**PROJECT(MySQL)**

**Note: First, I created a database in MySQL named 'walmart', then imported CSV dataset into MySQL. Created a table named “walmartsales” After that, I performed queries on the data.**

**Task 1: Identifying the Top Branch by Sales Growth Rate (6 Marks)**

**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.**

**Code:**

WITH Sales\_Month AS (

SELECT

Branch,DATE\_FORMAT(Date, '%Y-%m') AS Month\_Sales,

SUM(Total) AS Total\_Sales

FROM walmart.walmartsales

GROUP BY Branch, Month\_Sales),

GrowthRate AS (SELECT Branch, Month\_Sales,Total\_Sales,

LAG(Total\_Sales) OVER (PARTITION BY Branch ORDER BY Month\_Sales) AS Prev\_Month\_Sales,

((Total\_Sales - LAG(Total\_Sales) OVER (PARTITION BY Branch ORDER BY Month\_Sales)) /

LAG(Total\_Sales) OVER (PARTITION BY Branch ORDER BY Month\_Sales)) \* 100 AS Growth\_Percentage

FROM Sales\_Month)

SELECT Branch, AVG(Growth\_Percentage) AS Avg\_Growth

FROM GrowthRate

WHERE Growth\_Percentage IS NOT NULL

GROUP BY Branch

ORDER BY Avg\_Growth DESC

LIMIT 1;

**Task 2: Finding the Most Profitable Product Line for Each Branch (6 Marks)**

**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.**

**Code :**

WITH Profit\_Margin AS( SELECT Branch,Product\_line,sum(cogs-gross\_income) AS total\_profit

FROM walmart.walmartsales

GROUP BY Branch,Product\_line),

Profit\_rank AS(SELECT Branch,Product\_line,total\_profit,

RANK() OVER(PARTITION BY Branch ORDER BY total\_profit DESC) AS Rnk

FROM Profit\_Margin)

SELECT Branch,Product\_line,round(total\_profit,2) AS ttl\_prft

FROM Profit\_rank

WHERE Rnk=1;

**Task 3: Analyzing Customer Segmentation Based on Spending (6 Marks)**

**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.**

**Code :**

SELECT Customer\_ID, ROUND(SUM(Total),2) AS Total\_Spending,

CASE WHEN SUM(Total) >= 21500 THEN "High Spender" -- SET MY OWN CONDITION—

WHEN SUM(Total) BETWEEN 19500 AND 21500 THEN "Medium Spender" -- SET MY OWN CONDITION—

ELSE "Low Spender"END AS Spending\_Div

FROM walmart.walmartsales

GROUP BY Customer\_ID

ORDER BY Customer\_ID ASC;

**Task 4: Detecting Anomalies in Sales Transactions (6 Marks)**

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

**Code :**

SELECT Customer\_ID, Product\_line, Total AS Total\_Sales,

CASE WHEN Total > (SELECT AVG(Total) FROM walmart.walmartsales) \* 2 THEN "High Anomaly"

WHEN Total < (SELECT AVG(Total) FROM walmart.walmartsales) / 2 THEN "High Anomaly"

ELSE "No Anomaly" END AS Type\_of\_Anomaly

FROM walmart.walmartsales

WHERE Total > (SELECT AVG(Total) FROM walmart.walmartsales) \* 2

OR Total < (SELECT AVG(Total) FROM walmart.walmartsales) / 2 ;

**Task 5: Most Popular Payment Method by City (6 Marks)**

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

**Code :**

WITH PaymentCounts AS

( SELECT City, Payment, COUNT(\*) AS payment\_count,

RANK() OVER (PARTITION BY City ORDER BY COUNT(\*) DESC) AS rnk

FROM walmart.walmartsales

GROUP BY City, Payment)

SELECT City, Payment, payment\_count

FROM PaymentCounts

WHERE rnk = 1;

**Task 6: Monthly Sales Distribution by Gender (6 Marks)**

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

**Code :**

SELECT

DATE\_FORMAT(Date, '%m-%y') AS Month,

Gender,

Round(SUM(Total),2) AS Total\_Sales

FROM walmart.walmartsales

GROUP BY Month, Gender

ORDER BY Month, Gender;

**Task 7: Best Product Line by Customer Type (6 Marks)**

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

**Code :**

SELECT Customer\_type, Product\_line,

COUNT(Invoice\_ID) AS Purchase\_Count

FROM walmart.walmartsales

GROUP BY Customer\_type, Product\_line

ORDER BY Customer\_type, Purchase\_Count DESC;

**Task 8: Identifying Repeat Customers (6 Marks)**

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

**Code :**

WITH Purchase AS (

SELECT Customer\_ID,Date,

LAG(Date) OVER (PARTITION BY Customer\_ID ORDER BY Date) AS Last\_Purchase\_Date

FROM walmart.walmartsales)

SELECT DISTINCT Customer\_ID

FROM Purchase

WHERE DATEDIFF(Date, Last\_Purchase\_Date) <= 30;

**Task 9: Finding Top 5 Customers by Sales Volume (6 Marks)**

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

**Code :**

SELECT Customer\_ID,Round(SUM(Total),2) AS Total\_Rev

FROM walmart.walmartsales

GROUP BY Customer\_ID

ORDER BY SUM(Total) DESC

LIMIT 5;

**Task 10: Analyzing Sales Trends by Day of the Week (6 Marks)**

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

**Code :**

SELECT

DAYNAME(Date) AS Day\_Of\_Week,

Round(SUM(Total),2) AS Total\_Sales

FROM walmart.walmartsales

GROUP BY Day\_Of\_Week

ORDER BY Total\_Sales DESC;