

Here are **20 Hard-Level SQL Interview Questions** based ONLY on **YEAR/MONTH, GROUP BY, HAVING, CONCAT, and NO SUBQUERIES** (exactly as you requested).
All questions are **simple to understand**, even for non-technical background.

20 Hard-Level SQL Questions (NO Subquery Version)

Table: *employees(emp_id, full_name, age, city, department, salary, joining_date)*

PART A — YEAR / MONTH GROUPING (8 Questions)

1. Count how many employees joined in each year.
 2. Count how many employees joined in each month (across all years).
 3. Show employee count for each Year + Month combination.
(Use `CONCAT(YEAR(joining_date), '/', MONTH(joining_date))`)
 4. Find average salary for employees joined in each year.
 5. Show total salary paid for each year and month.
 6. Find number of employees who joined in each year, ordered by year descending.
 7. Find number of employees who joined in January (MONTH = 1) for each year.
 8. Find the year in which the highest number of employees joined.
(Use `TOP 1 + ORDER BY COUNT(*) DESC`, no subquery)
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PART B — GROUP BY WITH DEPARTMENT & CITY (6 Questions)

9. Find employee count for each department in each joining year.
 10. Find total salary department-wise for each joining year.
 11. Find the city where employees joined the most in 2020.
(WHERE `YEAR(joining_date) = 2020` → GROUP BY city)
 12. Find number of employees in each department who joined in 2021.
 13. Find average age of employees grouped by both city and joining year.
 14. Find highest salary in each department for each joining month.
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PART C — HAVING + GROUP BY (6 Questions) — NO SUBQUERY

15. Show years where more than 10 employees joined.
(Use `HAVING COUNT(*) > 10`)
16. Show departments where total salary > 5,00,000.
17. Show Year–Month groups where at least 5 employees joined.
18. Show departments that have more than 3 employees joined in 2022.
19. Show cities where average age of employees is > 30.
20. Show departments where the maximum salary is greater than 1,00,000.

✓ All questions are:

- Subquery-free
- Year/Month focused
- Real interview types
- Easy language
- Perfect for hard-level practice
- Ideal for Data Engineering Interviews.

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