# Sales Performance Analysis of Walmart Stores Using Advanced MySQL Techniques

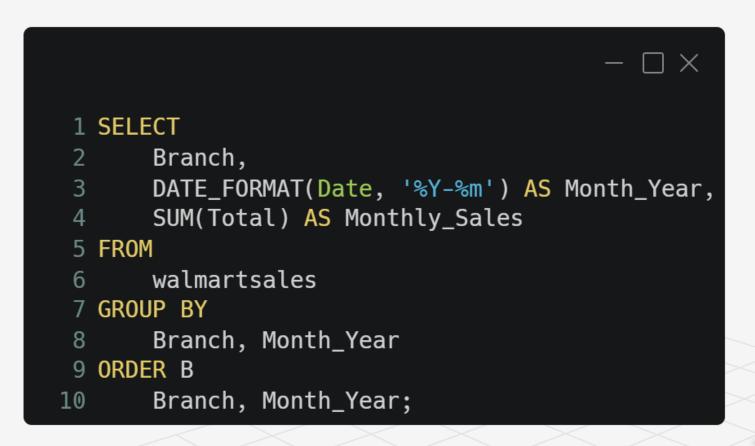


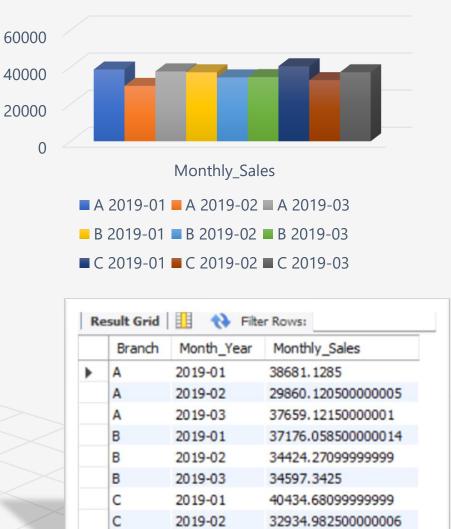




Walmart wants to identify which branch has exhibited the highest sales growth over time. Analyze the total sales for each branch and compare the growth rate across months to find the top performer.

### Step 1: Aggregate Monthly Sales by Branch





2019-03

37199.043

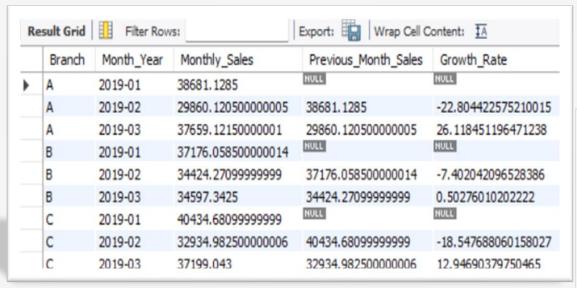
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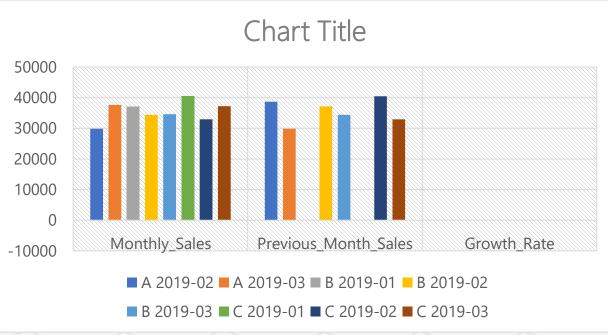
#### Step 2: Calculate Monthly Sales Growth Rate.

```
1 WITH Monthly_Sales AS (
      SELECT
          Branch,
          DATE_FORMAT(Date, '%Y-%m') AS Month_Year,
          SUM(Total) AS Monthly_Sales
      FROM
          walmartsales
      GROUP BY
           Branch, Month_Year
10)
11 SELECT
12
      Branch,
13
      Month_Year,
      Monthly_Sales,
14
15
      LAG(Monthly_Sales) OVER (PARTITION BY Branch ORDER BY Month_Year) AS Previous_Month_Sales,
       (Monthly_Sales - LAG(Monthly_Sales) OVER (PARTITION BY Branch ORDER BY Month_Year)) /
  LAG(Monthly_Sales) OVER (PARTITION BY Branch ORDER BY Month_Year) * 100 AS Growth_Rate
17 FROM
      Monthly_Sales;
18
```

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#### Step 2: Calculate Monthly Sales Growth Rate.

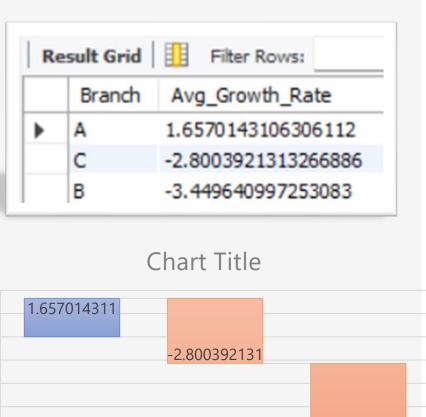




Walmart wants to identify which branch has exhibited the highest sales growth over time. Analyze the total sales for each branch and compare the growth rate across months to find the top performer.

Step 3: Identify the Top Branch by Growth Rate.





■ Increase ■ Decrease ■ Total

-3.449640997

B

### Task 2: Finding the Most Profitable Product Line for Each Branch

Walmart needs to determine which product line contributes the highest profit to each branch. The profit margin should be calculated based on the difference between the gross income and cost of goods sold.

Step 1:Calculate Profit for Each Product Line. Result Grid Filter Rows: Expor Branch Product line Total\_Profit Health and beauty -11397.967000000002 Fashion accessories -14777.031500000003 Food and beverages -15528.519500000002 Electronic accessories -16572,6265 Sports and travel -17527.680500000006 Home and lifestyle -20282, 2245 1 SELECT Food and beverages -13765.851499999995 Fashion accessories -14850.143500000002 Branch, Electronic accessories -15427, 4965 `Product line`, Home and lifestyle -15877.815499999995 SUM(`gross income` - cogs) AS Total\_Profit **Chart Title** 5 FROM walmartsales -5000 **GROUP BY** -10000 Branch, `Product line` -150009 ORDER BY -20000 Branch, Total\_Profit DESC; 10 -25000 A Health and beauty A Fashion accessories ■ A Food and beverages ■ A Electronic accessories ■ A Sports and travel ■ A Home and lifestyle ■ B Food and beverages ■ B Fashion accessories ■ B Electronic accessories

■ B Home and lifestyle

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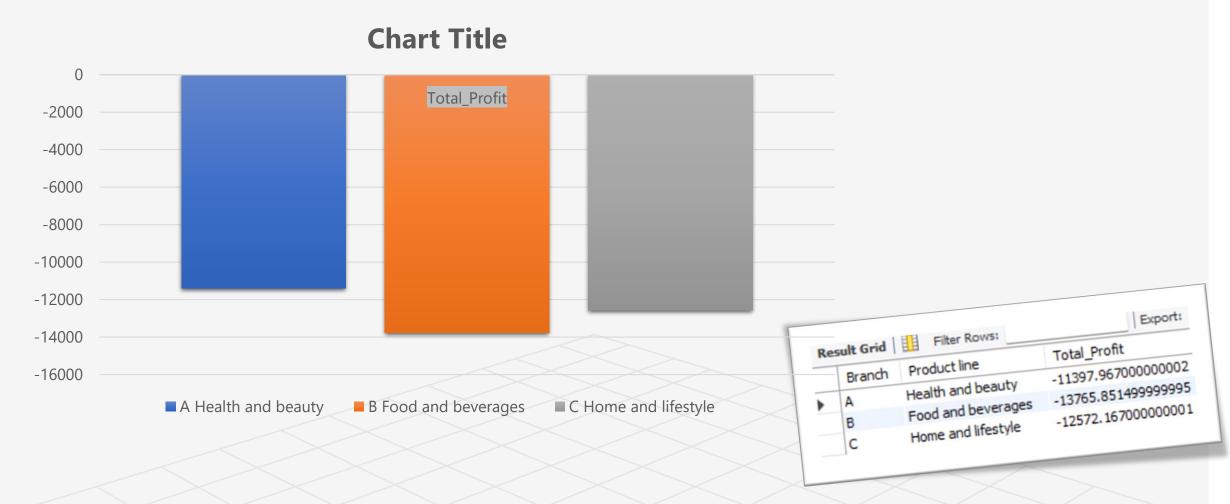
#### Step 2: Identify the Most Profitable Product Line for Each Branch.

```
-\square \times
 1 WITH Profit_Calculation AS (
       SELECT
           Branch,
           `Product line`,
           SUM(`gross income` - cogs) AS Total_Profit,
           RANK() OVER (PARTITION BY Branch ORDER BY SUM(`gross income` - cogs) DESC) AS Profit_Rank
       FROM
           walmartsales
       GROUP BY
           Branch, `Product line`
10
11 )
12 SELECT
       Branch,
13
       `Product line`,
14
15
       Total_Profit
16 FROM
       Profit_Calculation
18 WHERE
       Profit_Rank = 1;
```

# Task 2: Finding the Most Profitable Product Line for Each Branch

Walmart needs to determine which product line contributes the highest profit to each branch. The profit margin should be calculated based on the difference between the gross income and cost of goods sold.

Step 2: Identify the Most Profitable Product Line for Each Branch.



# Task 3: Analyzing Customer Segmentation Based on Spending.

Walmart wants to segment customers based on their average spending behavior. Classify customers into three tiers: High, Medium, and Low spenders based on their total purchase amounts.

#### Step 1: Calculate Total Spending for Each Customer.

```
1 WITH Customer_Spending AS (
       SELECT
           `Customer ID`,
           SUM(Total) AS Total_Spending
       FROM
           walmartsales
       GROUP BY
           `Customer ID`
9),
10 Spending_Tiers AS (
       SELECT
           `Customer ID`,
12
           Total_Spending,
13
           NTILE(5) OVER (ORDER BY Total_Spending) AS Tier
14
       FROM
           Customer_Spending
17 )
18 SELECT
       `Customer ID`,
      Total_Spending,
21
       CASE
           WHEN Tier = 5 THEN 'High Spender'
           WHEN Tier IN (3, 4) THEN 'Medium Spender'
23
           WHEN Tier IN (1, 2) THEN 'Low Spender'
25
      END AS Spending_Category
26 FROM
      Spending Tiers
28 ORDER BY
      Total_Spending DESC;
```

Re	esult Grid	Filter Rows:	Export:
	Customer ID	Total_Spending	Spending_Category
Þ	8	26634.341999999997	High Spender
	3	23402.263499999997	High Spender
	2	23392.277999999995	High Spender
	15	22674.45599999999	Medium Spender
	1	22634.54549999999	Medium Spender
	12	21720.646500000003	Medium Spender
	11	21398.8215	Medium Spender
	13	21063.6615	Medium Spender
	14	21049.402500000004	Medium Spender
	10	20723.934	Low Spender
	6	20693.9565	Low Spender
	7	20628.089999999997	Low Spender
	9	19661.596500000003	Low Spender
	5	19632.039	Low Spender
	4	17656.715999999997	Low Spender

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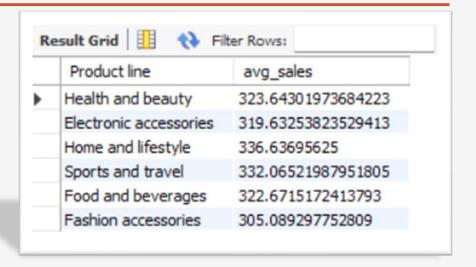


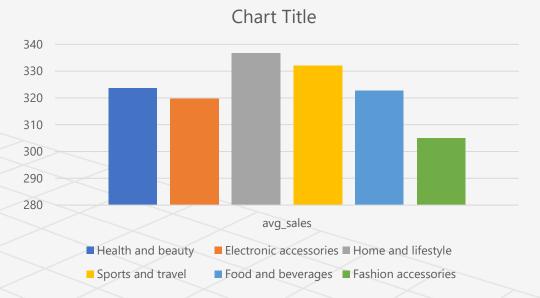
### Task 4: Detecting Anomalies in Sales Transactions.

Walmart suspects that some transactions have unusually high or low sales compared to the average for the product line. Identify these anomalies.

Step 1: Calculate Average Sales per Product Line.

```
1 SELECT
 `Product line`,
     AVG('Total') AS avg_sales
4 FROM
     walmartsales
6 GROUP BY
     `Product line`;
```

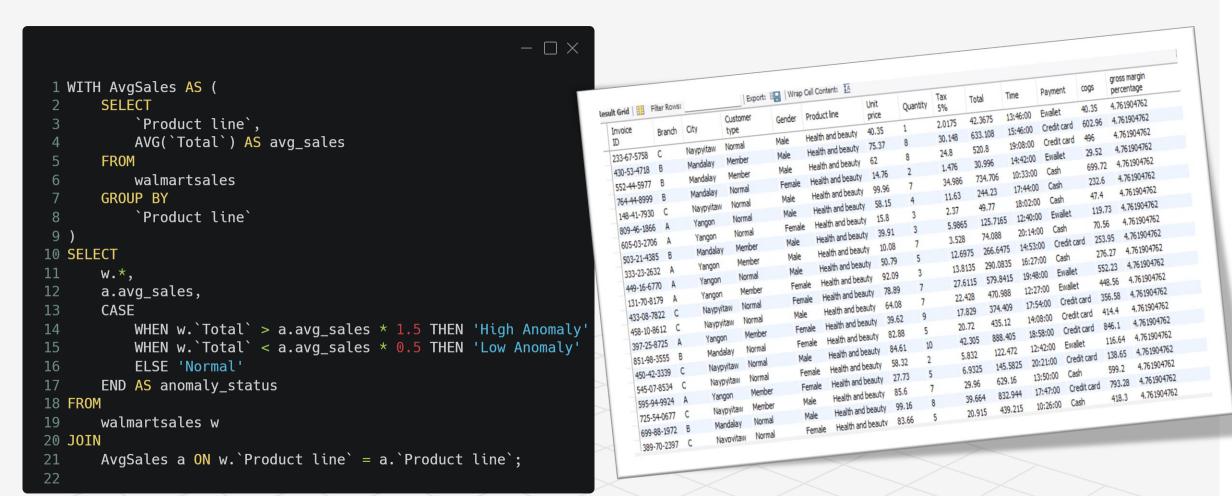




# Task 4: Detecting Anomalies in Sales Transactions.

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### Step 2: Identify Anomalies.

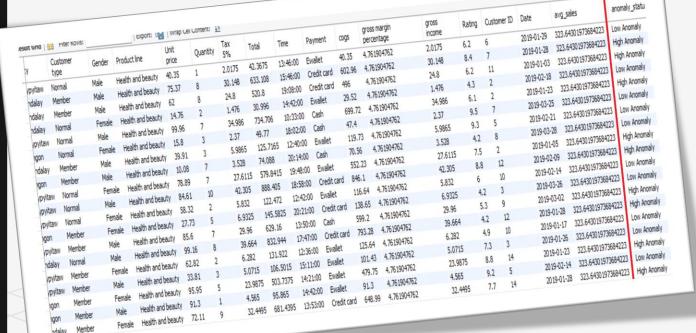


# Task 4: Detecting Anomalies in Sales Transactions.

Walmart suspects that some transactions have unusually high or low sales compared to the average for the product line. Identify these anomalies.

### Step 3: Filter and Display Anomalies.

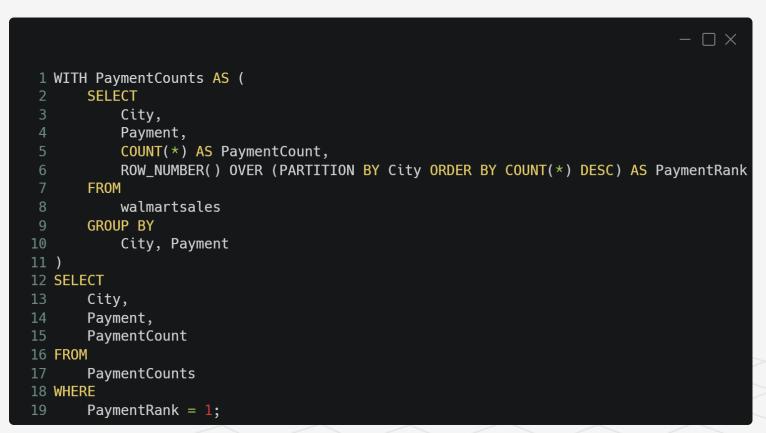


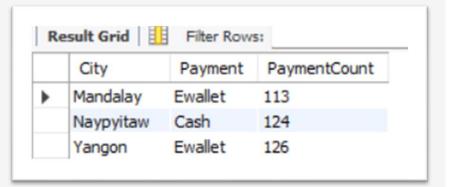


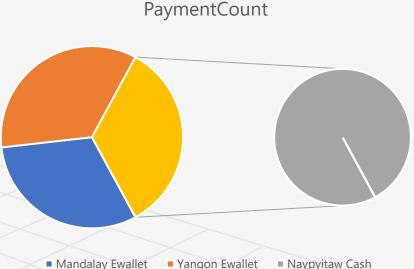
### Task 5: Most Popular Payment Method by City.

Walmart needs to determine the most popular payment method in each city to tailor marketing strategies.

### Step 1: Most Popular Payment Method by City.







Naypyitaw Cash

Mandalay Ewallet

### Task 6: Monthly Sales Distribution by Gender.

Walmart wants to understand the sales distribution between male and female customers on a monthly basis.

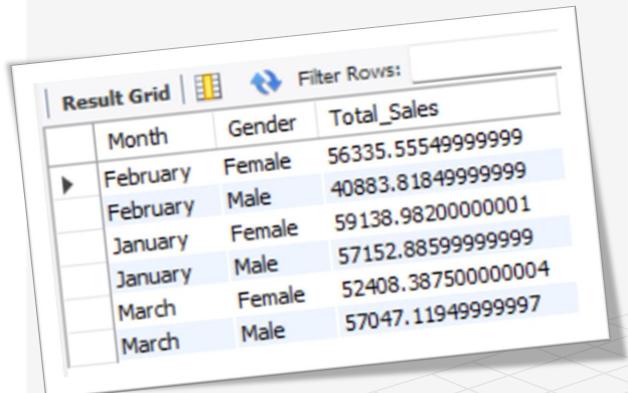
Step 1: Calculate total sales for each gender on a monthly basis.

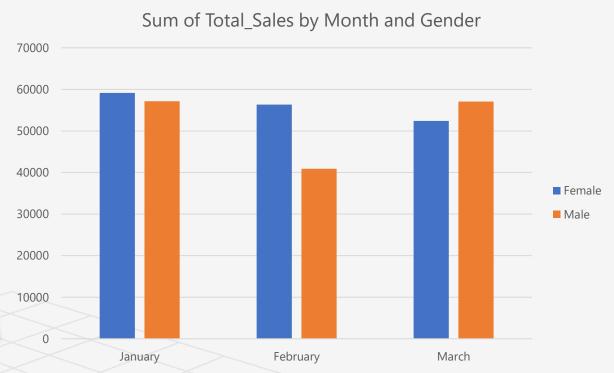
```
1 SELECT
     DATE_FORMAT(Date, '%M') AS Month,
     Gender,
     SUM(Total) AS Total_Sales
5 FROM walmartsales
6 GROUP BY Month, Gender
7 ORDER BY Month, Gender;
```

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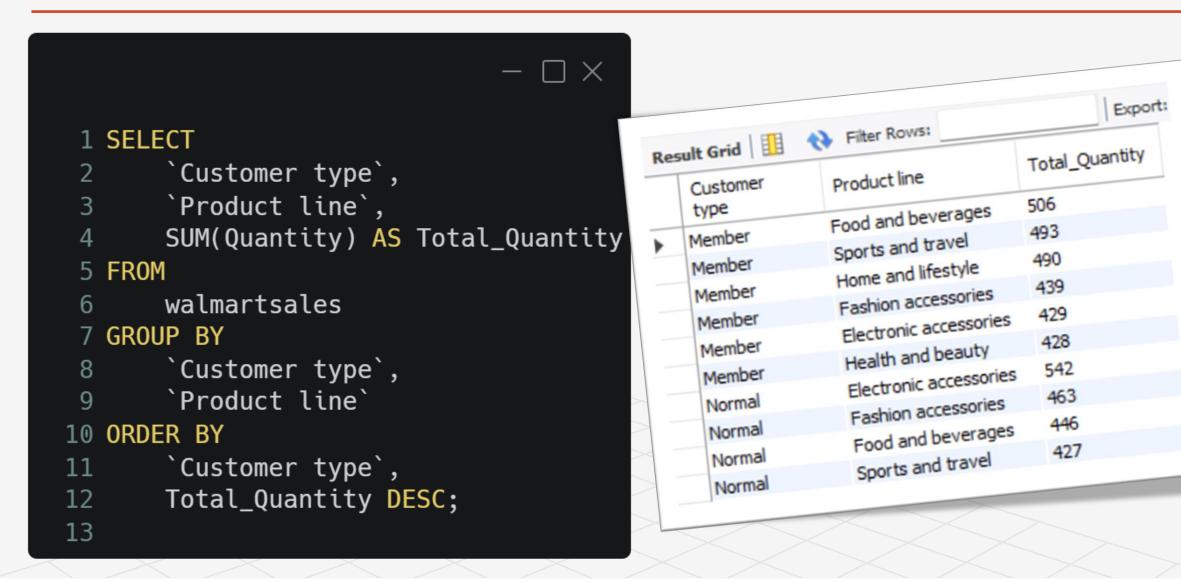
#### Step 1: Calculate total sales for each gender on a monthly basis.





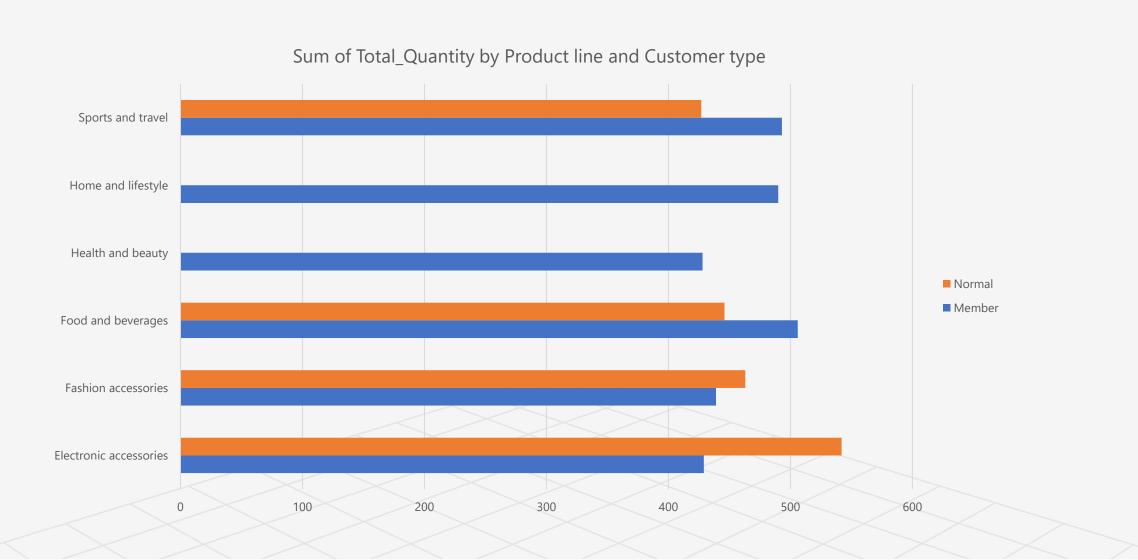
# Task 7: Best Product Line by Customer Type.

Walmart wants to know which product lines are preferred by different customer types(Member vs. Normal)



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### Task 8: Identifying Repeat Customers.

Walmart needs to identify customers who made repeat purchases within a specific time frame (e.g., within 30 days).

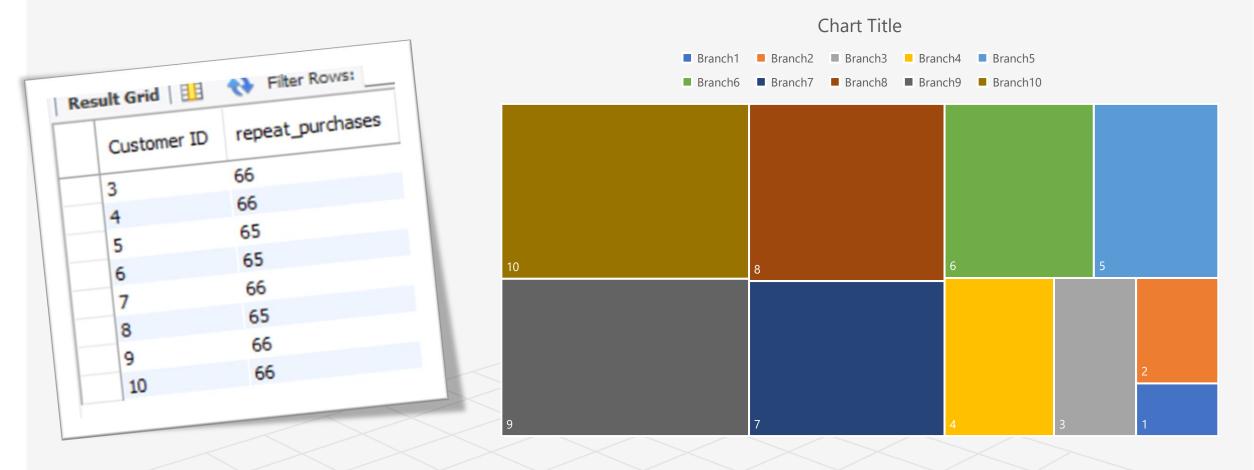
Step 1: Identify repeat customers within 30 days.

```
1 SELECT a.`Customer ID`, COUNT(DISTINCT b.`Invoice ID`) AS repeat_purchases
2 FROM walmartsales a
3 JOIN walmartsales b
4 ON a.`Customer ID` = b.`Customer ID`
5 AND a.`Invoice ID` <> b.`Invoice ID`
6 AND DATEDIFF(a.Date, b.Date) BETWEEN 1 AND 30
7 GROUP BY a.`Customer ID`
8 HAVING repeat_purchases > 1;
```

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### Step 1: Identify repeat customers within 30 days.



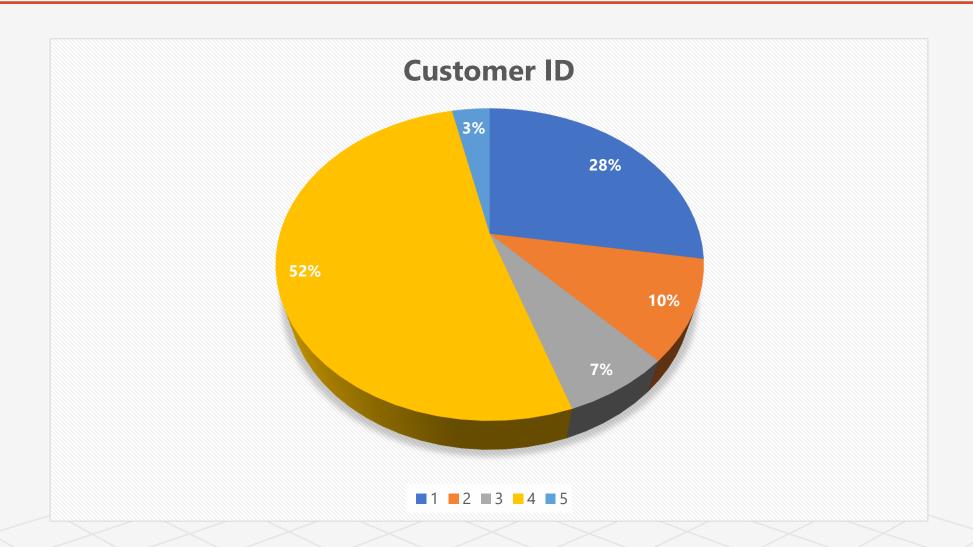
# Task 9: Finding Top 5 Customers by Sales Volume.

Walmart wants to reward its top 5 customers who have generated the most sales Revenue.

```
1 SELECT
      `Customer ID`,
       SUM(`Total`) AS TotalSales
 4 FROM
                                   walmartsales
                                                TotalSales
 6 GROUP BY
                                      Customer ID
  `Customer ID`
                                                26634.3419999999997
                                                23402.263499999999
 8 ORDER BY
                                                 23392.277999999995
      TotalSales DESC
                                                 22674.45599999999
10 LIMIT 5;
                                                 22634.545499999999
                                       15
```

# Task 9: Finding Top 5 Customers by Sales Volume.

Walmart wants to reward its top 5 customers who have generated the most sales Revenue.



# Task 10: Analyzing Sales Trends by Day of the Week.

Walmart wants to analyze the sales patterns to determine which day of the week brings the highest sales.

```
\square \times
 1 SELECT
      DAYOFWEEK(`Date`) AS DayOfWeek,
      MAX(CASE
           WHEN DAYOFWEEK('Date') = 1 THEN 'Sunday'
           WHEN DAYOFWEEK('Date') = 2 THEN 'Monday'
           WHEN DAYOFWEEK('Date') = 3 THEN 'Tuesday'
6
           WHEN DAYOFWEEK('Date') = 4 THEN 'Wednesday'
           WHEN DAYOFWEEK('Date') = 5 THEN 'Thursday'
           WHEN DAYOFWEEK('Date') = 6 THEN 'Friday'
           WHEN DAYOFWEEK(`Date`) = 7 THEN 'Saturday'
10
11
      END) AS DayName,
      SUM(`Total`) AS TotalSales
12
13 FROM
      walmartsales
14
15 GROUP BY
16
      DayOfWeek
  ORDER BY
18
      TotalSales DESC;
```

Result Grid		Filter Rows:	
		DayName	TotalSales
	DayOfWeek		56120.80949999999
_	7	Saturday	E1482,24550000001
•		Tuesday	45349.248000000014
	3	Thursday	44457.892499999999
	5	Sunday	44457.8924999999
	1		43926.34050000002
	6	Friday	43731.135
	4	Wednesday	37899.07799999999
		Monday	3/899.077
	2		

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