# Labsheet Topic 4 – SQL Joins

# Answers

# Completion Problems

### Q1. List the job title and minimum salary for every job where the minimum salary is more than 10,000. Combine the output with every country the company operates in.

SELECT job\_title, min\_salary, country\_name   
FROM jobs   
CROSS JOIN countries   
WHERE min\_salary > 10000;

### Q2. List the full address of every location, including the country name.

SELECT street\_address, postal\_code, city, country\_name   
FROM locations   
INNER JOIN countries   
 USING (country\_id);

### Q3. List the name, city and country of every department.

SELECT department\_name, city, country\_name   
FROM departments   
INNER JOIN locations   
 USING (location\_id)   
INNER JOIN countries   
 USING (country\_id);

### Q4. List the department ID, name and manager name for every department.

SELECT d.department\_id, department\_name,   
 first\_name || ' ' || last\_name AS Manager  
FROM departments d   
INNER JOIN employees e   
 ON d.manager\_id = e.employee\_id;

### Q5. List every pair of employees working in the same department, but only list each pair once. Order the results by department ID then by the surname of the first employee and then the surname of the second employee.

SELECT e.department\_id, e.first\_name || ' ' || e.last\_name Employee,   
 c.first\_name || ' ' || c.last\_name Colleague   
FROM employees e   
INNER JOIN employees c   
 ON e.department\_id = c.department\_id   
WHERE e.employee\_id < c.employee\_id   
ORDER BY e.department\_id, e.last\_name, c.last\_name;

### Q6. List every employee, their department name and manager name. If they have no manager or department, still include them.

SELECT e.first\_name || ' ' || e.last\_name AS "employee name", department\_name,   
 m.first\_name || ' ' || m.last\_name AS "manager name"   
FROM employees e   
LEFT JOIN employees m   
 ON e.manager\_id = m.employee\_id   
LEFT JOIN departments   
 ON e.department\_id = departments.department\_id   
ORDER BY e.last\_name;

### Q7. List the details for all jobs with the letters “ing” in the title.

SELECT \*   
FROM jobs   
WHERE job\_title LIKE '%ing%';

### Q8. List the information about employees who have left the company (i.e. have an end date).

SELECT first\_name, last\_name, start\_date, end\_date   
FROM employees   
INNER JOIN job\_history   
 USING (employee\_id);

# Deliberate Practice: Write the SQL

### Q1. List the names of all employees and their job titles, ordered alphabetically by surname

SELECT first\_name, last\_name, job\_title

FROM employees

INNER JOIN jobs USING (job\_id)

ORDER BY last\_name;

### Q2. List the names of the three employees with the highest potential salary and their job title

SELECT first\_name, last\_name, job\_title, max\_salary

FROM employees

INNER JOIN jobs USING (job\_id)

ORDER BY max\_salary DESC

FETCH FIRST 3 ROWS ONLY;

### Q3. The HR department wants a list of all employees who were hired after their managers. Produce a query that shows the names and hire dates of managers and the employees who they manage. Only show employees who were hired after their managers.

select m.first\_name || ' ' || m.last\_name AS Manager,

m.hire\_date,

e.first\_name || ' ' || e.last\_name As Employee,

e.hire\_date

from employees e

INNER join employees m

on e.manager\_id = m.employee\_id

where e.hire\_date > m.hire\_date;

### Q4. List the job titles and names of employees who used to hold those positions, including their start and end dates. Where nobody has ever held that position only list the job titles and where the position is still being filled list the job title, employee name and start date. Give the results in order of job title.

SELECT job\_title, first\_name, last\_name, start\_date, hire\_date

FROM jobs

LEFT JOIN job\_history USING (job\_id)

LEFT JOIN employees USING (employee\_id)

ORDER BY job\_title ASC;

### Q5. List the names of all employees still working for the company.

SELECT first\_name, last\_name

FROM employees

LEFT JOIN job\_history USING (employee\_id)

WHERE end\_date IS NULL;

### Q6. List all employees who left the company in 1999

SELECT first\_name, last\_name

FROM employees

INNER JOIN job\_history USING (employee\_id)

WHERE end\_date LIKE '%99%';

### Q7. List the manager name, department name and full address including country and region name for every department – including those with no manager.

SELECT first\_name ||' ' || last\_name AS Manager, department\_name,

street\_address, postal\_code, city, state\_province,

country\_name, region\_name

FROM employees

RIGHT JOIN departments USING (department\_id)

INNER JOIN locations USING (location\_id)

INNER JOIN countries USING (country\_id)

INNER JOIN regions USING (region\_id);

### Q8. List the employees who are in the upper half of their job’s salary range, include their job title, their salary and the mid-point of their job’s salary range.

SELECT first\_name, last\_name, job\_title, salary,

((max\_salary - min\_salary)\*0.5) + min\_salary AS "Salary Range

Mid-Point"

FROM employees

INNER JOIN jobs ON employees.job\_id = jobs.job\_id

AND employees.salary > ((max\_salary - min\_salary)\*0.5) +

min\_salary;

### Q9. List the names of all employees and the countries where they work.

SELECT first\_name, last\_name, country\_name

FROM employees

INNER JOIN departments USING(department\_id)

INNER JOIN locations USING(location\_id)

INNER JOIN countries USING(country\_id);