**Interview Questions and Answers:**

1. How do you group data by month and year?

Ans. To group data by month and year in mysql we:

If we have a date column order\_date:

sql

CopyEdit

SELECT

YEAR(order\_date) AS Year,

MONTH(order\_date) AS Month,

SUM(sales) AS Total\_Sales

FROM orders

GROUP BY YEAR(order\_date), MONTH(order\_date)

ORDER BY Year, Month;

1. What's the difference between COUNT(\*) and COUNT(DISTINCT col)?

Ans. ✅ COUNT(\*) Counts all rows in the result, including duplicates and NULLs in any columns.

It doesn’t care about what’s inside the columns — it just counts the number of rows.

Example:

id name 1 John 2 Alice 3 John sql Code SELECT COUNT(\*) FROM people; Result: 3 — because there are 3 total rows.

✅ COUNT(DISTINCT col) Counts the number of unique, non-NULL values in a specific column.

It ignores duplicates and NULL values.

Example:

id name 1 John 2 Alice 3 John 4 NULL sql Code SELECT COUNT(DISTINCT name) FROM people; Result: 2 — because there are 2 unique names: John and Alice (NULL is ignored).

1. How do you calculate monthly revenue?

Ans. ✅ Scenario Example Table: orders

order\_id order\_date total\_amount 1 2024-01-05 100 2 2024-01-20 200 3 2024-02-10 150 📊 Query to Calculate Monthly Revenue Option 1: Using YEAR() and MONTH() sql Copy Edit SELECT YEAR(order\_date) AS order\_year, MONTH(order\_date) AS order\_month, SUM(total\_amount) AS monthly\_revenue FROM orders GROUP BY YEAR(order\_date), MONTH(order\_date) ORDER BY order\_year, order\_month; What this does:

Breaks the data down by year and month

Sums up total\_amount for each month

1. What are aggregate functions in SQL?

Ans. Aggregate functions are special SQL functions that perform a calculation on a set of values and return a single summary value.

They’re typically used with GROUP BY clauses to summarize data in groups — but you can use them on entire tables too.

1. How to handle NULLs in aggregates?

Ans. COUNT(\*) — counts all rows

COUNT(column) — counts non-NULL values

SUM(), AVG(), MIN(), MAX() — ignore NULLs

To handle NULLs:

Use COALESCE(column, value) to replace NULLs → Example: SUM(COALESCE(amount, 0))

Use WHERE column IS NOT NULL to exclude NULLs

1. What’s the role of ORDER BY and GROUP BY?

Ans. ✅ GROUP BY Groups rows with the same values in specified columns.

Used with aggregate functions (SUM(), COUNT(), etc.) to summarize data.

Example:

sql Copy Edit SELECT department, SUM(salary) FROM employees GROUP BY department; ✅ ORDER BY Sorts the result in ascending (ASC) or descending (DESC) order based on one or more columns.

Example:

sql Copy Edit SELECT \* FROM employees ORDER BY salary DESC; ✅ In Short: GROUP BY → Groups data

ORDER BY → Sorts data

1. How do you get the top 3 months by sales?

Ans. Assuming a table orders like:

order\_id order\_date total\_amount 1 2024-01-05 100 2 2024-01-20 200 3 2024-02-10 150 📌 SQL Query: sql Copy Edit SELECT DATE\_FORMAT(order\_date, '%Y-%m') AS month, SUM(total\_amount) AS total\_sales FROM orders GROUP BY month ORDER BY total\_sales DESC LIMIT 3; ✅ What this does: Groups sales by month

Sums up sales for each month

Orders them by total sales in descending order

Limits the result to the top 3 months