SLIIT UNI
THE KNOWLEDGE UNIVERSITY

Faculty of Computing

Year 2 Semester 1 (2025)

IT2140- Database Design and Development Lab Sheet 01

SQL Data Retrieval and Filtering using SELECT, WHERE, ORDER BY, GROUP BY, and HAVING Clauses (Single-Table Queries)

Objective

At the end of this lab session, you should be able to write the SELECT command with the WHERE, ORDER BY, aggregate functions, GROUP BY, and HAVING clauses for single-table queries.

Exercises (Section 1)— see Data_Set.sql for reference

Write SQL queries for the following:

(a) Retrieve all information of all employees.
(b) Display the names and salaries of employees who earn more than 50,000.
(c) Find employees whose names start with the letter 'A'.
(d) List the names and ages of employees younger than 30.
(e) Find the employees whose salary is between 20,000 and 60,000.
(f) Show employee names whose names contain the letter 'a'.
(g) Display the employee ID and name of those who are either aged 24 or 28.
(h) Select employees whose age is not between 25 and 35.
(i) List all employees whose salary is not null.

Exercises (Section 2) — see Data_Set.sql for reference

Write SQL queries for the following:

(a) List all employees sorted by their name (ename).
(b) Show all employees sorted in descending order of salary.
(c) Display employee details ordered ascending by age and descending by salary.
(d) Show all departments sorted by budget in descending order.
(e) List all work assignments ordered by pct_time.

Exercises (Section 3)— see Data_Set.sql for reference

Write SQL queries for the following:

(a) How many employees are in the organization?

(b) What is the total salary paid to all employees?

(c) What is the highest salary and the lowest salary among all employees?

(d) What is the average salary of employees?

(e) How many employees are aged below 30?

(f) What is the total number of departments?

(g) What is the maximum and minimum department budget?

(h) What is the total percentage of work assigned across all employees? (works table)

(i) What is the average work time (pct_time) per employee?

Exercises (Section 4)— see Data_Set.sql for reference

Write SQL queries for the following:

(a) What is the total salary paid to employees of each age group?

(b) Count the number of employees working in each department. Rename the count as 'Number of Employees'.

(c) How many employees earn a salary greater than 50,000?

(d) List all employees who earn more than 50,000, sorted by salary in ascending order.

Exercises (Section 5)— see Data_Set.sql for reference

Write SQL queries for the following:

(a) Display the department IDs where the number of employees is less than 3.

(b) List each manager and the number of departments they manage. Show only managers who manage more than 1 department. Sort by the number of departments ascending.

(c) Show each age group and the average salary of employees in that group. Display only age groups where the average salary is greater than 40,000.

(d) Find the number of work assignments per employee. Display employees with more than 2 assignments.

(e) List departments with a total budget greater than 1,000,000.

Submission Requirement:

Complete **Section 5** of this lab sheet and upload your SQL query answers to the **Git repository** provided by your instructor **before end of the day**.

File Naming Guidelines:

- Name your submission file as:
  Lab_1_Exercises_Section_5.sql

Additional Instructions:

- Ensure your SQL queries are well-formatted and include comments where necessary.
- Test your queries before uploading to confirm they run without errors.
- Commit and push your file to the correct Git repository and branch as instructed.