Databases 6G4Z0016 Labsheet

# Topic 1 – Basic SELECT Statements

**Make sure you download the createHR.sql SQL script from Moodle and run it before starting the labsheet. Full instructions can be found as part of the *Getting Started with MySQL Workbench* document also on Moodle.**

## Familiarise yourself with the Human Resources (HR) ERD

Use the Entity Relationship Diagram (ERD) below to familiarise yourself with the tables, relationships and attributes in the example HR database we will use in the labs.

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# Part One – SELECT and SELECT Distinct

### Q1: List all the employees names

SELECT **[BLANK]**  
FROM Employees;

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SELECT first\_name, last\_name

FROM Employees;

### Q2: List all the employees, their salaries and bonuses

SELECT **[BLANK]**  
FROM Employees;

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SELECT first\_name, last\_name, salary, bonus

FROM Employees;

### Q3: List all the jobs available in the company

SELECT **[BLANK]**  
FROM Jobs;

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SELECT job\_title

FROM Jobs;

### Q4: List all the locations where the company has offices

SELECT street\_address, postal\_code, city, state\_province  
FROM **[BLANK]**;

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

FROM Locations;

### Q5: List all the department names

SELECT department\_name  
FROM **[BLANK]**;

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SELECT department\_name

FROM Departments;

### Q6: List all the states/provinces where the company has offices

SELECT state\_province  
**[BLANK]**;

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SELECT state\_province

from Locations;

### Q7: List all the different phone numbers in use

SELECT **[BLANK]**  
FROM Employees;

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SELECT phone\_number

FROM Employees;

### Q8: List all the different commission percentages available

SELECT **[BLANK]**FROM Employees;

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SELECT commission\_pct

FROM Employees;

# Part Two – ORDER BY and LIMIT

### Q1: List all the employees in alphabetical order by firstname

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

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SELECT first\_name, last\_name

FROM Employees

ORDER BY first\_name asc ;

### Q2: List all the employees in reverse alphabetical order by surname

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

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SELECT first\_name, last\_name

FROM Employees

ORDER by last\_name desc ;

### Q3: List the two jobs with the smallest earning potential

SELECT job\_title, max\_salary  
FROM Jobs  
**[BLANK]**;

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SELECT job\_title, max\_salary

FROM Jobs

Order by max\_salary asc

limit 2;

### Q4: List all the employees from highest-paid to lowest, in alphabetical order of surname if two are paid the same

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

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SELECT first\_name, last\_name, salary

FROM Employees

order by salary desc, last\_name asc;

### Q5: List all the department names in alphabetical order

SELECT department\_name   
FROM Departments  
**[BLANK]**;

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SELECT department\_name

FROM Departments

order by department\_name asc;

### Q6: List the three lowest-paid employees

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

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### SELECT first\_name, last\_name, salary

### FROM Employees

### order by salary asc

### limit 3;

### Q7: List the four employees who have worked at the company for the longest

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

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SELECT first\_name, last\_name, hire\_date

FROM Employees

order by hire\_date asc

limit 4;

### Q8: List all the jobs in order from the highest-possible paying to least

SELECT job\_title, min\_salary, max\_salary  
FROM Jobs  
**[BLANK]**;

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SELECT job\_title, min\_salary, max\_salary

FROM Jobs

order by min\_salary desc;

# Part Three – WHERE

### Q1: List all the employees employed in 2018 or earlier

SELECT first\_name, last\_name, hire\_date  
FROM Employees  
WHERE **[BLANK]**

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SELECT first\_name, last\_name, hire\_date

FROM Employees

WHERE hire\_date < '2018-12-30';

### Q2: List all the locations in the US

SELECT street\_address, postal\_code, city, state\_province, country\_id  
FROM Locations  
WHERE **[BLANK]**;

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SELECT street\_address, postal\_code, city, state\_province, country\_id

FROM Locations

WHERE country\_id = 'US';

### Q3: List all the employees whose managers are ID 100, 103 or 124

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

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SELECT first\_name, last\_name, manager\_ID

FROM Employees

WHERE manager\_ID = '100'

OR manager\_ID ='103'

or manager\_ID = '124';

### Q4: List all the employees earning 3,500 or less

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

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### SELECT first\_name, last\_name, salary

### FROM Employees

### WHERE salary <=3500;

### Q5: List all the employees employed between 2017 and 2020 inclusive

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

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SELECT first\_name, last\_name, hire\_date

FROM Employees

WHERE hire\_date > '2017-01-01'

and hire\_date < '2020-12-30';

### Q6: List all the employees who work a Sales job (i.e. their job\_id is SA\_REP or SA\_MAN)

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

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SELECT first\_name, last\_name, job\_id

FROM Employees

Where job\_id = 'SA\_REP'

or job\_id = 'SA\_MAN';

### Q7: List all the employees hired in 2020 or later who earn more than 5,500

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

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SELECT first\_name, last\_name, hire\_date, salary

FROM Employees

where hire\_date >= '2020,01,01';

### Q8: List all the employees who work as a manager (i.e. their job\_ID is MK\_MAN, SA\_MAN, ST\_MAN or AC\_MGR) and earn less than 10,000

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

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# Part Four – Deliberate Practice

### Q1: List the unique dates on which employees started work

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### Q2: List the employees from longest working to least

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### Q3: List the departments in order of their location ID and manager ID

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### Q4: List the jobs from lowest earning potential to highest, using maximum earning potential as a tie-breaker

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### Q5: List the employees who earn between 3,500 and 6,000 NOT inclusive

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### Q6: List the employees who do not earn between 7,500 and 10,000

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### Q7: List the job details for accounting jobs

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### Q8: List the employees who are a manager (i.e. their job\_id is something like ST\_MAN), or (if they’re not a manager) they started working for the company after 2013 and earn more than 10,000.

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