Data Analytics with IBM Cognos Analytics

Assignment-3

~Soumajit Pal

(21BCE7214)

VIT-AP

The growth of supermarkets in most populated cities is increasing and market competitions are also high. The dataset is one of the historical sales of supermarket company which has recorded in 3 different branches for 3 months data. Predictive data analytics methods are easy to apply to this dataset.

Attribute information -

Invoice id: Computer-generated sales slip invoice identification number

Branch: Branch of supercenter (3 branches are available identified by A, B and C).

City: Location of supercenters

Customer type: Type of customers, recorded by Members for customers using member cards and Normal for those without member cards.

Gender: Gender type of customer

Product line: General item categorization groups - Electronic accessories, Fashion accessories, Food and beverages, Health and beauty, Home and lifestyle, Sports and travel

Unit price: The price of each product in $

Quantity: Number of products purchased by the customer

Tax: 5% tax fee for customers buying

Total: Total price including tax

Date: Date of purchase (Record available from January 2019 to March 2019)

Time: Purchase time (10 am to 9 pm)

Payment: Payment used by the customer for the purchase (3 methods are available – Cash, Credit card and E-wallet)

COGS: Cost of goods sold

**Gross margin percentage:** Gross margin percentage

Gross income: Gross income

Rating: Customer stratification rating on their overall shopping experience (On a scale of 1 to 10)

Dataset Challenge: Upload the dataset to MySQL and integrate with Tableau , delete the unnecessary columns,, explore and visualize the dataset using Tableau
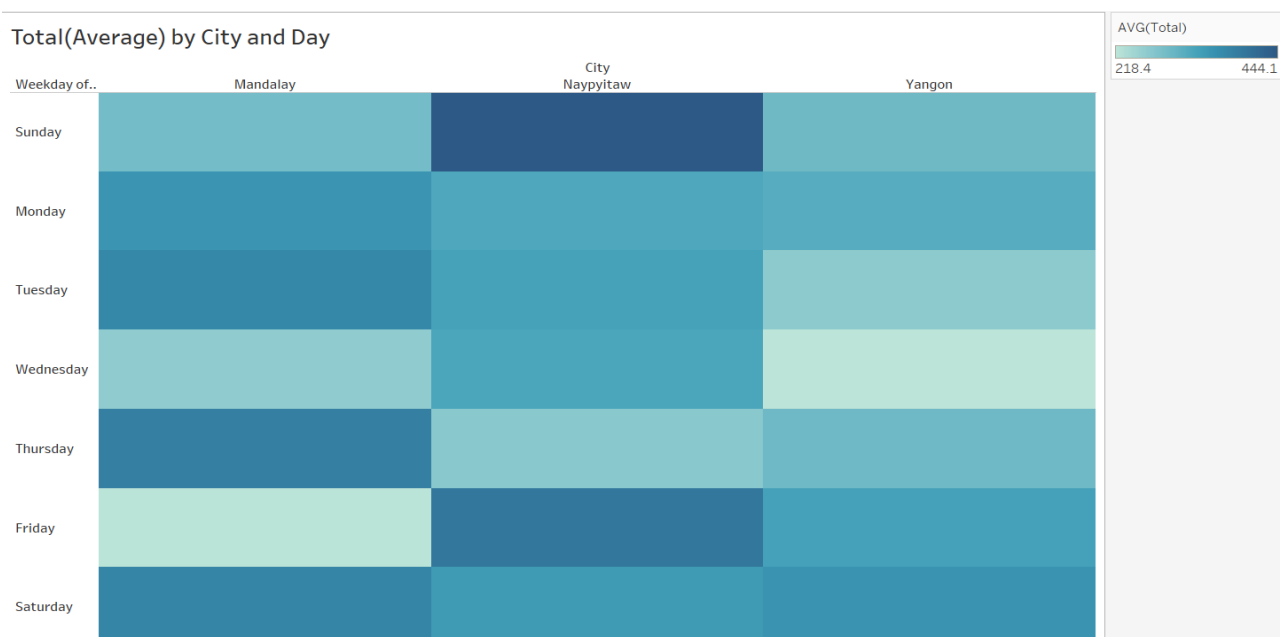
Visualization-

1) Total by Product Line(Bar Chart)-
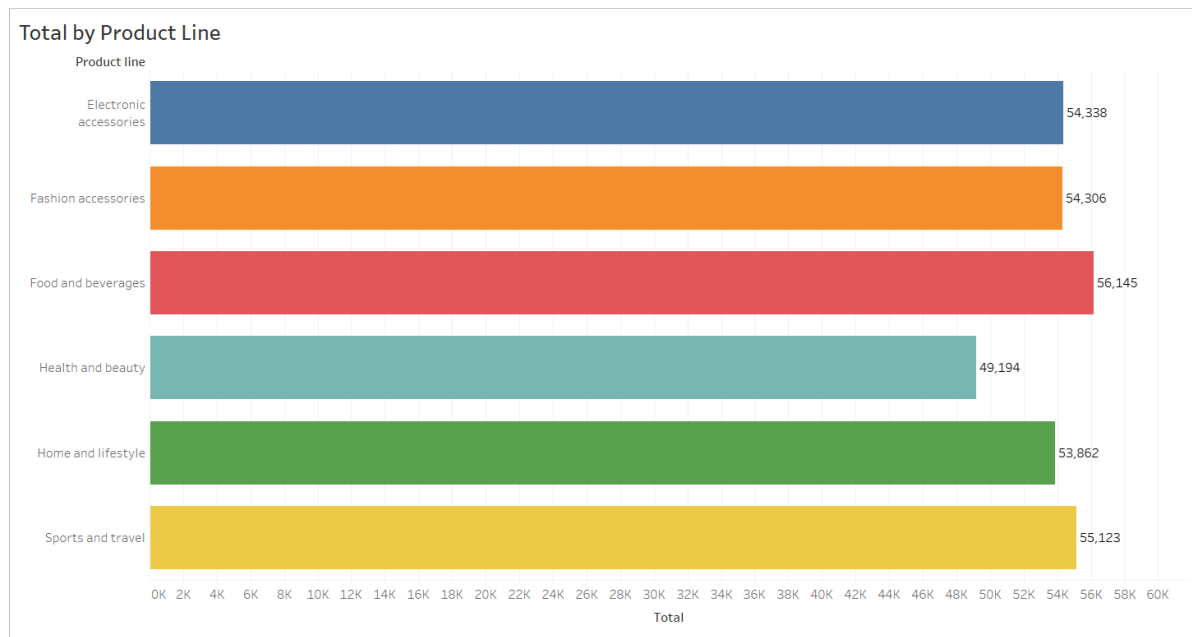
Observation-

- Food and beverages had the highest total sales with a value of $56,145.
- Health and beauty had the least total sales compared to other product lines with value of $49,194.
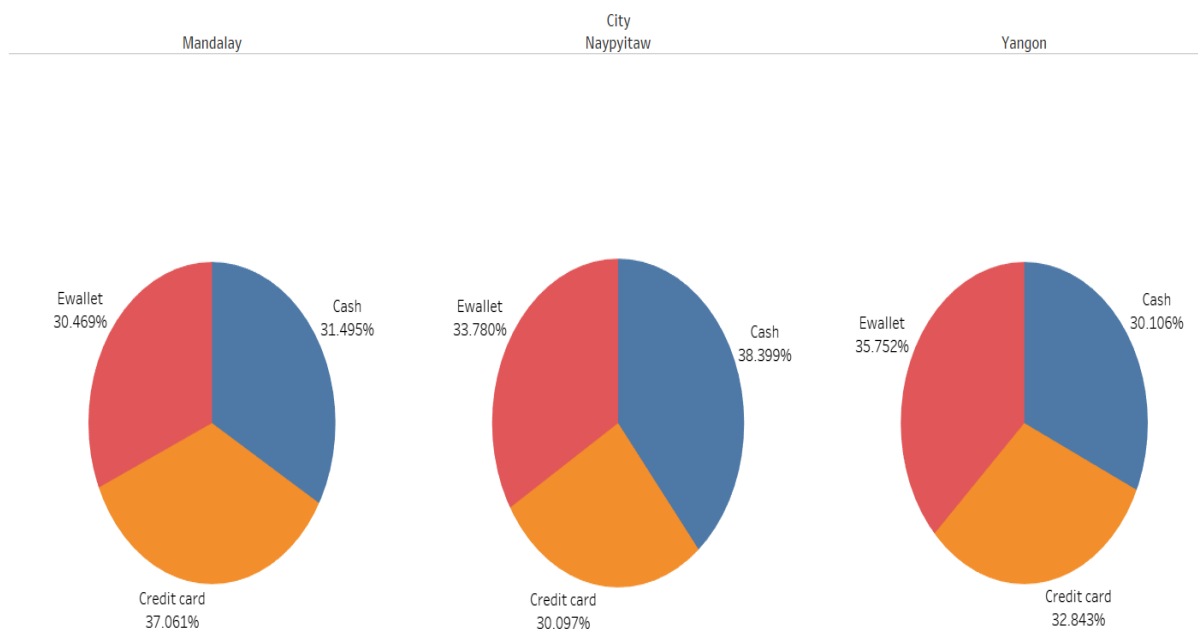
2)Total(Average) by City and Day(Heat Map)-

Observation-

- The highest average sales was observed on Sunday in Naypyitaw with a value of $444.1.
- The lowest average sales was observed on Wednesday in Yangon with a value of $218.4.

3)Total by Payment Method and City(Pie Chart)-

Total by Payment Method and City

City

| Mandalay | Naypyitaw | Yangon |

Mandalay:
- Ewallet 30.469%
- Cash 31.495%
- Credit card 37.061%

Naypyitaw:
- Ewallet 33.780%
- Cash 38.399%
- Credit card 30.097%

Yangon:
- Ewallet 35.752%
- Cash 30.106%
- Credit card 32.843%
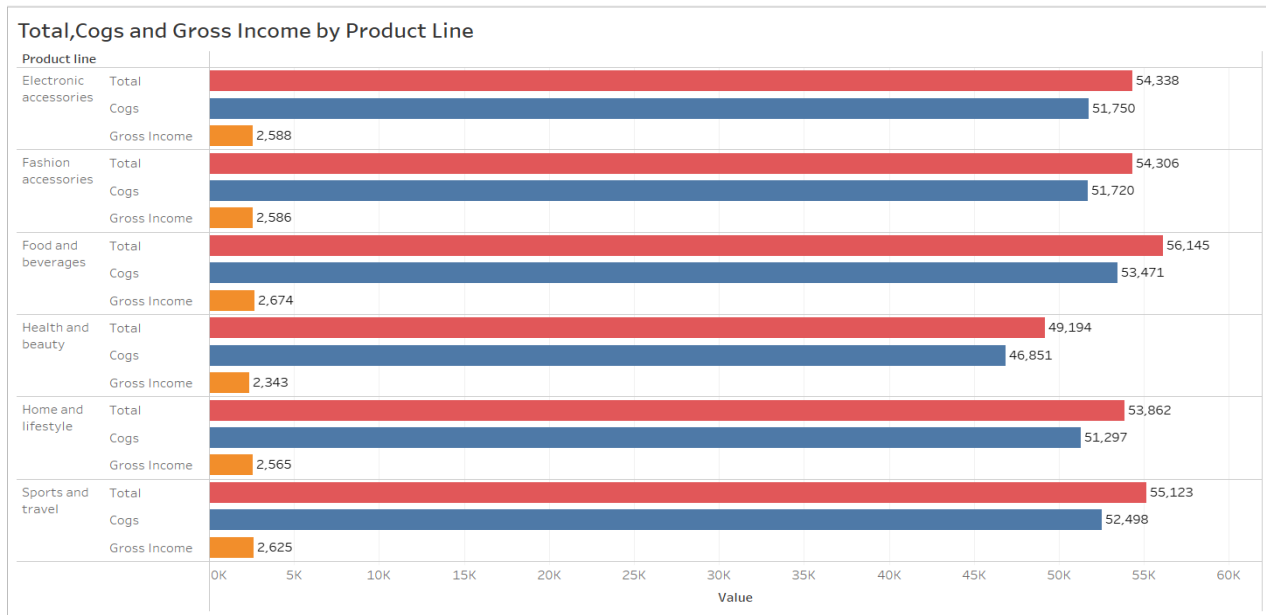
Observation-

- In Mandalay, Credit Card was used most for transaction (37.06%) while E-Wallet was least used(30.46%).
- In Naypyitaw, Cash was used most for transaction (38.39%) while Credit Card was least used(30.09%).
- In Yangon, E-Wallet was used most for transaction (35.75%) while Cash was least used(30.10%).

4) Total, Cogs and Gross Income by Product Line(Side by Side Bar Chart)-

Total,Cogs and Gross Income by Product Line

Product line		Value
Electronic accessories	Total	54,338
	Cogs	51,750
	Gross Income	2,588
Fashion accessories	Total	54,306
	Cogs	51,720
	Gross Income	2,586
Food and beverages	Total	56,145
	Cogs	53,471
	Gross Income	2,674
Health and beauty	Total	49,194
	Cogs	46,851
	Gross Income	2,343
Home and lifestyle	Total	53,862
	Cogs	51,297
	Gross Income	2,565
Sports and travel	Total	55,123
	Cogs	52,498
	Gross Income	2,625

Observation-

- Food and beverages had the highest total($56,145), cogs($53,471) and gross income($2,674) value.
- Health and beauty had the lowest total($49,194), cogs($46,851)and gross income($2,343) value.

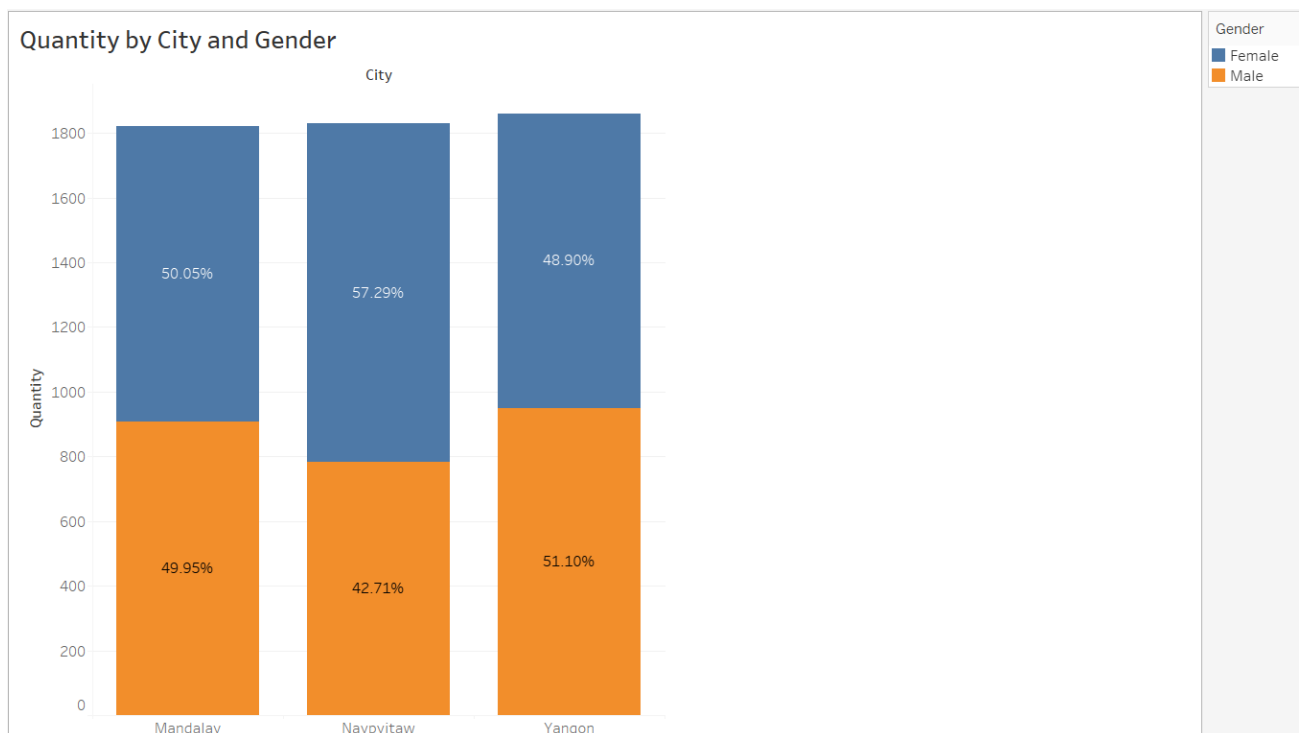## 5)Total(Average) by Customer Type and Day(Area Chart)-

Total(Average) by Customer Type and Day
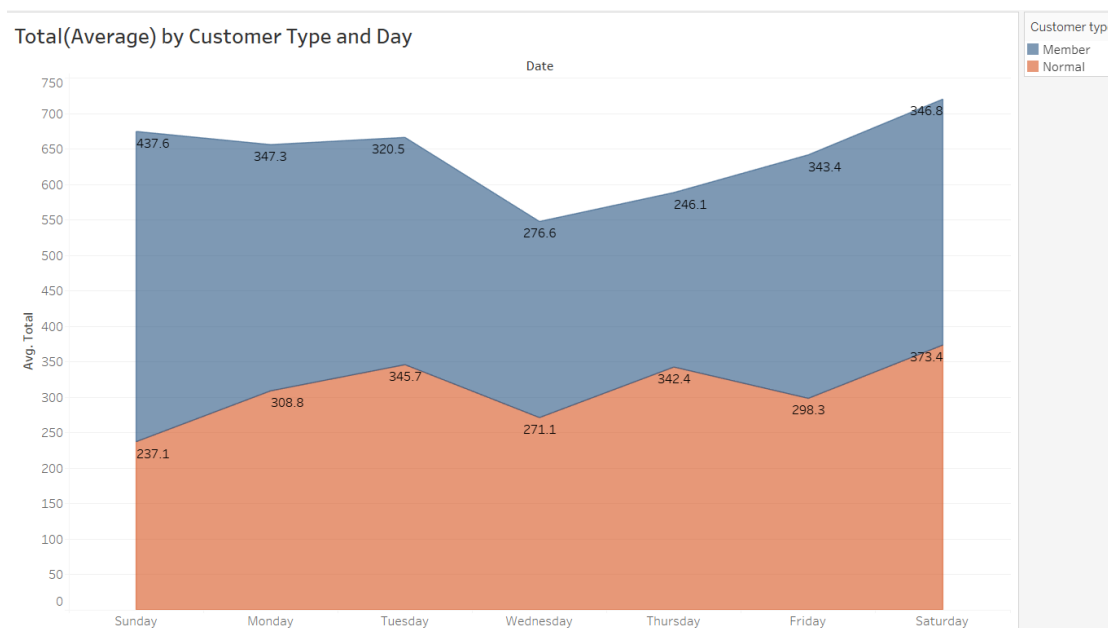
Observation-

- On an average, a member customer buys the most on Sunday($437.6) and least on Thursday($246.1).
- On an average, a normal customer buys the most on Saturday($373.4) and least on Sunday($237.1)
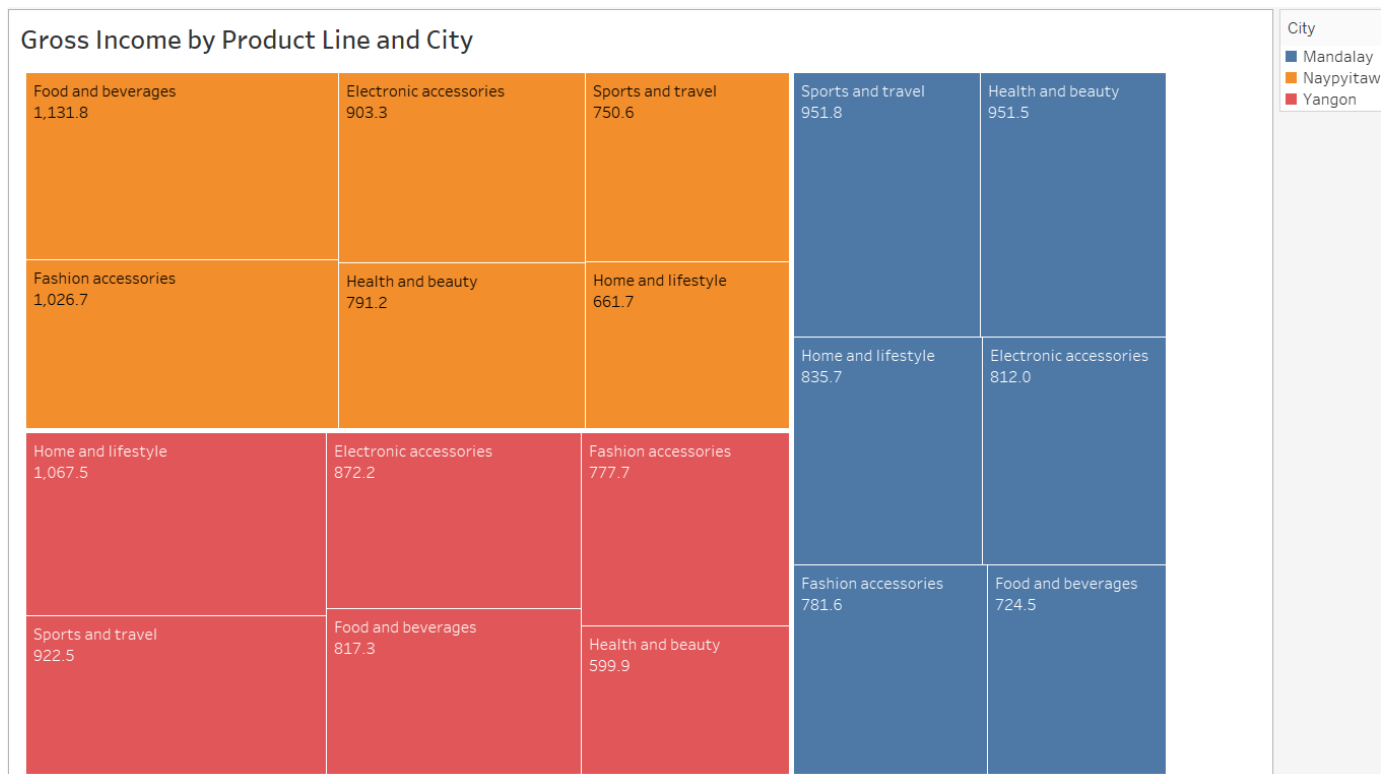
6)Quantity by City and Gender(Stacked Column Chart)-

Observation-

- The biggest difference in sales between the gender was observed in Naypyitaw with a difference of 14.58% with females being the majority.
- The smallest difference in sales between the gender was observed in Yangon with a difference of 2.2% with males being the majority.

## 7)Gross Income by Product Line and City(Tree Map)-

Gross Income by Product Line and City

Product Line	Value
Food and beverages	1,131.8
Electronic accessories	903.3
Sports and travel	750.6
Sports and travel	951.8
Health and beauty	951.5
Fashion accessories	1,026.7
Health and beauty	791.2
Home and lifestyle	661.7
Home and lifestyle	835.7
Electronic accessories	812.0
Home and lifestyle	1,067.5
Electronic accessories	872.2
Fashion accessories	777.7
Fashion accessories	781.6
Food and beverages	724.5
Sports and travel	922.5
Food and beverages	817.3
Health and beauty	599.9

City
- Mandalay
- Naypyitaw
- Yangon

Observation-

- In Naypyitaw, the highest gross income was in Food and Beverages($1,131.8) while the least was in Home and Lifestyle($661.7).
- In Yangon, the highest gross income was in Home and Lifestyle($1,067.5) while the least was in Health and Beauty($599.5).
- In Mandalay, the highest gross income was in Sports and Travel($951.8) while the least was in Food and Beverages($724.5).

8)Total by Time(Line Chart)-

Total by Time
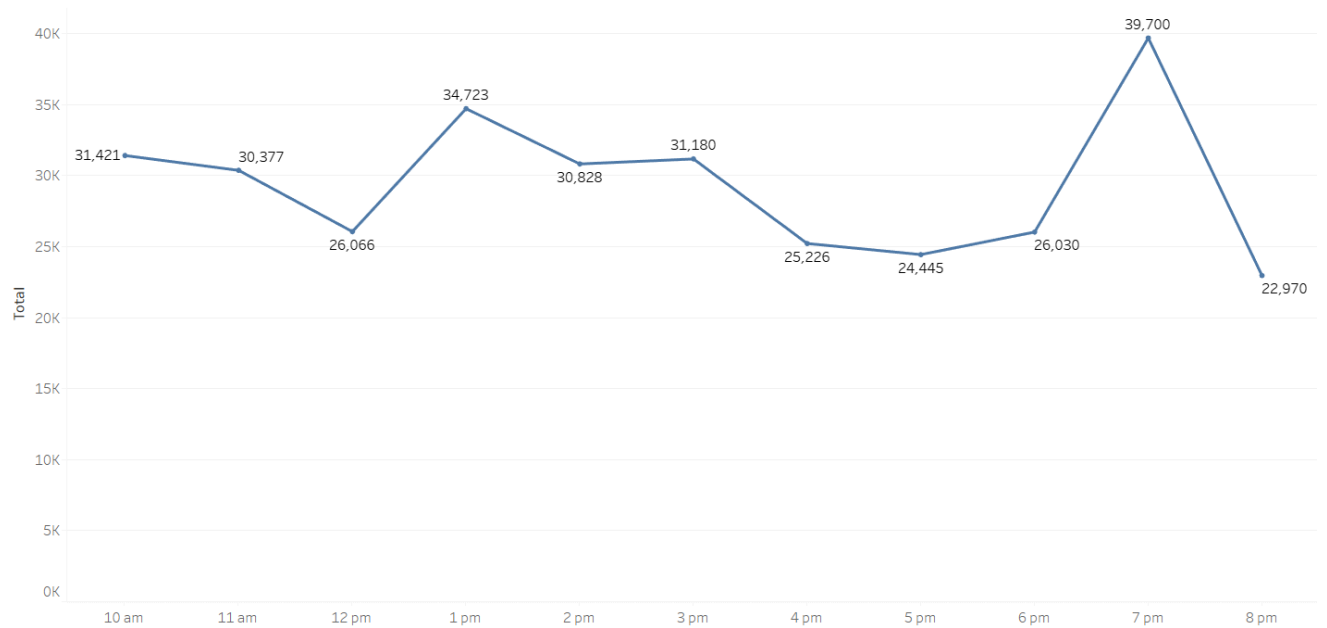
Observation-

- The maximum sales was done between 7pm to 8pm($39,700).
- The minimum sales was done between 8pm to 9pm($22,970)