



# Project → E- Commerce Company

MySQL



# Problem Statement

- 1) You can analyze all the tables by describing their contents.
- 2) Identify the top 3 cities with the highest number of customers to determine key markets for targeted marketing and logistic optimization.
- 3) As per the last query's result, Which of the cities must be focused as a part of marketing strategies?
- 4) Determine the distribution of customers by the number of orders placed. This insight will help in segmenting customers into one-time buyers, occasional shoppers, and regular customers for tailored marketing strategies.



# Problem Statement

- 5) As per the Engagement Depth Analysis question, What is the trend of the number of customers v/s number of orders?
- 6) As per the Engagement Depth Analysis question, Which customers category does the company experiences the most?
- 7) Identify products where the average purchase quantity per order is 2 but with a high total revenue, suggesting premium product trends.
- 8) Among products with an average purchase quantity of two, which ones exhibit the highest total revenue?



# Problem Statement

- 9) For each product category, calculate the unique number of customers purchasing from it. This will help understand which categories have wider appeal across the customer base.
- 10) As per the last question, Which product category needs more focus as it is in high demand among the customers?
- 11) Analyze the month-on-month percentage change in total sales to identify growth trends.
- 12) As per Sales Trend Analysis question, During which month did the sales experience the largest decline?



# Problem Statement

- 13) As per Sales Trend Analysis question, What could be inferred about the sales trend from March to August?
- 14) Examine how the average order value changes month-on-month. Insights can guide pricing and promotional strategies to enhance order value.
- 15) As per last question, Which month has the highest change in the average order value?
- 16) Based on sales data, identify products with the fastest turnover rates, suggesting high demand and the need for frequent restocking.



# Problem Statement

- As per last question, Which product\_id has the highest turnover rates and needs to be restocked frequently?
- 18) List products purchased by less than 40% of the customer base, indicating potential mismatches between inventory and customer interest.
- 19) Why might certain products have purchase rates below 40% of the total customer base?



# Problem Statement

- 20) After running an analysis to identify products purchased by less than 40% of the customer base, it was found that a few products have lower purchase rates than expected. What could be a strategic action to improve the sales of these underperforming products?
- 21) Evaluate the month-on-month growth rate in the customer base to understand the effectiveness of marketing campaigns and market expansion efforts.
- 22) As per last question, What can be inferred about the growth trend in the customer base from the result table?

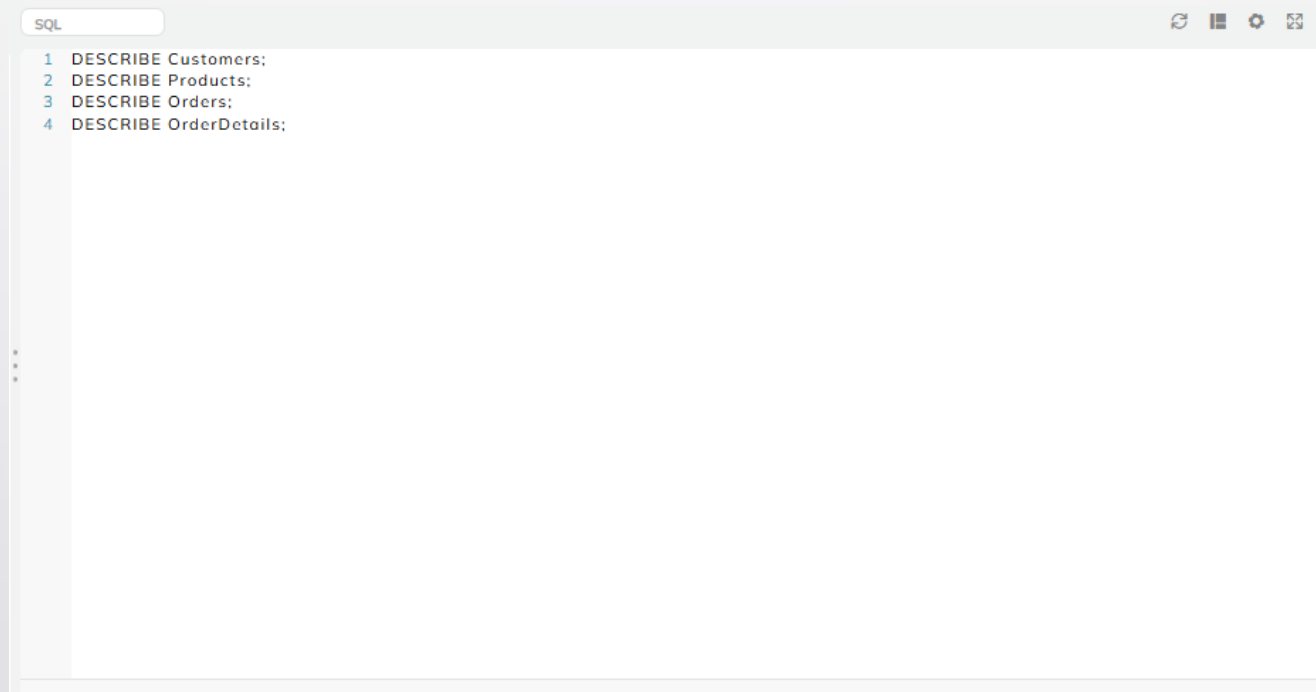


# Problem Statement

- 23) Identify the months with the highest sales volume, aiding in planning for stock levels, marketing efforts, and staffing in anticipation of peak demand periods.
- 24) As per last question, Which months will require major restocking of product and increased staffs?



# Output - 1



A screenshot of a SQL query editor window. The window has a title bar with the text "SQL" and several icons on the right. The main area contains four lines of SQL code, each preceded by a line number (1, 2, 3, 4) in blue. The code is as follows:

```
1 DESCRIBE Customers;  
2 DESCRIBE Products;  
3 DESCRIBE Orders;  
4 DESCRIBE OrderDetails;
```


# Output - 2

```
SQL
1 select location, count(customer_id) as number_of_customers
2 from Customers
3 group by 1
4 order by 2 desc
5 limit 3;
```

# Output - 3

**Options:** Pick one correct answer from below

Attempts left: 3/4

- ☐ Delhi, Chennai, Pune
- ☐ Delhi, Hyderabad, Chennai
- ☒ Delhi, Chennai, Jaipur 
- ☐ Delhi, Kolkata, Chennai

# Output - 4

```
SQL
1 SELECT NumberOfOrders, COUNT(*) AS CustomerCount
2 FROM (
3     SELECT customer_id, COUNT(order_id) AS NumberOfOrders
4     FROM Orders GROUP BY customer_id ) AS CustomerOrders
5 GROUP BY NumberOfOrders
6 ORDER BY NumberOfOrders ASC;
```

# Output - 5

Options: Pick one correct answer from below

Attempts left: 3/4

- ☐ As the Number of orders increases, the Customer count increases.
- ☐ As the Number of orders decreases, the Customer count increases.
- ☐ As the Number of orders decreases, the Customer count decreases.
- ☒ As the Number of orders increases, the Customer count decreases. ✓

# Output - 6

Options: Pick one correct answer from below

Attempts left: 3/4

- ☐ One Time Buyers
- ☐ Regular customers
- ☒ Occasional shoppers
- ☐ All of the above

# Output - 7


```
SQL
1 SELECT
2   Product_ID,
3   AVG(Quantity) AS AvgQuantity,
4   SUM(Price_per_unit * Quantity) AS TotalRevenue
5 FROM
6   OrderDetails
7 GROUP BY
8   Product_ID
9 HAVING
10  AVG(Quantity) = 2 -- Only products with an average quantity of 2
11 ORDER BY
12  TotalRevenue DESC; -- Sort by total revenue in descending order
13
```



# Output - 8

**Options:** Pick one correct answer from below

Attempts left: 3/4

- ☐ Product 8
- ☐ Product 3
- ☒ Product 1 
- ☐ Product 4




## Output - 9

```
SQL
1 SELECT
2   p.category,
3   COUNT(DISTINCT o.Customer_ID) AS unique_customers
4 FROM
5   Products p
6 JOIN
7   OrderDetails od ON p.Product_ID = od.Product_ID
8 JOIN
9   Orders o ON od.Order_ID = o.Order_ID
10 GROUP BY
11   p.category
12 ORDER BY
13   2 DESC;
14
```

# Output - 10

**Options:** Pick one correct answer from below

Attempts left: 3/4

- ☐ Wearable tech
- ☐ Photography
- ☒ Electronics 
- ☐ None of the above


# Output - 11

```
SQL
1 WITH cte AS (
2   SELECT
3     DATE_FORMAT(order_date, '%Y-%m') AS month,
4     SUM(total_amount) AS sales
5   FROM orders
6   GROUP BY DATE_FORMAT(order_date, '%Y-%m')
7 ),
8 monthonmonth AS (
9   SELECT
10    month,
11    sales,
12    ROUND(((sales - LAG(sales) OVER (ORDER BY month)) / LAG(sales) OVER (ORDER BY month)) * 100, 2) AS percentagechange
13   FROM cte
14 )
15 * SELECT
16 *   month,
17   sales AS totalsales,
18   percentagechange AS percentchange
19 FROM monthonmonth;
```

# Output - 12

**Options:** Pick one correct answer from below

Attempts left: 2/4

☒ Feb 2024 

☐ March 2023


☐ April 2023

☐ May 2023

# Output - 13

Options: Pick one correct answer from below

Attempts left: 2/4

- ☐ Sales consistently increased every month.
- ☐ Sales peaked in March and then declined.
- ☐ Sales fluctuated but showed an overall upward trend.
- ☒ Sales fluctuated with no clear trend. 

# Output - 14

```
SQL
1 SELECT
2   DATE_FORMAT(order_date, '%Y-%m') AS Month,
3   AVG(total_amount) AS AvgOrderValue,
4   ROUND((AVG(total_amount) - LAG(AVG(total_amount)) OVER(ORDER BY DATE_FORMAT(order_date, '%Y-%m'))), 2) AS ChangeInValue
5 FROM
6   orders
7 GROUP BY
8   DATE_FORMAT(order_date, '%Y-%m')
9 ORDER BY
10  ChangeInValue DESC;
```

# Output - 15

**Options:** Pick one correct answer from below

Attempts left: 3/4

☐ August

☐ July

☒ December

☐ September

# Output - 16

```
SQL
1 SELECT
2   p.product_id,
3   COUNT(od.product_id) AS SalesFrequency
4 FROM
5   OrderDetails od
6 JOIN
7   Products p ON od.product_id = p.product_id
8 GROUP BY
9   p.product_id
10 ORDER BY
11   SalesFrequency DESC
12 LIMIT 5;
13
```






# Output - 17

**Options:** Pick one correct answer from below

Attempts left: 3/4

☐ 5

☐ 6

☒ 7 

☐ 8


# Output - 18

```
SQL
1 select p.product_id, p.name, count(distinct o.customer_id) as uniquecustomercount
2 from products p
3 join
4 orderDetails od on p.product_id = od.product_id
5 join
6 orders o on od.order_id = o.order_id
7 group by p.product_id, p.name
8 having uniquecustomercount < (select count(*) from customers) * 0.40;
```

# Output - 19

**Options:** Pick one correct answer from below

Attempts left: 3/4

- ☐ High product quality
- ☒ Poor visibility on the platform 
- ☐ Competitive pricing
- ☐ High market demand

# Output - 20

Options: Pick one correct answer from below

Attempts left: 3/4

- ☐ Increase the prices of these products to enhance perceived value.
- ☐ Remove these products from the inventory permanently.
- ☒ Implement targeted marketing campaigns to raise awareness and interest. ✓
- ☐ Limit customer reviews to avoid negative feedback.

# Output - 21

```
SQL
1 WITH FirstPurchases AS (
2   SELECT
3     o.Customer_ID,
4     MIN(date_format(o.Order_Date, '%Y-%m')) AS FirstPurchaseMonth
5   FROM
6     Orders o
7   GROUP BY
8     o.Customer_ID
9 )
10 SELECT
11   FirstPurchaseMonth AS FirstPurchaseMonth,
12   COUNT(DISTINCT Customer_ID) AS TotalNewCustomers
13 FROM
14   FirstPurchases
15 GROUP BY
16   FirstPurchaseMonth
17 ORDER BY
18   FirstPurchaseMonth ASC;
19
```

# Output - 22

Options: Pick one correct answer from below

Attempts left: 1/4

☒ It is downward trend which implies the marketing campaign are not much effective. ✓

☐ It is an upward trend which implies the marketing campaigns are very effective.

☐ The trend is constant and there is not much impact of the marketing campaigns.

☐ Both 1 and 2


# Output - 23

```
SQL
1 select date_format(order_date, '%Y-%m') as Month, sum(total_amount) as TotalSales
2 from Orders
3 group by Month
4 order by TotalSales desc
5 limit 3;
```

# Output - 24

**Options:** Pick one correct answer from below

Attempts left: 3/4

- ☐ August, October
- ☐ September, October
- ☐ September, November
- ☒ September, December 



Thank  
you!