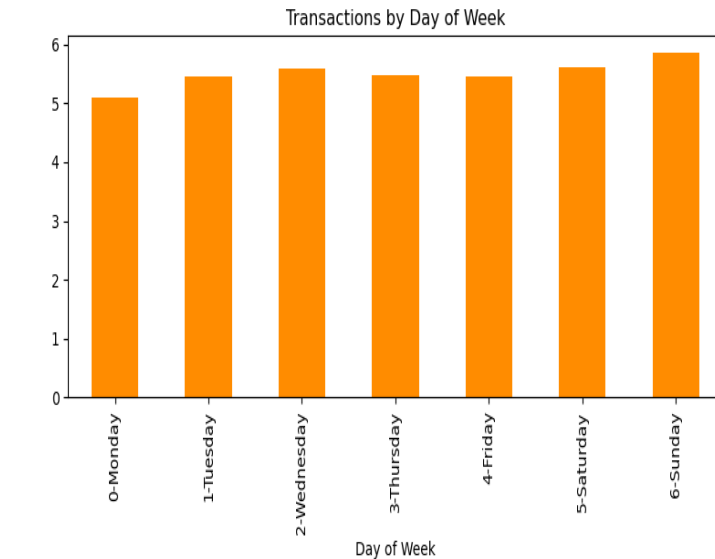
# PROJECT SOLUTION METHOD





# DATA EXPLORATION AND ANALYTICS (Time Series Analysis)

Data Exploration involves analyzing the Supermarket Sales dataset to discover trends and patterns and generate insights while trying to understand the data in depth. We made use of python to explore the dataset

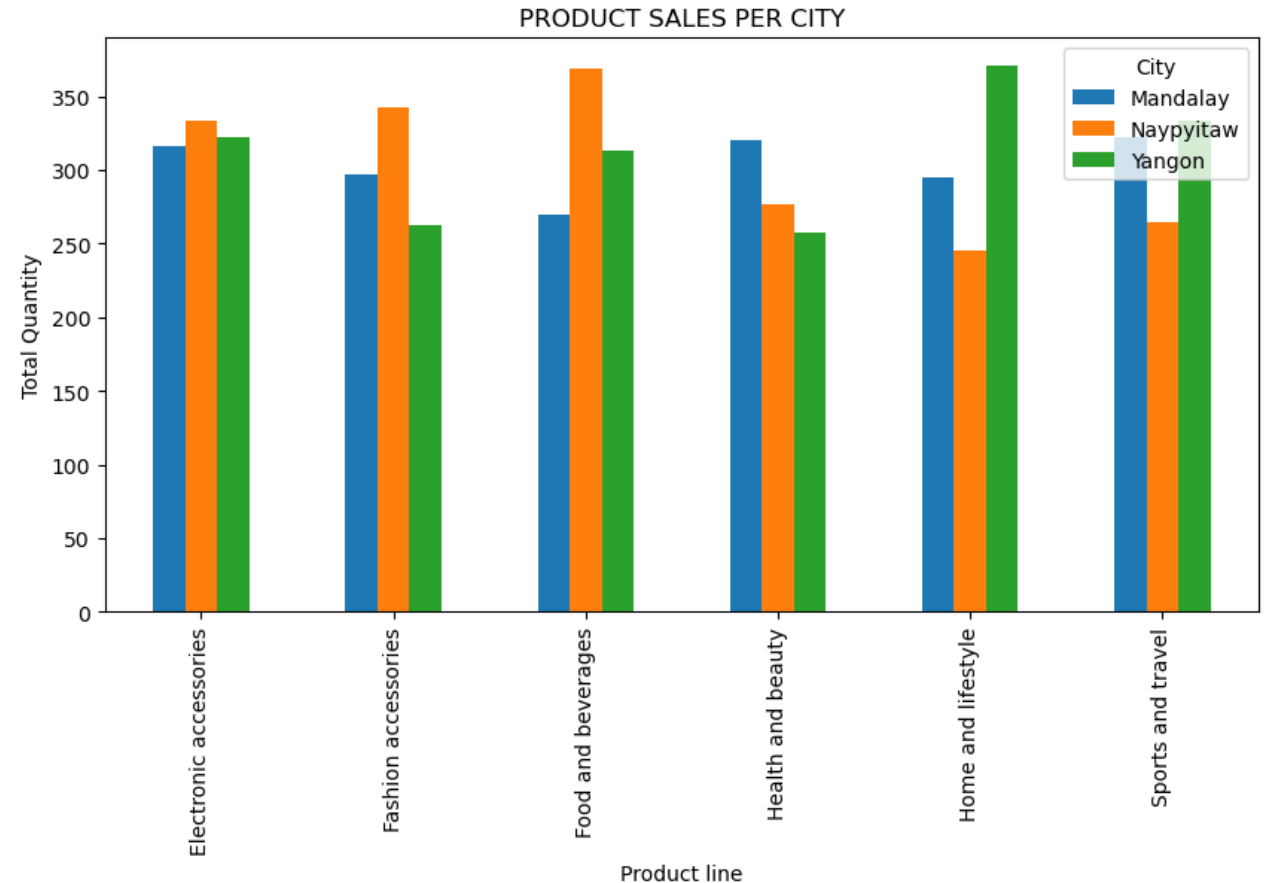


From The Date/Time Series Analysis in the images above:

- The data was collated over the span of 3 months in 2019.
- The Supermarket operates all through the days of the week and is open daily between the hours of 10:00 am to 8:00 pm
- Averagely, Sales perform better on '**SUNDAYS**' in the Supermarket Outlet
- More Quantity are sold in the '**second**' and '**fourth**' week of the month
- Its peak sales occur around 'mid-day (2 pm)' due to more traffic customers and its lowest sales occur around '6 pm' in the evening.

# DATA EXPLORATION AND ANALYTICS (Product Sales Per Location)

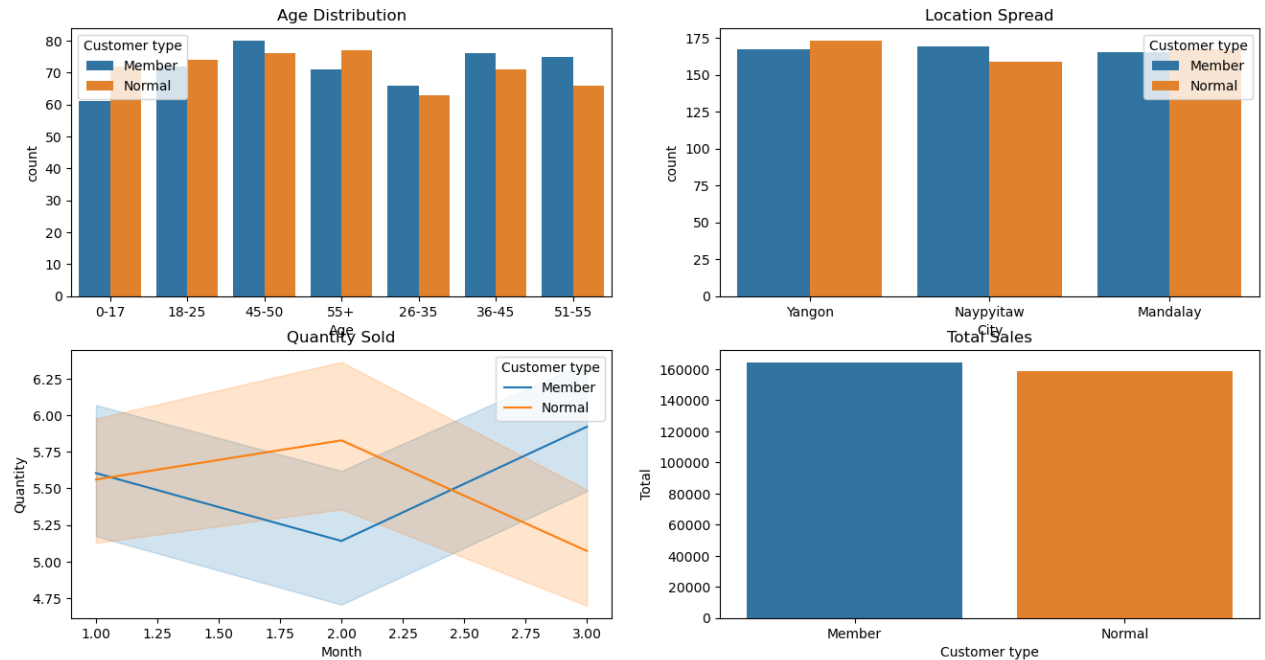
- The Product Sales per City graph shows details of the product lines that sold most across the three cities shows. This reports:
  - ‘Sports and Travel’ Items as MANDALAY’s **best-selling product**
  - NAYPYITAW had ‘Food and beverage’ as its **top-selling product**,
  - Whereas **Home and Lifestyle** products sold more in YANGON,
  - Averagely, ‘Electronic accessories’ perform well across the city



# DATA EXPLORATION AND ANALYTICS (Influence of Loyalty on Sales)

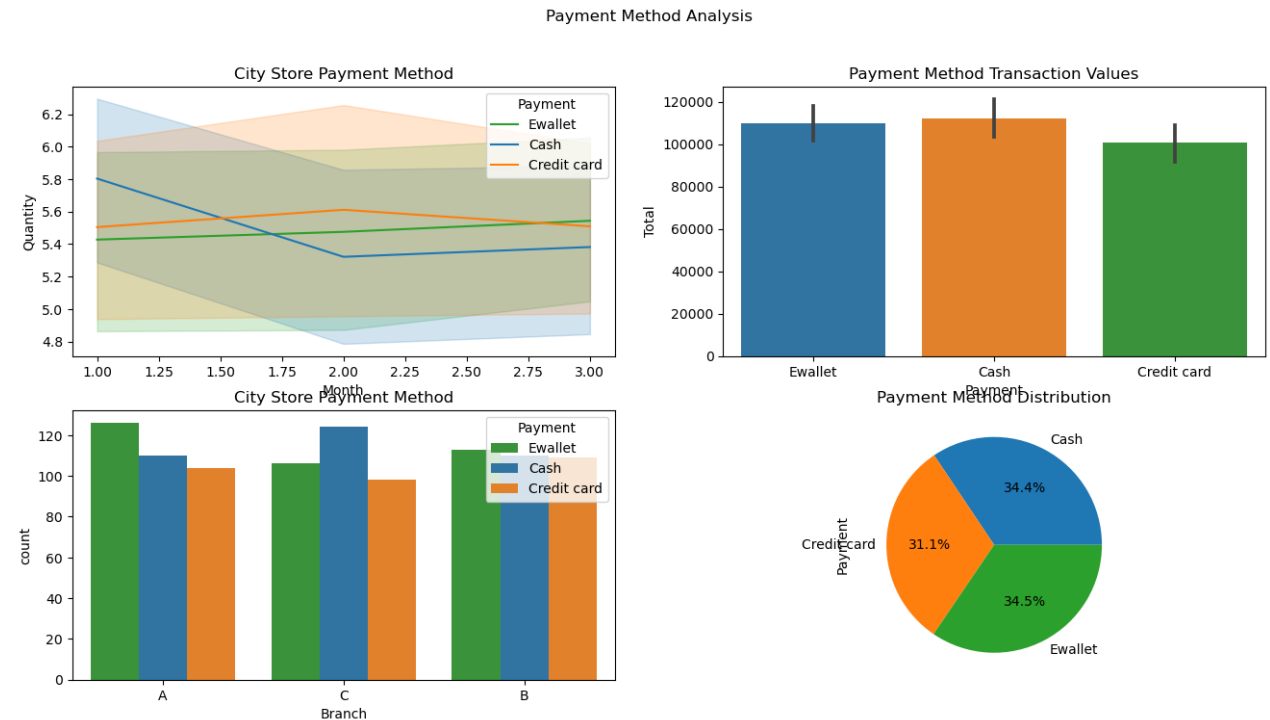
- The Chart on the right shows that;
- 45-50 Age group had more loyal customers than other age groups.
- Only **Naypyitaw** had more loyal customers to ordinary customers ratios than others.
- There seems to be increasing sales from Loyal customers than Ordinary customers.
- As a result, 3 more revenue is generated from the Loyal customers.

Influence of Customer Membership Type on Sales



# DATA EXPLORATION AND ANALYTICS (Payment Method Analysis)

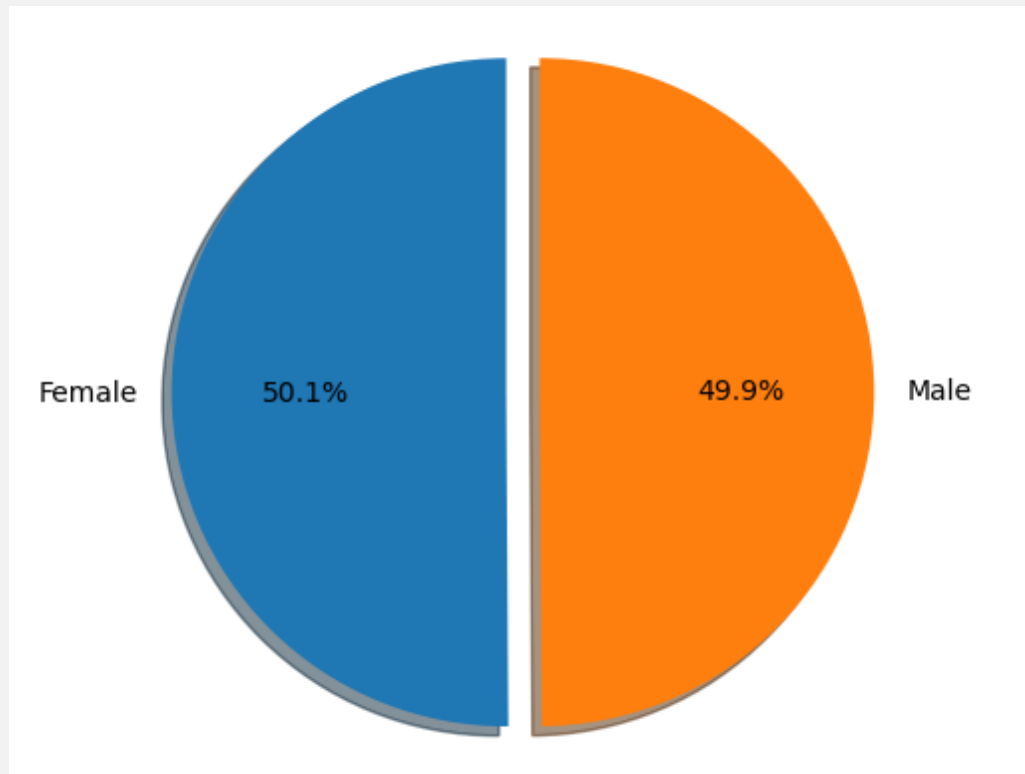
- Insights from the above visuals in the previous slide:
  - The rate of supermarket e-wallet adoption is steadily increasing as against other methods.
  - Cash transactions still maintain the **heaviest transaction value** as compared to others but in terms of cash handling (merging credit and e-wallet as one), Cashless transactions maintain **better transaction value** and **quantity** than cash transactions.
  - Branch A has better e-wallet adoption progress than other branches.



# DATA EXPLORATION AND ANALYTICS (Age & Gender Sales Patronage)

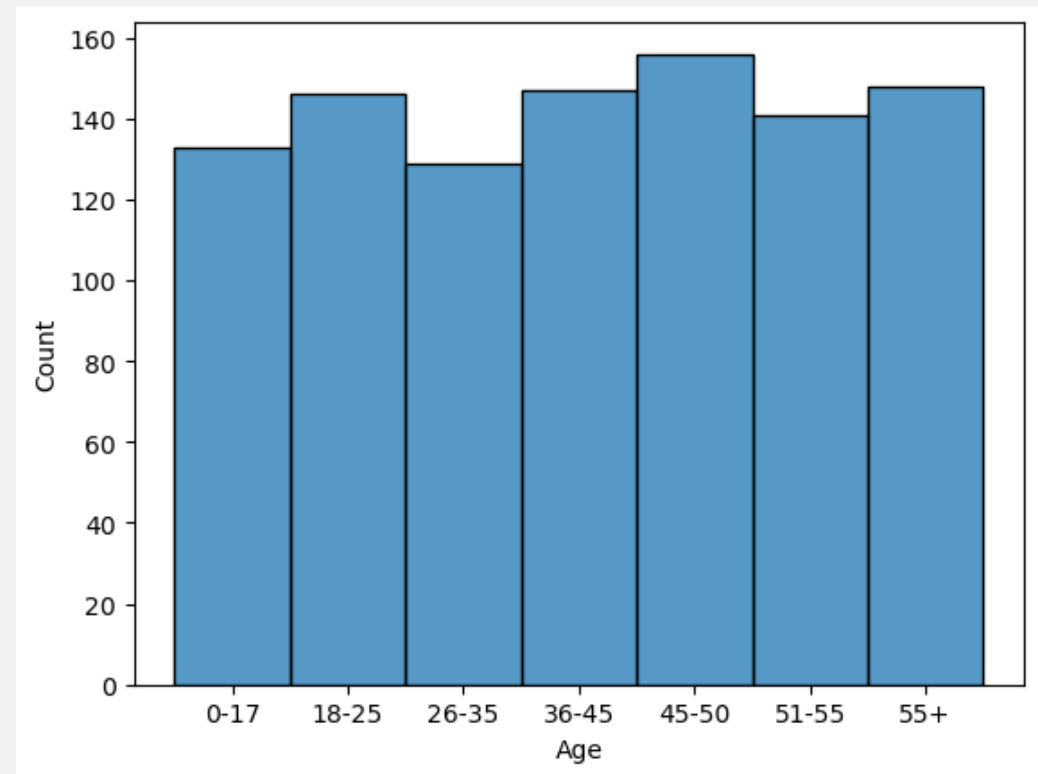
## Gender Distribution

The pie chart **below** showed slightly better patronage from female customers (50.1%) than male customers.



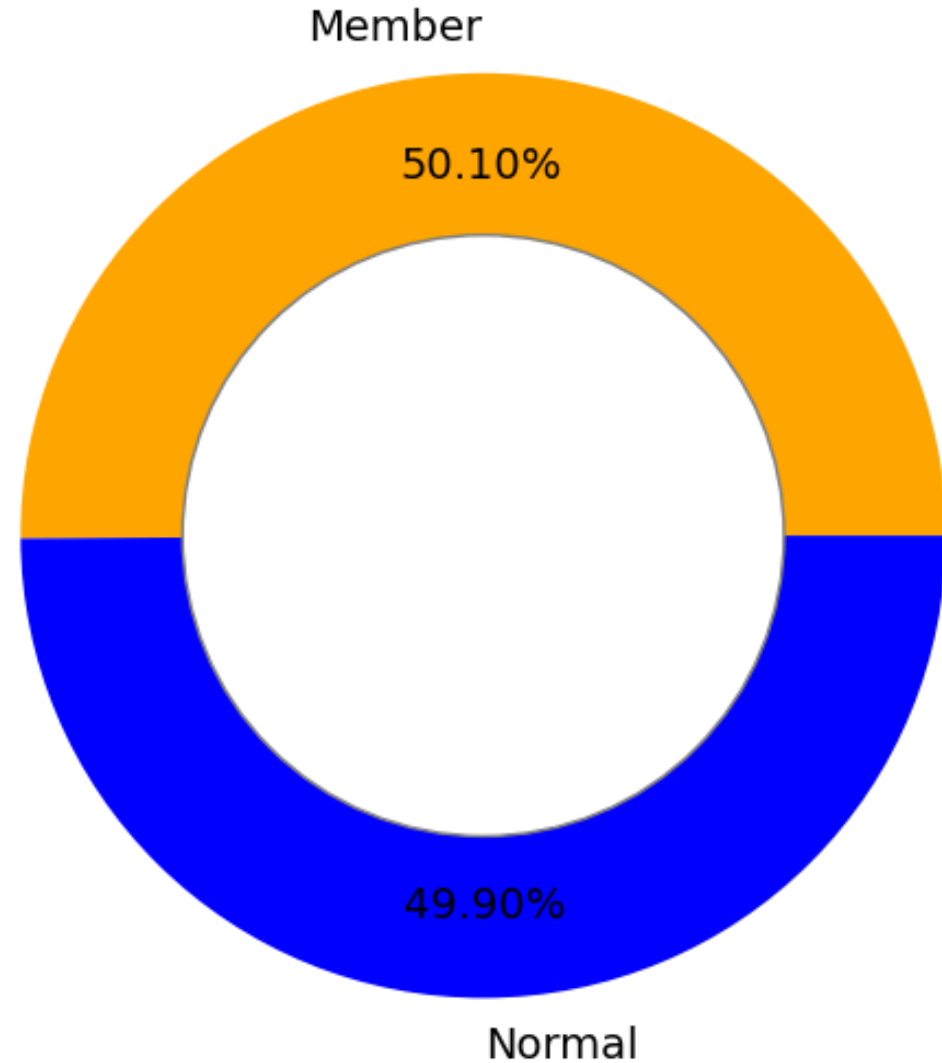
## Age Distribution

Even though patronage is somewhat similar among all age groups, The Business experienced more patronage from customers within the 45-50 years age bracket.



# DATA EXPLORATION AND ANALYTICS (Effect of Loyalty on Sales)

Even though not all the reviewed supermarket experience relatively more sales from their loyal customers as compared to the ordinary customers but overall sales (both in quantity and relative transaction values) peaked from the Loyal customers in comparison to the Ordinary customers.



# DATA VISUALIZATION



## SUPERMARKET SALES

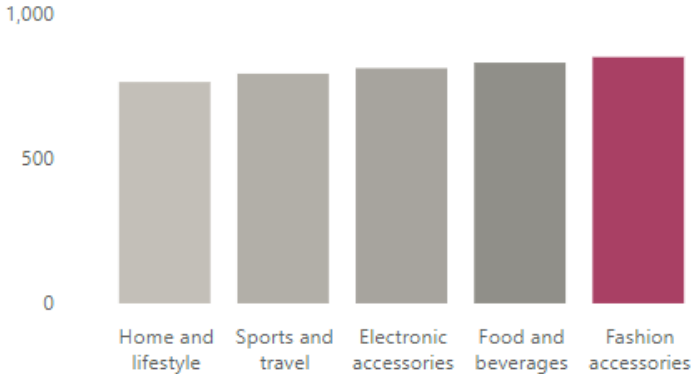
January 1, 2019 to March 30, 2019

Total Cost  
\$307.59K

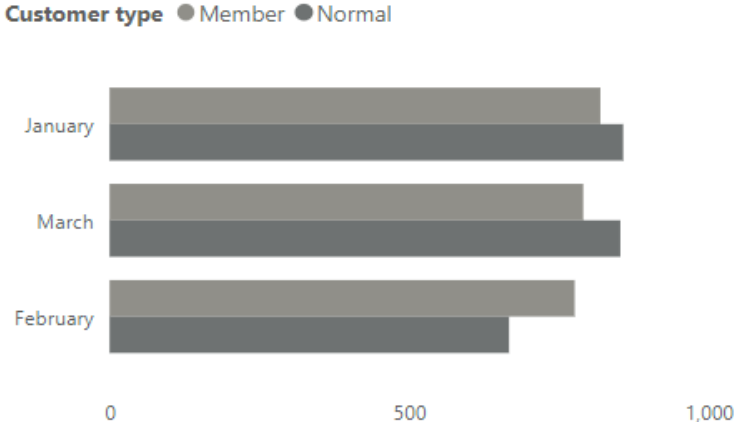
Product Line  
6

Total Profit  
\$15.38K

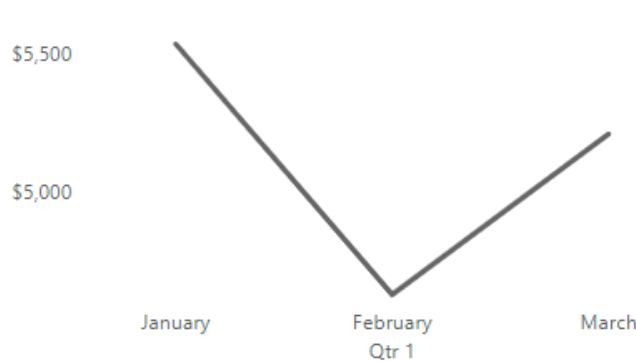
PRODUCTS PROFIT MARGIN



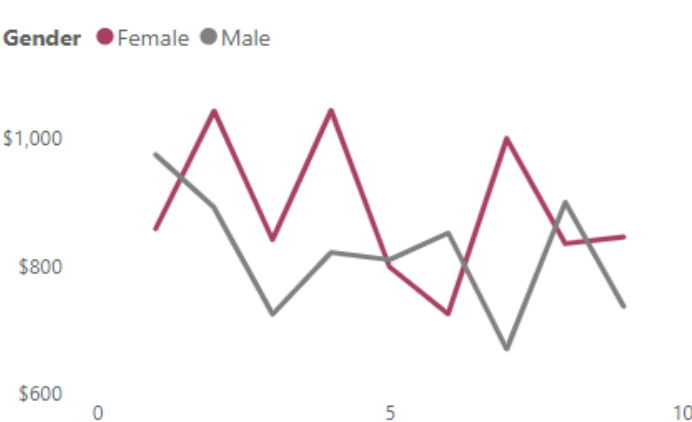
MONTHLY PROFIT MARGIN AMONG CUSTOMER TYPES



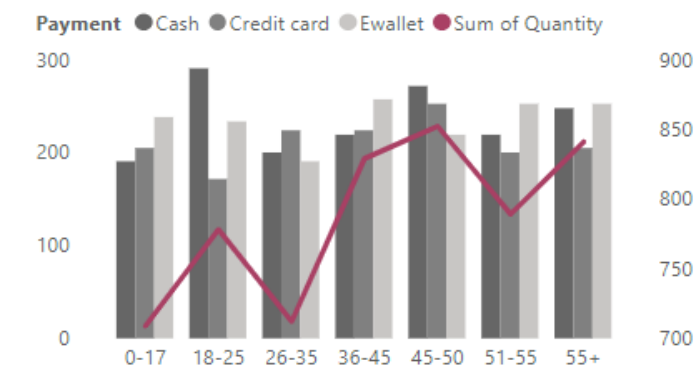
MONTHLY REVENUE GENERATION



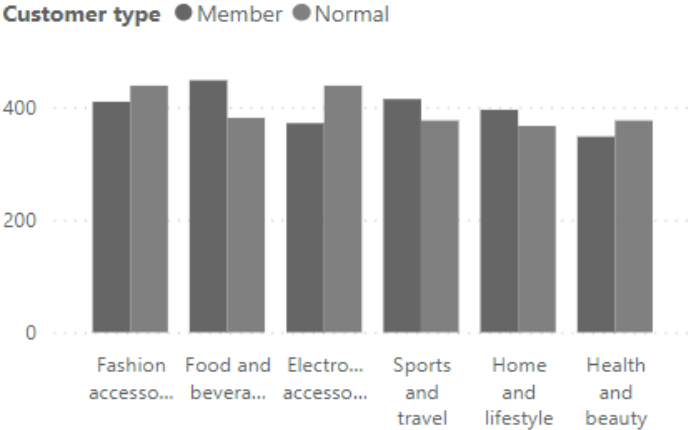
GENDER INCOME VARIATION BY YEARS SPENT IN THE CITY



PAYMENT ADOPTION RATE AMONG AGE GROUP



CUSTOMER TYPE CONTRIBUTION TO PRODUCT PROFIT



# RECOMMENDATION

Based on the analyzed data, The following recommendations are suggested:

- ☐ The Loyalty Program should further continue across the branches and special focus should be placed on branch C through slightly higher discount offers to ensure meeting up with other branches in terms of customer conversions and growth.
- ☐ More products line should be introduced across the store branches.
- ☐ Introduction of events like weekly or monthly sales and promotions to drive traffic; additionally, the supermarket could offer in-store events and workshops.





*Thank you!*