

## SQL Exercises

Check the following relational database schema:

employees (employee\_id, first\_name, last\_name, birthdate, address, gender, salary, supervisor\_id, department\_id)

projects (project\_id, name, place, budget, department\_id)

departments (department\_id, name, manager\_id)

works\_in (employee\_id, project\_id, total\_time)

Now write queries to solve the following requirements:

1. Create the database with all the tables, keys and constraints. Add at least five employees, ten projects and three departments.
2. Get the salary of each employee with his or her name.
3. Get all the different salaries of the employees.
4. Find out what employees are working for the department number 2.
5. Find out all the employees from the departments 1 and 2.
6. Find out all the employees with unknown salary.
7. Look for all the employees from Sidney.
8. Look for all the employees from towns starting with S (e.g. Stockholm, Sidney, etc.).
9. What employees have no supervisor?
10. What employees are supervisors?
11. Find out all the employees from the 'Research' department.
12. Find out all the employees from the 'Research' department, along with the department data.
13. Get the list with all the employees along with their supervisors.
14. Get the combinations of employees with their departments.
15. Get the list of all the departments along with the names of their employees. The result must be sorted:
  - In descending order for the department name.
  - In ascending order for employee surname.
16. Calculate the total salaries, the highest salary, the lowest one and the average salary for all the employees.
17. Calculate the total salaries, the highest salary, the lowest one and the average salary for all the employees from the 'Research' department.
18. How many people work in the 'Research department'?
19. How many different salaries are in the database?
20. Find out what employees have worked in projects from other departments different to the one they are assigned to.
21. What's the total budget for each department?