

Interview Questions – Explained

Q1.How do you extract month and year from a timestamp in SQL?

➤ In PostgreSQL: `EXTRACT(YEAR FROM order_date)`, `EXTRACT(MONTH FROM order_date)`

Q2.Why use COUNT(DISTINCT order_id) instead of COUNT(*)?

➤ To avoid counting duplicate order IDs. `COUNT(*)` counts all rows, including duplicates or multiple items per order.

Q3.How to calculate average revenue per order in SQL?

➤ `SUM(amount) / COUNT(DISTINCT order_id)`

Q4.Difference between WHERE and HAVING?

➤ `WHERE` filters rows before aggregation, `HAVING` filters after aggregation.

Q5.How do NULLs affect SUM() or AVG()?

➤ `NULLs` are ignored in these functions.

Q6.How to retrieve top 5 revenue-generating months?

➤ Use `ORDER BY SUM(amount) DESC LIMIT 5` after grouping by month.

Q7.When is time-based aggregation useful?

➤ In revenue forecasting, seasonal demand analysis, budgeting, and marketing campaign planning.

Q8.Steps to optimize for large datasets?

- Use indexed columns in `WHERE` clause
- Create a materialized view for repeated queries
- Use `date_trunc()` instead of `EXTRACT()` for faster performance
- Avoid unnecessary joins
- Use `LIMIT`, `PARTITION`, and pagination if viewing in UI
- Analyze query plan using `EXPLAIN`