**Sales Performance Analysis of Walmart Stores Using Advanced MySQL Techniques**

**Project Title:**

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#project

**Business Problem:** Walmart wants to optimize its sales strategies by analyzing historical transaction data across branches, customer types, payment methods, and product lines. To achieve this, advanced MySQL queries will be employed to answer challenging business questions related to sales performance, customer segmentation, and product trends.

#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.

#Subquery 1: Total sales by branch with window function

select branch,salesdate , sum(total) over(partition by branch ) as total from walmartsales

order by Total desc ;

#Subquery 2: Aggregated sales and count by branch

select branch,sum(total) as total, count(\*) as number\_months from walmartsales

group by Branch

order by Total desc;

#Subquery 3: Percentage comparison of sales by branch

select branch,Customer\_ID,salesDate,(total-lag(total)over(partition by Branch order by salesdate desc)/lag(total)over(partition by Branch order by salesdate desc)\*100) as compare

from walmartsales order by Branch desc;

#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.

#Subquery to calculate the profit margin for each branch and product line

select branch, product\_line,sum(cogs-gross\_income) as profit\_margin

from walmartsales group by branch,product\_line order by profit\_margin desc;

#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.

#Select all columns from the Walmart sales data and classify customers

#based on their spending High ,low and medium

select \*,

case

when total >320 then "Highspender"

when total between 250 and 320 then "Mediumspender"

else "Lowspender"

end as spenders

from walmartsales;

#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.

#Identify anomalies in transactions based on comparison to

#the average sales for each product line

select product\_line, total, avgtotal as score,

case

when total> avgtotal \*1.2 then "High anomaly"

when total< avgtotal \*0.8 then "low anomaly"

else "No"

end as anomaly

from (select product\_line, total, avg(total) over(partition by Product\_line) as avgtotal

from walmartsales )as anomalydetection

order by Product\_line,total;

#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

#Select the city and payment method along with the count of how many times each payment was used

select city,max(payment) as most\_used\_payment,count(Payment) as payment\_used\_count from walmartsales

group by city,payment

order by payment\_used\_count desc;

#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.

#Total sales for each gender on each date

select Gender,salesdate, sum(total) as gender\_based\_sales from walmartsales

group by gender,salesdate

order by gender\_based\_sales desc;

# Count of customers for each gender on each date

select Gender,salesDate,count(Customer\_ID) as gender\_count from walmartsales

group by Gender,salesDate;

#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).

#product lines are preferred by different customer types(Member vs. Normal).

select product\_line,customer\_type,count(\*) as num\_customer from walmartsales

group by Product\_line,Customer\_type

order by num\_customer 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).

#to identify customers who made repeat purchases within a specific time frame

select customer\_id,salesdate,count(\*) as repeated\_customer from walmartsales

where salesDate between '01-01-2019'and'02-12-2019'

group by customer\_id,salesdate

having count(\*)>1

order by repeated\_customer desc;

#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.

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

select Customer\_ID,sum(total) as revenue from walmartsales

group by Customer\_ID

order by revenue 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

select salesDate,sum(total) as sales from walmartsales

group by salesDate

order by sales desc;

select extract(day from salesdate) as week\_of\_day,sum(total) as total\_sales

from walmartsales group by week\_of\_day;

select \*from walmartsales