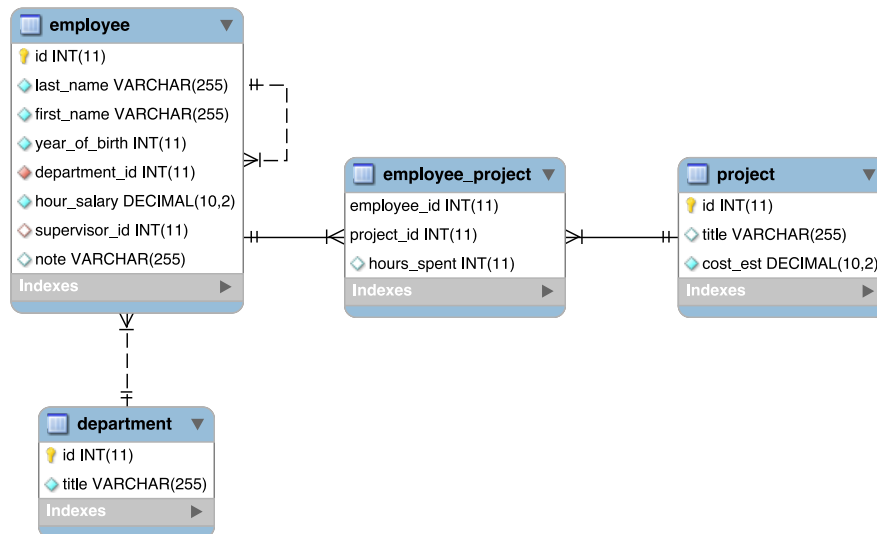# Exercises for the SQL tutorial

1 Queries on a single table

1. Select all employees in the alphabetical order.
2. Select the year of birth, the salary and the note of Karoline Lekve.
3. Select the names of all departments.
4. Select all employees whose last name starts with L and the first name is not Victor.
5. Select all distinct salaries, from the highest to the lowest.
6. Select all employees born between 1970 and 1980.
7. Select the name and the salary of the supervisors (i.e., employees without a supervisor) of departments 1 and 2.
8. Select all employees ordered by their salaries. In the case of a tie, order by their last name.

2 Queries involving several tables

1. Select all employees, together with the name of their department.

2. Select all employees working for the "Planning" department.

3. Select distinct salaries in each department, including the department name.

4. Select the first and last name of employees, the titles of projects they are working on, and the time they have spent working on these projects.

5. Select the last name of all employees that have a supervisor, together with the name of their supervisor.

6. Produce all possible pairs of employees (include both first and last names). Every pair of people must be listed only once.

3   Queries involving set-based operations

1. Make a single-column list of the project and department names.

2. Make a single-column list of all projects where every project is listed twice.

3. Select the id of employees working on both project 2 and project 3.

4   Queries involving grouping and aggregates

1. Count the number of departments.

2. Count the number of employees in the "Production A" department.

3. How many hours in total has been spent on each project? Include the project name in the result.

4. Count the number of employees, the minimum and the maximum salary in each department, including its name.

5. What is the average salary at departments with at least 5 employees. Include the name of the departments.

6. Count how many employees each supervisor manages.

7. (*) Which projects did not blow the budget (i.e., have estimated cost higher than the real cost)? Include the project name, the estimated and the real cost.

5   Additional queries (nesting and outer joins)

1. Select employees with the highest salary.

2. Select employees not working on any project.

3. Select the name of all employees, together with the name of their supervisor.

4. Select employees which have the highest salaries in their respective departments

5. (*) Select the department with the highest average salary.