Databases 6G4Z0016 Labsheet

# Topic 3 – SQL Joins

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# Part One – Topics 1 & 2 Recap

### Q1: List the employees without a department

SELECT first\_name, last\_name, department\_id  
FROM Employees  
**[BLANK]**;

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### Q2: List the employees who earn a commission but don’t get a bonus

SELECT first\_name, last\_name, commission\_pct, bonus  
FROM Employees  
WHERE **[BLANK]**;

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### Q3: Calculate the number of employees with a phone number beginning with a 6

SELECT **[BLANK]** AS 'number of employees'  
FROM Employees  
**[BLANK]**;

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### Q4: List the employees hired in an even year, ordered by the month of hire

SELECT first\_name, last\_name **[BLANK]** AS 'year hired'  
FROM Employees  
WHERE **[BLANK]**  
ORDER BY **[BLANK]**;

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### Q5: List the seven highest paid employees after adding their bonus

SELECT first\_name, last\_name, **[BLANK]** AS 'full pay'  
FROM Employees  
**[BLANK]**;

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### Q6: List the employees whose surname begins with a vowel, in alphabetical order

SELECT first\_name, last\_name  
FROM Employees  
WHERE **[BLANK]**  
ORDER BY last\_name ASC;

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### Q7: List the employees in order from shortest surname to longest, resolve any ties using their surname (alphabetically).

SELECT first\_name, last\_name  
FROM Employees  
**[BLANK]**;

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### Q8: List the employees hired in the summer (June, July or August) and on an odd day of the month. Order the results from newest employee to oldest.

SELECT first\_name, last\_name, hire\_date  
FROM Employees  
**[BLANK]**ORDER BY hire\_date **[BLANK]**;

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# Part Two – Inner Joins

### Q1: List the employees and the maximum they could earn in their current job

SELECT first\_name, last\_name, salary, max\_salary  
FROM Employees  
INNER JOIN Jobs **[BLANK]**;

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### Q2: List the full address of each location, including their country and region name

SELECT city, country\_name, region\_name  
FROM Locations  
INNER JOIN Countries ON **[BLANK]**INNER JOIN Regions ON **[BLANK]**;

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### Q3: List every department and the name of their manager (if they don’t have a manager then leave the department off the list)

SELECT Departments.department\_id, Departments.department\_name, first\_name, last\_name  
FROM Departments  
**[BLANK]**;

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### Q4: List the employees and the address where they work

SELECT first\_name, last\_name, street\_address, postal\_code, city  
FROM Employees  
INNER JOIN Departments USING(department\_id)  
**[BLANK]**

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### Q5: Calculate the average salary of the IT department

SELECT AVG(salary) AS **[BLANK]**  
FROM Employees  
**[BLANK]**  
WHERE department\_name = 'IT';

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### Q6: List the names of the employees who manage a department

SELECT first\_name, last\_name  
FROM Employees  
**[BLANK]**;

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### Q7: List the employees who work in Canada

SELECT first\_name, last\_name  
FROM Employees  
**[BLANK]**  
WHERE country\_name = 'Canada';

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### Q8: List the names of the departments who employ at least one person earning between 4,000 and 8,000 inclusive.

SELECT DISTINCT department\_id, department\_name  
FROM Departments  
**[BLANK]**  
WHERE **[BLANK]**;

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# Part Three – Other Joins and Self Joins

### Q1: List all the departments and their manager names (if they don’t have a manager, include the department anyway

SELECT Departments.department\_id, Departments.department\_name, first\_name, last\_name  
FROM Departments  
**[BLANK]**;

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### Q2: List the employees and the name of their manager (leave the manager name blank if they haven't got one)

SELECT e.first\_name, e.last\_name, m.first\_name, m.last\_name  
FROM Employees AS e  
**[BLANK]**;

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### Q3: List every pair of employees whose surnames begin with the same letter

SELECT e.first\_name, e.last\_name, c.first\_name, c.last\_name  
FROM Employees AS e  
INNER JOIN Employees AS c **[BLANK]**  
WHERE e.employee\_id < c.employee\_id;

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### Q4: List all the jobs and (where you can) the locations where someone is employed in that job

SELECT DISTINCT job\_title, street\_address, postal\_code, city  
FROM Jobs  
**[BLANK]**;

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### Q5: List every pair of colleagues (ie they work in the same department)

SELECT e.first\_name, e.last\_name, c.first\_name, c.last\_name, department\_name  
FROM Employees AS e  
**[BLANK]**  
WHERE e.employee\_id < c.employee\_id;

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### Q6: List the employees and their job titles, but include every job title even if nobody works that job. Sort the results alphabetically by job title and then first name.

SELECT first\_name, last\_name, job\_title  
FROM Employees  
**[BLANK]**  
ORDER BY **[BLANK]**;

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### Q7: List every pair of employees where one of the pair earns between 1.75 and 2 times the salary of the other

SELECT e.first\_name, e.last\_name, e.salary, c.first\_name, c.last\_name, c.salary  
FROM Employees AS e  
**[BLANK]**  
WHERE c.salary **[BLANK]**;

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### Q8: Calculate how many departments there would be if the company expanded to have a branch of every department in every country.

SELECT **[BLANK]** AS 'number of departments'  
FROM Departments  
**[BLANK]**;

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# Part Four – Deliberate Practice

### Q1: List the employees and what percentage of the maximum salary for their job they earn (e.g. if they earn 5,000 and the maximum salary of their job is 10,000 then they earn 50% of their maximum). Order the results by that percentage from lowest to highest

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### Q2: List the three highest paid employees outside the Americas

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### Q3: List the employees who started work in the same year as their manager

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### Q4: List the employees and what percentage of their manager’s salary they earn (if they don’t have a manager, include them anyway)

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### Q5: Calculate the total salaries paid in Oxford

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### Q6: List any employees whose email is not their first initial in combination with their surname

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### Q7: List the countries where the company has an office

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### Q8: List the employees who are managers of other employees in alphabetical order of surname

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