**6G4Z0016 Databases**

**Introduction to MariaDB Databases and SQL**

**Part 4: Filtering Recap and Ordering**

**Aim**

The aim of this session is to be able to write SQL queries involving:

* WHERE clauses to filter the rows
* ORDER BY clauses to sort the data

**Activities**

**Filtering Recap and Ordering**

1. Sometimes values in a data field are NULL values. Type in the query below and execute it.

SELECT last\_name, manager\_id

FROM employees

WHERE manager\_id IS NULL;

Try and understand what this query does. If you removed the last line i.e. the WHERE clause and re-ran the query, what would happen?

What result do you get if you replace the “IS” in the above query with “=”. What does that tell you?

1. Logical operators AND, OR and NOT allow us to combine two or more conditions to produce a single result. Type in and execute the following query.

SELECT employee\_id, last\_name, job\_id, salary  
FROM employees  
WHERE salary >=10000  
AND job\_id LIKE '%MAN%';

Write the last names of the employees returned below:

1. Modify the query from part (2) and replace the AND logical operator with an OR operator. Observe the new rows returned by the query.
2. Write a query to display the last names and the job\_id of employees who do NOT work as a ‘IT\_PROG’ or as a ‘ST\_CLERK’.
3. Rows returned by a query can be ordered using the ORDER BY Clause. Rows can be returned in ASCending order (the default) or DESCending order. Type in the following query and observe the order in which the rows are returned.

SELECT \*  
FROM employees  
ORDER BY hire\_date DESC;

1. Write a query to return the last names and salaries of all employees in department 90. Display the results in ASCending order by last name. Write your answer below:
2. Write a query to display the last name and salary of employees earning more than 12,000:
3. Write a query to display the last name and department number for employee number 176:
4. The HR department needs to find the high-salary and low-salary employees. Modify your query from (7) to display the last name and salary for all employees whose salary is not in the range 5,000 through 12,000:
5. Write a query to display the last name, job ID, and hire date for employees with the last names of Matos and Taylor. Order the query in ascending order by hire date.
6. Write a query to display the last name and department ID of all employees in departments 20 or 50 in ascending alphabetical order by name.
7. Modify your query from (9) to list the last name and salary of employees who earn between 5,000 and 12,000, and are in department 20 or 50. Label the columns *Employee* and *Monthly Salary*:
8. Write a query to display the last name, job, and salary for all employees whose job is that of a sales representative (SA\_REP) or a stock clerk (ST\_CLERK), and whose salary is not equal to 2,500, 3,500, or 7,000: