

ASSIGNMENT-3

IBM COGNOS ANALYTICS

Name: G.Lakshman Kumar

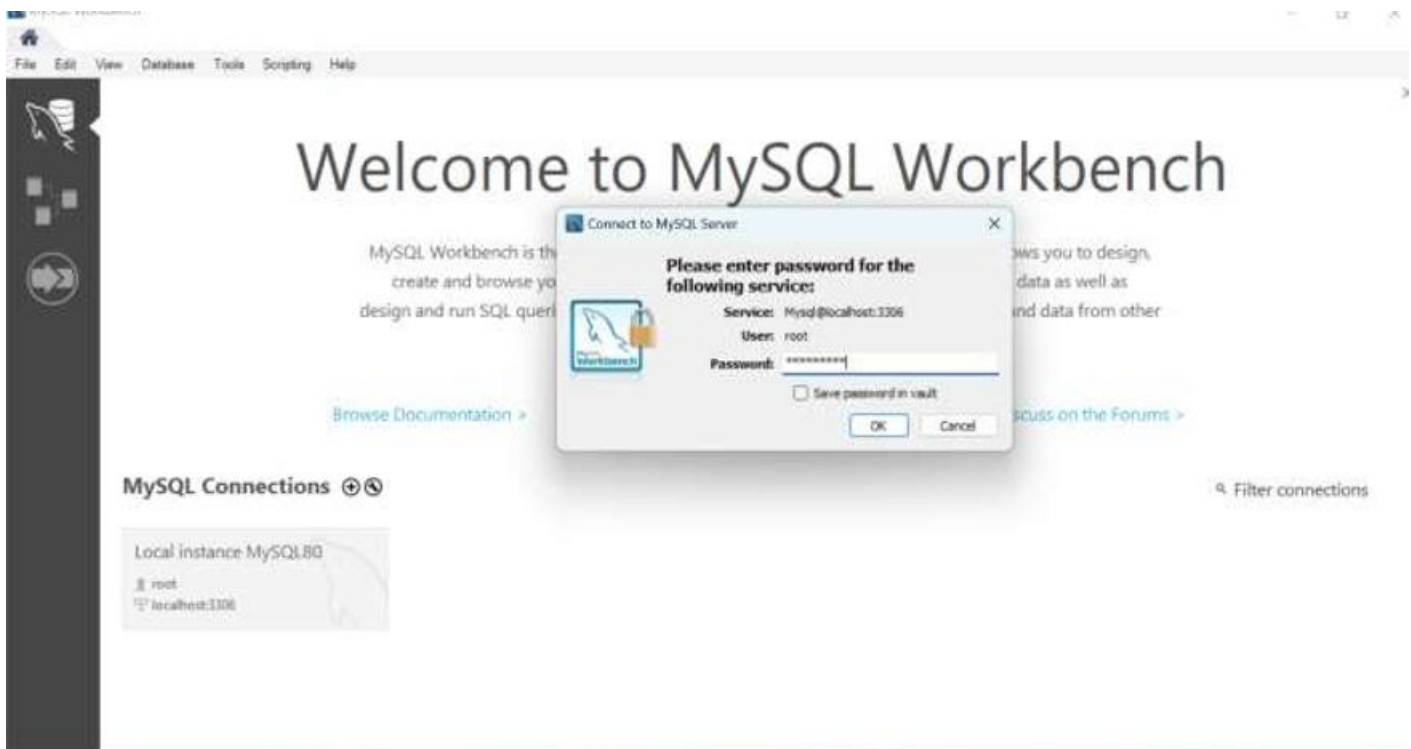
Reg no:21BCE7065

Email: lakshman.21bce7065@vitapstudent.ac.in

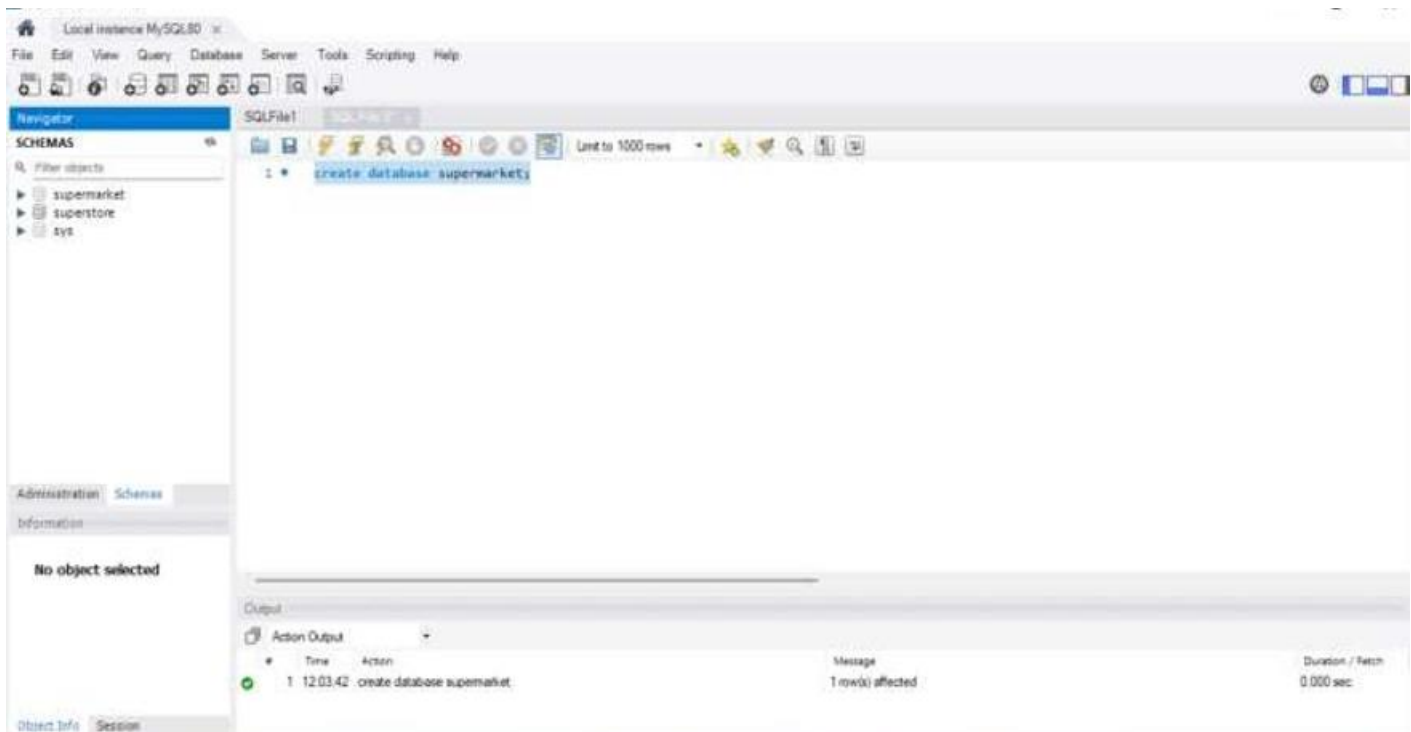
Upload the dataset to MySQL and integrate with Tableau, delete the unnecessary columns, explore and visualize the dataset using Tableau.

➤ **MySQL Integration:**

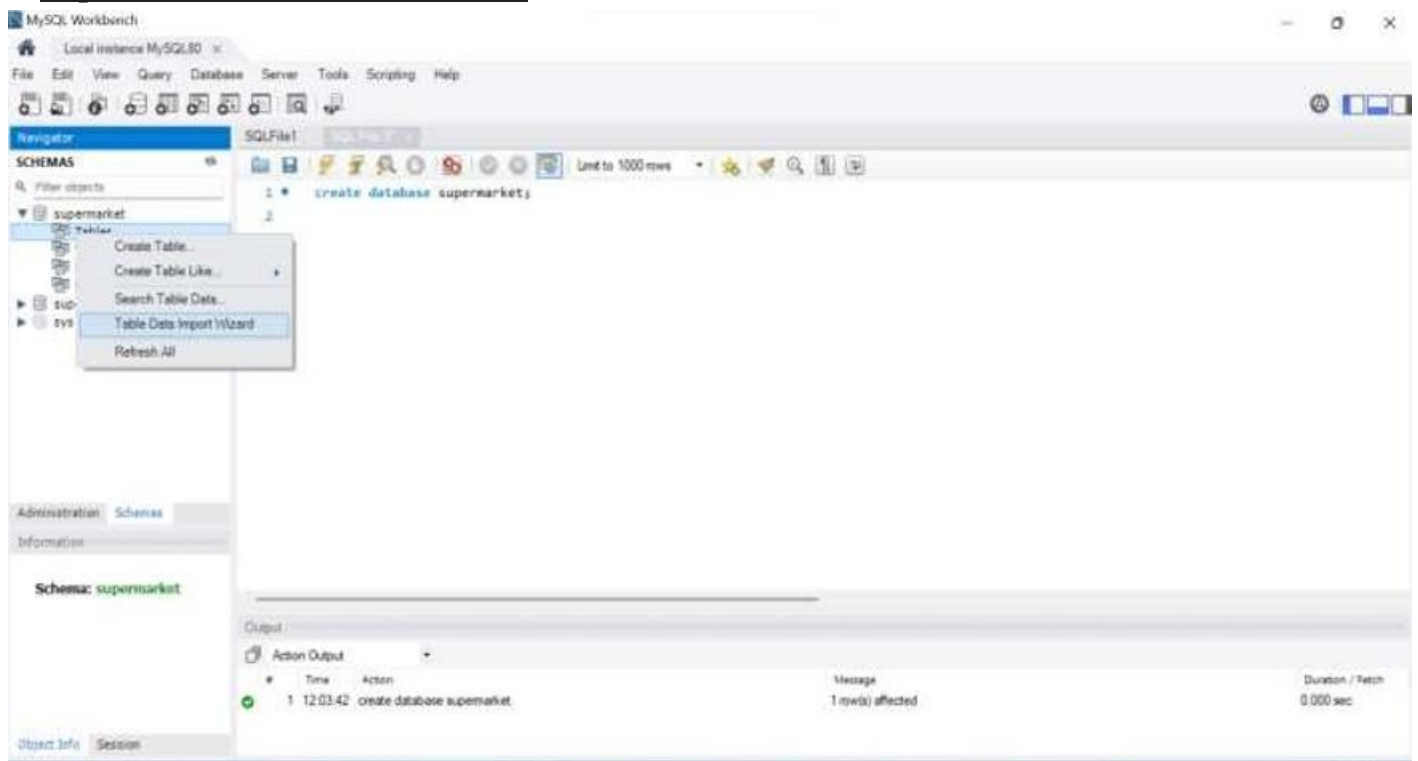
1.open MySQL Workbench:

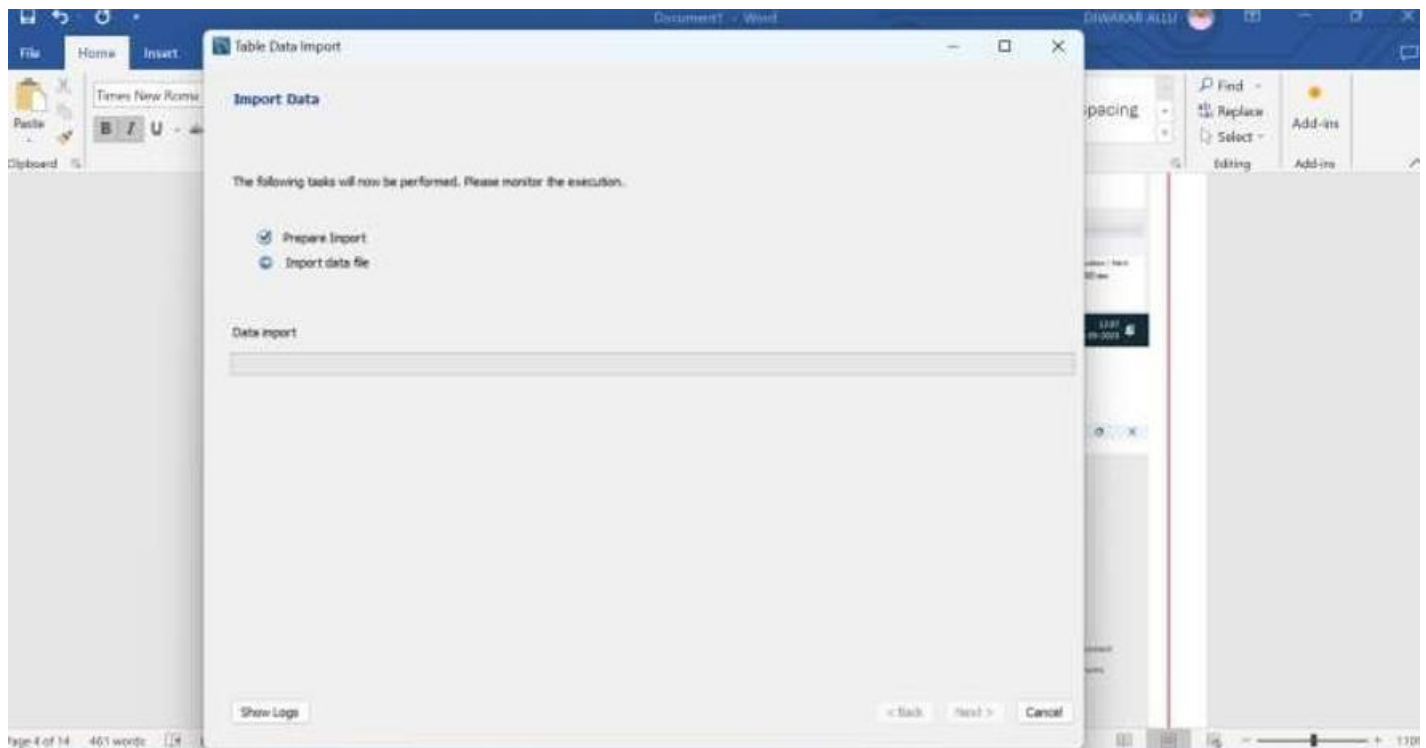
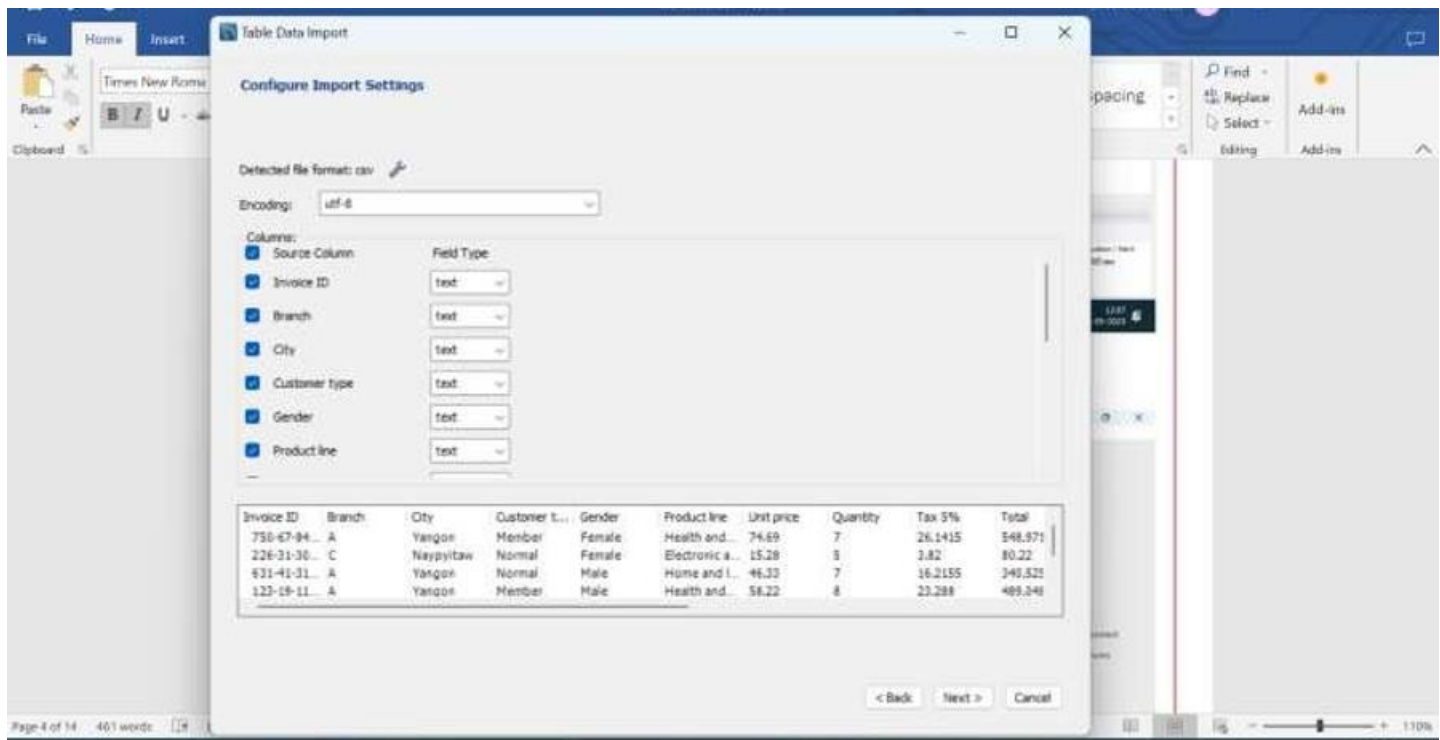


2. create a schema:



3. Import the data from local data set:





4. preprocess the data using SQL commands:

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree with a 'supermarket' database selected. The main window shows the 'SQL File 1' editor with the following SQL commands:

```
1 * create database supermarket;
2
3 * use supermarket;
4 * select * from supermarketsales;
```

The 'Result Grid' displays the output of the 'select * from supermarketsales;' query, showing a table with 15 columns: Invoice ID, Branch, City, Customer type, Gender, Product line, Unit price, Quantity, Tax 5%, Total, Date, Time, Payment, cogs, and gross profit. The table contains 5 rows of data.

The 'Table: supermarketsales' section on the left lists the columns and their data types:

Column	Type
Invoice ID	text
Branch	text
City	text
Customer type	text
Gender	text
Product line	text

The 'Output' section shows the execution log:

Time	Action	Message	Duration / Fetch
12:18:12	use supermarket	0 row(s) affected	0.000 sec
12:18:21	select * from supermarketsales LIMIT 0, 1000	1000 row(s) returned	0.000 sec / 0.015 sec

The screenshot shows the MySQL Workbench interface with the 'SQL File 1' editor containing the following SQL queries:

```
12 * select count(distinct('Branch')) from supermarketsales;
13
14
15 /* Total no. of Transactions in different city */
16 * select City, count('Invoice ID') as Total_Transactions
17 from supermarketsales
18 group by City
19 order by Total_Transactions;
20
```

The 'Result Grid' displays the output of the first query, showing a table with 2 columns: City and Total_Transactions. The table contains 3 rows of data:

City	Total_Transactions
Naypyitaw	328
Mandalay	332
Yangon	340

The 'Result 11' section shows the execution log:

Time	Action	Message	Duration / Fetch
12:16:34	select City, count('Invoice ID') as Total_order from supermarketsales group by City or...	3 row(s) returned	0.000 sec / 0.000 sec
12:17:21	select City, count('Invoice ID') as Total_Transactions from supermarketsales group b...	3 row(s) returned	0.016 sec / 0.000 sec

Local instance MySQL80

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Information

Columns:

Invoice ID text

Branch text

City text

Customer type text

Gender text

Product line text

Unit price double

Quantity int

Tax 5% double

Object Info Settings

SQLFile1 SupermarketSalesMySqlDesign Administration - Server Status supermarket supermarketsales

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20 /* Roth extraction from date*/

21 ALTER TABLE supermarketsales

22 ADD COLUMN Month INT;

23

24 UPDATE supermarketsales

25 SET Month = MONTH(Date);

26

27 ALTER TABLE supermarketsales

28 DROP COLUMN 'Invoice ID';

29

30

31

Result Grid

Filter Rows

Export: Wrap Cell Contents Patch rows

Branch	City	gross income	cogs
A	Yangon	8.2005	164.01
B	Mandalay	4.03	80.6
C	Naypyitaw	21.51	430.2
B	Mandalay	13.197	263.94
B	Mandalay	3.32	66.4
A	Yangon	8.64	172.8
A	Yangon	13.2945	265.89
A	Yangon	21.036	420.72

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Read Only

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Columns

Row ID

Order ID

Order Date

Ship Date

Administration Schemas

Information

Columns:

Payment text

cogs double

gross margin double

percentage double

gross income double

Rating double

Object Info Settings

SQLFile1 SupermarketSalesMySqlDesign Administration - Server Status supermarket supermarketsales

25 SET Month = MONTH(Date);

26

27 ALTER TABLE supermarketsales

28 DROP COLUMN 'Invoice ID';

29

30 alter table supermarketsales add profit int;

31 update supermarketsales set profit = ("gross income" - "cogs");

32

33 alter table supermarketsales add profitMargin int;

34 update supermarketsales set profitMargin = ("profit" / "Total");

35

Result Grid

Filter Rows

Export: Wrap Cell Contents Patch rows

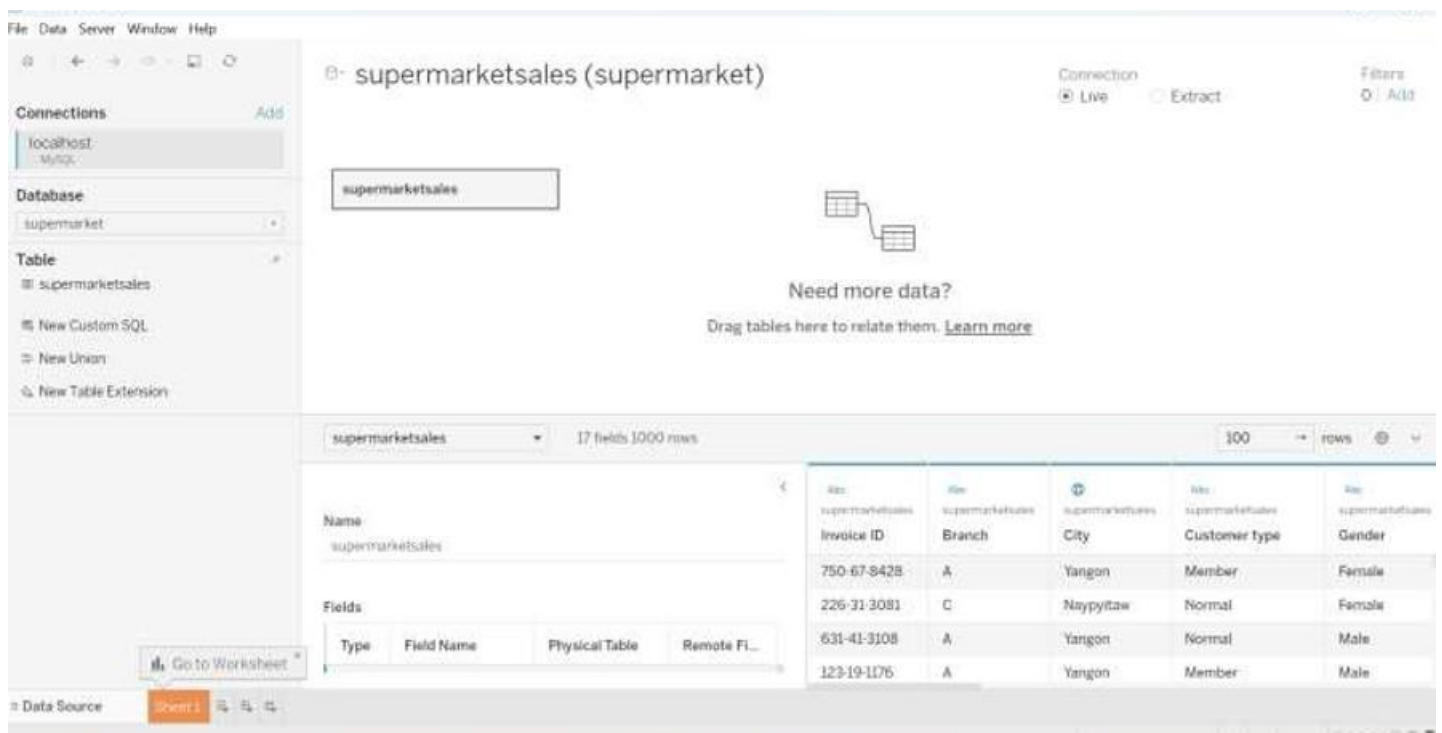
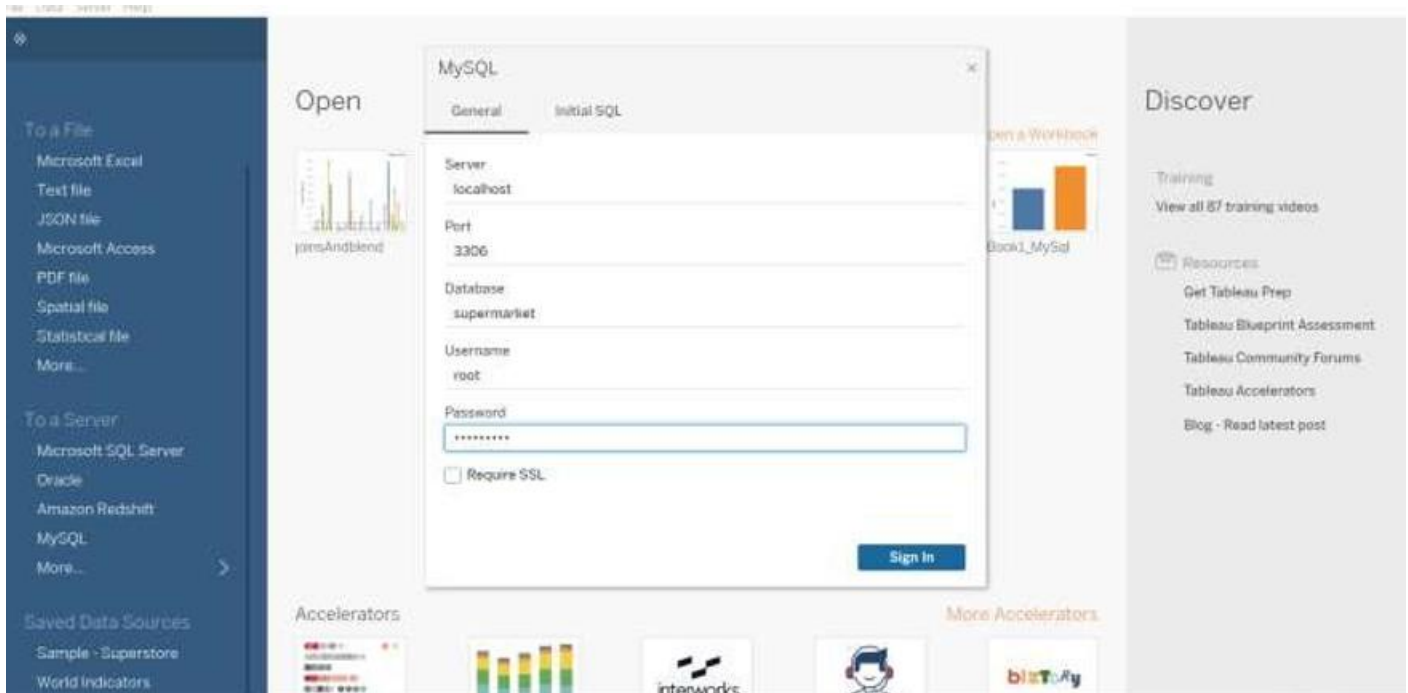
id	City	Customer type	Gender	Product line	Unit price	Quantity	Tax 5%	Total	Date	Time	Payment	cogs	gross margin percentage
1	Yangon	Member	Female	health and beauty	74.69	7	26.1415	546.9715	1/5/2019	13:08	Ewallet	522.83	4.761904762
2	Naypyitaw	Normal	Female	Electronic accessories	15.28	5	3.82	80.22	3/8/2019	10:29	Cash	76.4	4.761904762
3	Yangon	Normal	Male	Home and lifestyle	46.23	7	16.2155	340.5255	3/3/2019	13:23	Credit card	324.31	4.761904762
4	Yangon	Member	Male	Health and beauty	58.22	8	23.288	489.048	1/27/2019	20:33	Ewallet	465.76	4.761904762
5	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	2/8/2019	10:37	Ewallet	604.17	4.761904762
6	Naypyitaw	Normal	Male	Electronic accessories	85.39	7	29.8965	627.6165	3/25/2019	18:30	Ewallet	597.73	4.761904762
7	Yangon	Member	Female	Electronic accessories	68.84	6	20.632	433.692	2/23/2019	14:36	Ewallet	413.04	4.761904762
8	Naypyitaw	Normal	Female	Home and lifestyle	73.56	10	36.78	772.38	2/24/2019	11:38	Ewallet	735.6	4.761904762
9	Yangon	Member	Female	Health and beauty	36.26	2	3.626	76.146	1/10/2019	17:15	Credit card	72.52	4.761904762
10	Mandalay	Member	Female	Food and beverages	54.84	3	8.226	172.746	2/20/2019	13:27	Credit card	164.52	4.761904762

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Read Only

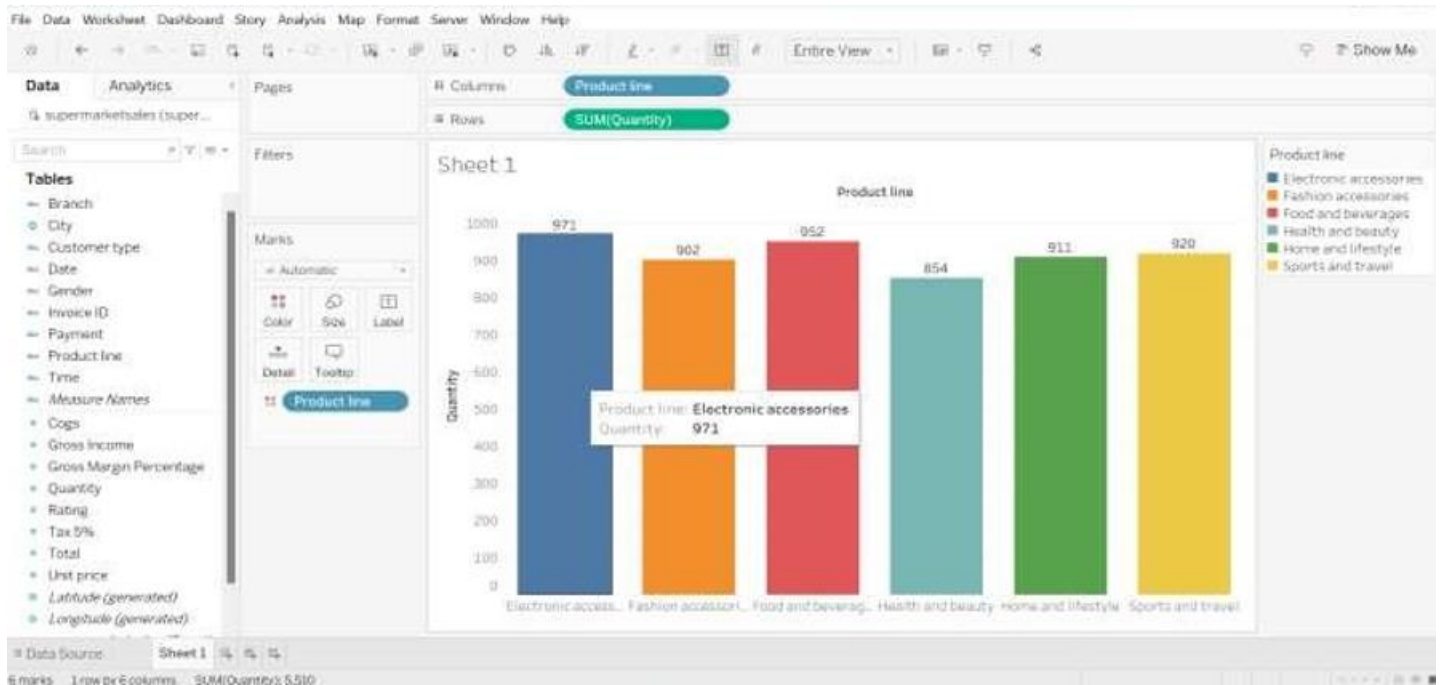
➤ Tableau Integration:

select MySQL in Connect to a Server option

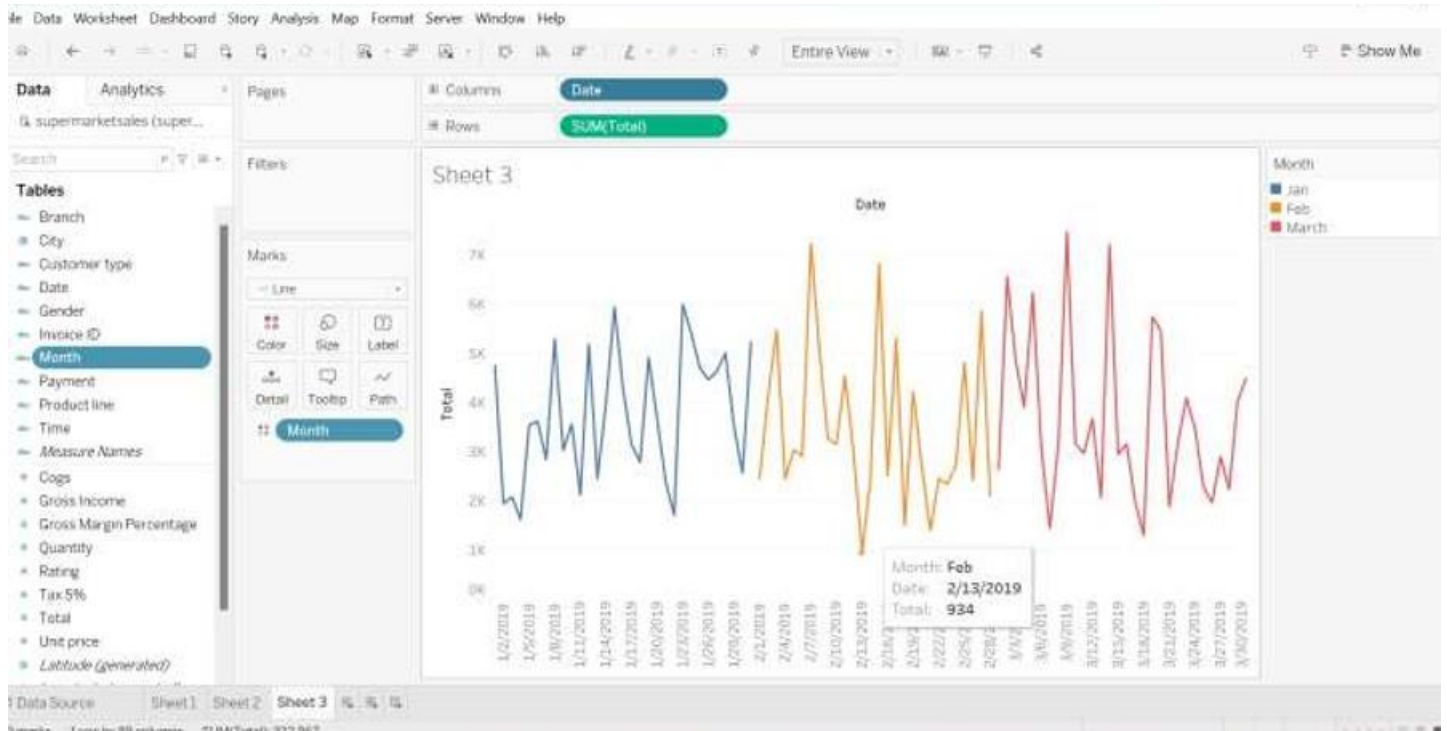


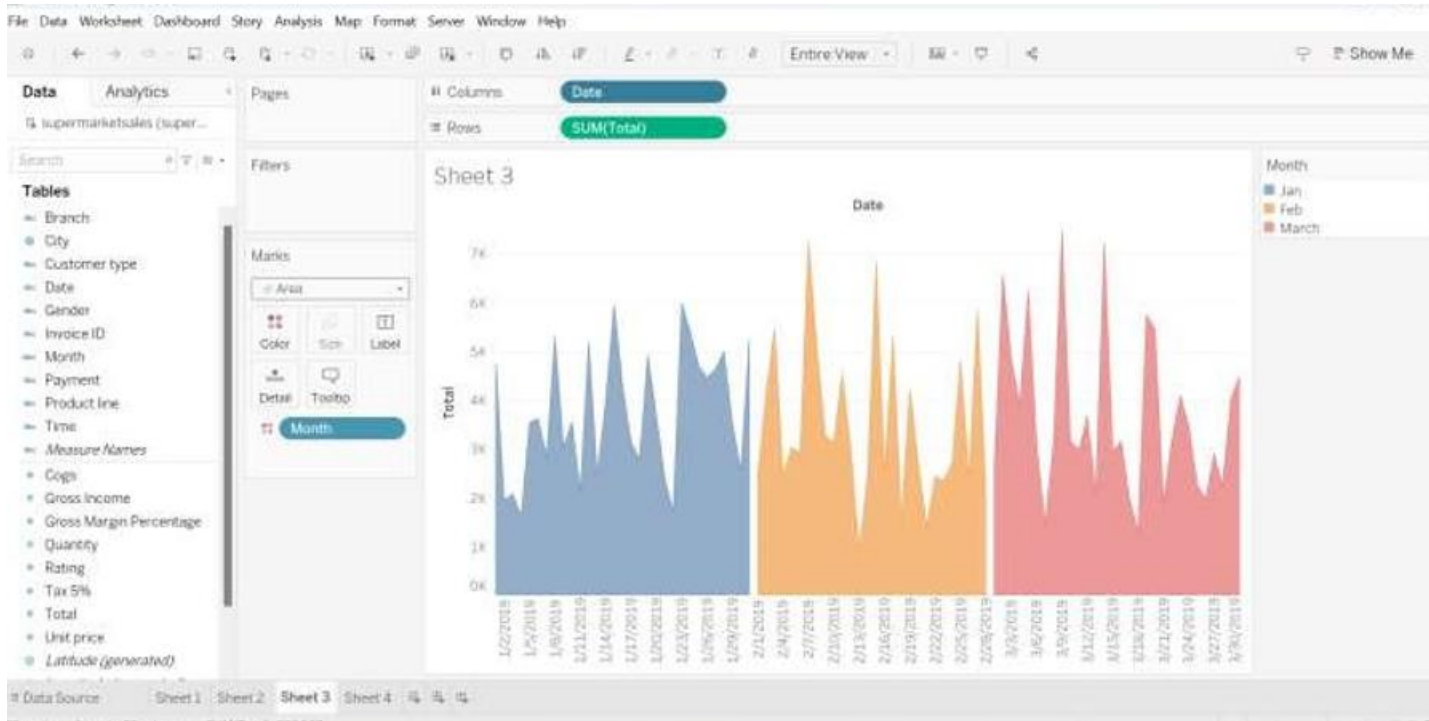
➤ Data Exploration and Visualization:

1. Which product categories are the most popular among customers and Which product categories generate the highest revenue?

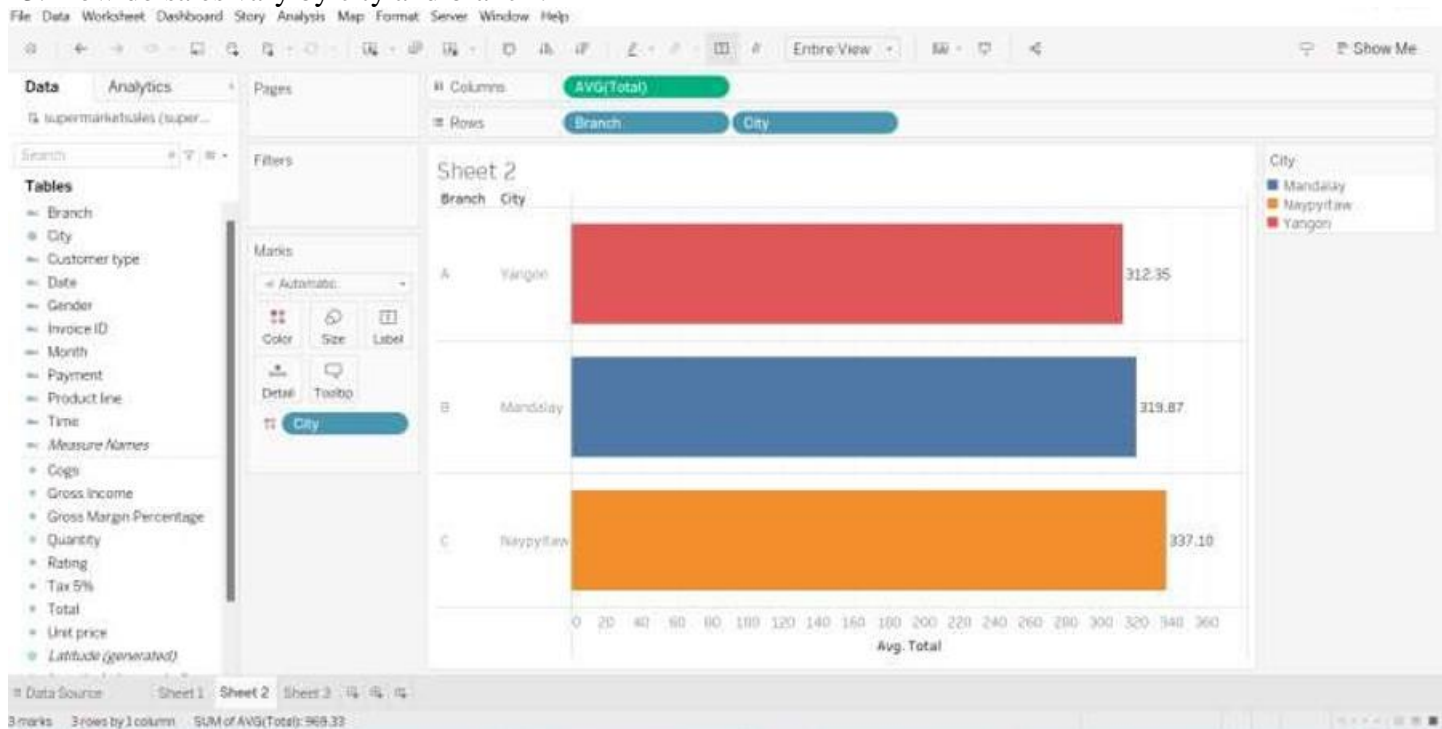


2. What are the sales trends over time, and are there any notable patterns or spikes?

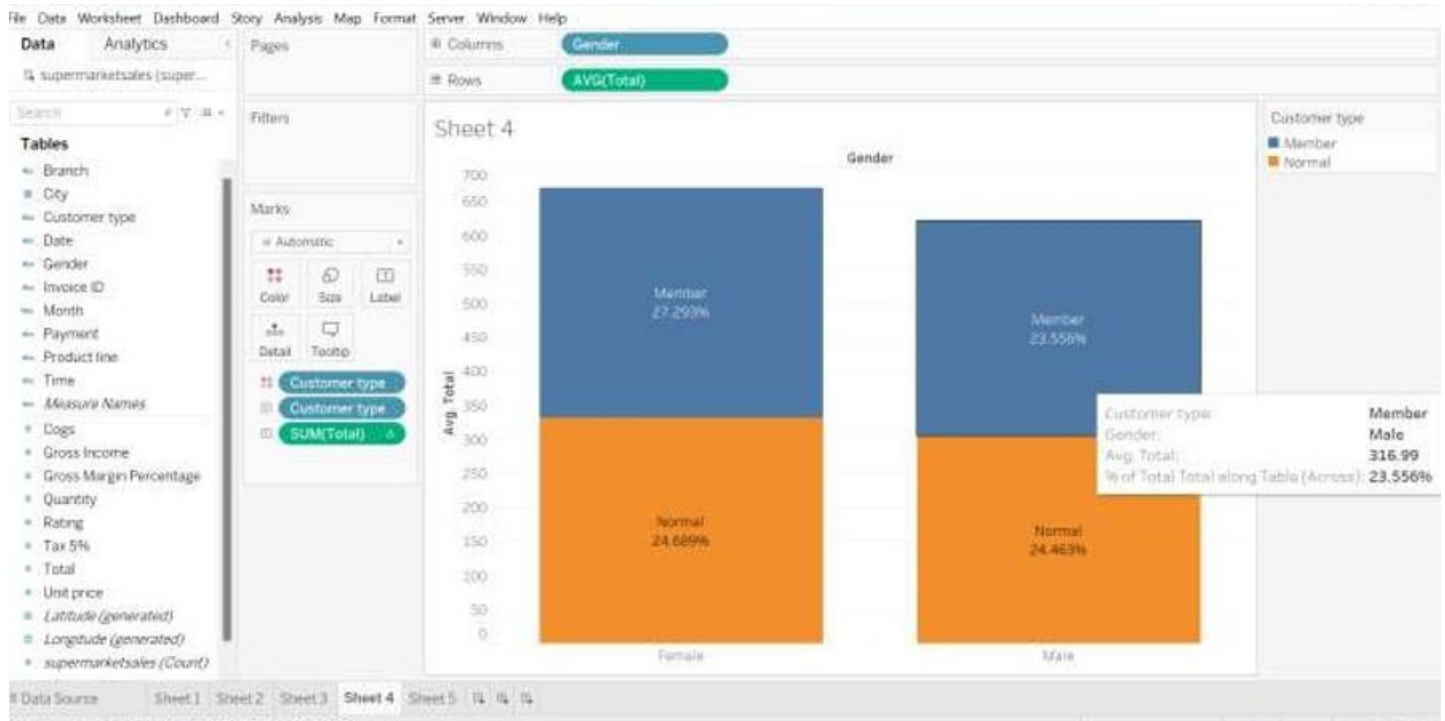




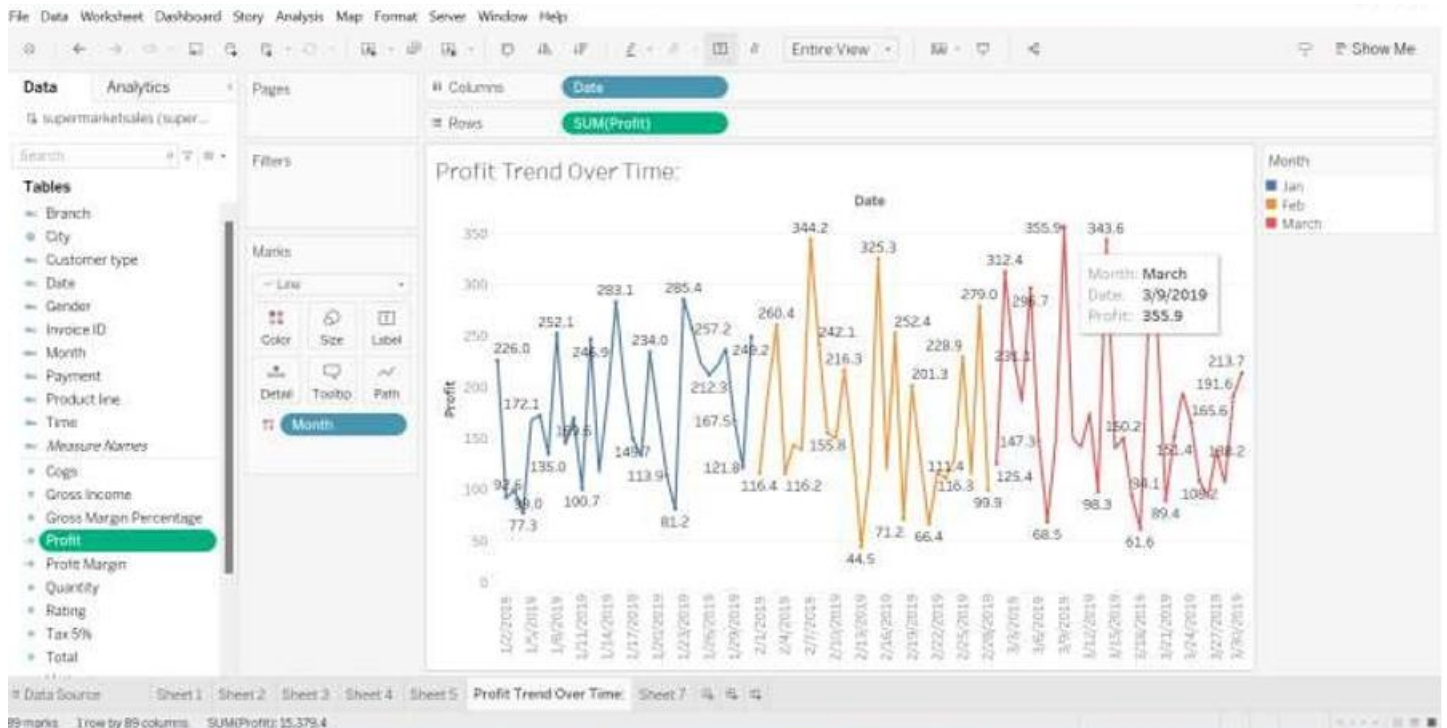
3. How do sales vary by city and branch?



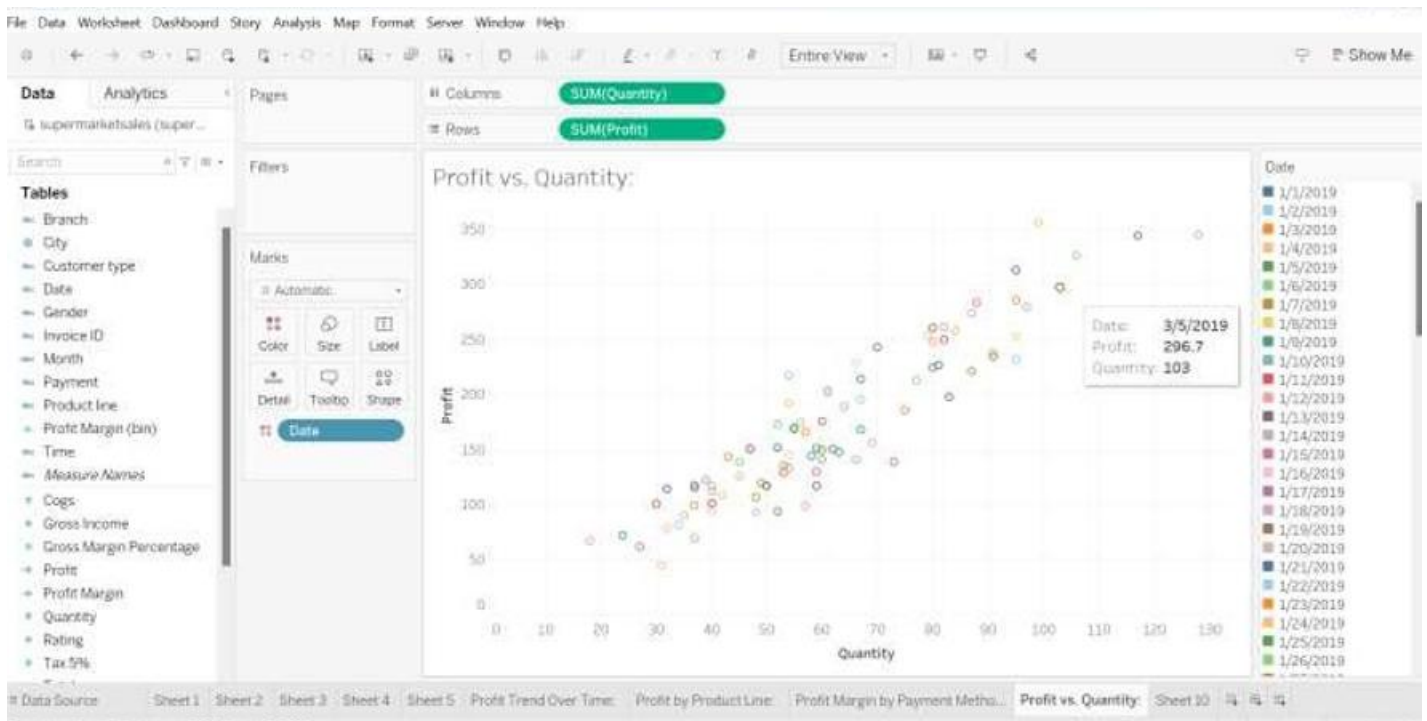
4. Compare how member and non-member customers contribute to total sales, broken down by gender.



5. **Profit Tend Over Time:** To Analyze how profit varies over time and identify trends.



Profit vs. Quantity: To Explore the relationship between the quantity of products sold and profit.



➤ Results

The project results in a streamlined dataset optimized for analysis. Through Tableau visualizations, we gain insights into sales trends across branches, customer segmentation, popular product categories, and more. These insights can inform strategic decisions, marketing efforts, and inventory management to enhance the supermarket's competitive edge in the market.

➤ References

https://help.tableau.com/current/pro/desktop/en-us/buildexamples_scatter.html

