SQL INTERMEDIATE

Employees(

EmployeeID INT PRIMARY KEY,

Name VARCHAR(100),

DepartmentID INT,

Salary DECIMAL(10,2),

HireDate DATE

)

Departments(

DepartmentID INT PRIMARY KEY,

DepartmentName VARCHAR(100)

)

Projects(

ProjectID INT PRIMARY KEY,

ProjectName VARCHAR(100),

DepartmentID INT

)

EmployeeProjects(

EmployeeID INT,

ProjectID INT,

HoursWorked INT,

PRIMARY KEY (EmployeeID, ProjectID)

)

📝 Next-Level SQL Practice Questions

🔹 Joins & Aggregates

Show the total salary expense per department (join Employees + Departments).

Find the department with the maximum number of employees.

List all employees along with the projects they are working on.

Show employees who are not assigned to any project.

Retrieve employees who work on projects outside their own department.

🔹 Grouping & Conditions

Find departments that have an average salary greater than 60,000.

Show employees who earn more than the average salary of their department.

Find employees who worked more than 100 total hours across all projects.

List projects where more than 5 employees are assigned.

Show the highest-paid employee in each department.

🔹 Subqueries

Find employees whose salary is greater than the company-wide average.

Show employees who were hired before the oldest hire date in Department 2.

Find employees who work on all the projects in their department.

Retrieve employees who earn the second-highest salary in the company.

Find employees who earn the top 3 salaries in their department.

🔹 Window Functions (Intermediate)

Rank employees in each department by salary.

Show each employee’s salary along with the difference from the department average.

Find the running total of salaries ordered by hire date.

Show employees with their salary and the previous employee’s salary (using LAG).

For each project, calculate the percentage of hours contributed by each employee.

🔹 Date & String Functions

Show employees who have been working for more than 5 years.

Display the year and month each employee was hired.

Find employees whose name ends with "n" and has exactly 6 characters.

Show employees hired in the same year as "Alice".

List employees whose hire date falls on a weekend.

⚡ These questions will prepare you for interviews and real-world SQL, where you need:

JOIN, GROUP BY, HAVING

Subqueries (correlated + non-correlated)

Window functions (ROW\_NUMBER, RANK, LAG, LEAD, OVER)

Dates & Strings functions