

Day 1 — SQL Interview Q&A; (20 Minutes Revision)

1. Difference between WHERE and HAVING?

WHERE filters rows before grouping. HAVING filters groups after aggregation.

2. When to use LEFT JOIN vs INNER JOIN?

LEFT JOIN keeps all left table rows even if no match. INNER JOIN only keeps matching rows.

3. What is a window function?

A function that performs calculations across a set of rows related to the current row without collapsing rows.

4. How to remove duplicate rows?

Use `SELECT DISTINCT` or `ROW_NUMBER() OVER (PARTITION BY col ORDER BY col)` and delete where `rn > 1`.

5. Explain GROUP BY with an example.

GROUP BY groups rows with identical values, allowing aggregate functions like SUM or COUNT to work per group.

6. What is a subquery?

A query inside another query. It can be correlated or non-correlated.

7. Difference between UNION and UNION ALL?

UNION removes duplicates; UNION ALL keeps duplicates and is faster.

8. How to find missing values after a join?

Use LEFT JOIN and filter rows where `right_table.key IS NULL`.

9. When should you use indexes?

Use indexes on columns used in WHERE, JOIN, ORDER BY to improve search performance.

10. How to optimize a slow SQL query?

Check execution plan, add indexes, avoid `SELECT *`, simplify subqueries, filter early, use proper joins.