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CC-215-L: Database Systems Lab

BS(SE) Morning - Fall 2023, Semester Spring 2025

LAB – 05

The objective of this lab is to:

1. Previous Topics

2. Joins

Course & Lab Instructor: Dr. Asif Sohail

Hope you are fine and feeling yourself comfortable and exciting to play with Structured Query

Language (SQL) in this first lab.

You have been taught in the lecture about SQL and query writing. Why not to get all what you

have learned with a hands-on experience? So, let’s Start!

Allowed time: 1.5 hours

Note: Do follow these instructions while you are sitting in the lab and performing

the tasks.

1. Gossips are not allowed. So be gentle and do what you know. The lab is not to

deduct your sessional marks but to prepare you to achieve good marks in

quizzes, mids and finals and finally have good grades. So, try to perform all your

tasks in time and at your own.

2. Teacher assistants are for your help, so be nice with them. Respect them as they

are teaching you. Raise your hands if you have some problem and need help

from TA. Avoid calling them by raising your voice and disturbing the

environment of Lab.

3. You must revise the content of the past lectures before starting the lab, it will

help you resolve most of your general queries and give you the confidence that

you can do it.

4. Evaluation will be considered final and you cannot debate for the marks. So,

focus on performing the tasks when the time is given to you.

5. TA may deduct your marks for any kind of ill-discipline or misconduct from your

side.

6. Finally, pray before you start. And, Best of Luck!

● Kindly paste the query as well as result table screenshot as a result of

each task

Sample:

Faculty of Computing & Information Technology

Display All the Employees from emp table

Solution:

Select \* from emp

EMPNO

ENAME

JOB

MGR

HIREDATE

SAL

COMM

DEPTNO

7369

SMITH

CLERK

7902

12/17/1980

800

-

20

7499

ALLEN

SALESMAN

7698

02/20/1981

1600

300

30

7521

WARD

SALESMAN

7698

02/22/1981

1250

500

30

7566

JONES

MANAGER

7839

04/02/1981

2975

-

20

7654

MARTIN

SALESMAN

7698

09/28/1981

1250

1400

30

Total Lab Marks: 40

Task 01: [10 Marks]

1. Find out the number of employees under each manager (DON’T USE JOINS)

2. Retrieve a list of salary grades and the number of employees in each grade.

3. List (dname) from the "DEPT" table along with the total number of employees in each department

from the "EMP" table. Include departments with zero employees.

4. Show enames with their job titles and department names as shown below.

5. Display a list of employees (employee JOB and their salary grades).

6. Display The list of employees (employee name and job) along with their respective department

names.

7. List all employees whose location is 'dallas'.

8. Retrieve the count of employees whose salaries fall into each salary grade, as defined by the

salary range in the SALGRADE table. This shows the employee distribution across various pay

levels

Output:

9. List all unique job titles that are not 'CLERK' or 'SALESMAN'

10. Find out the number of employees under each manager (DON’T USE SELF JOIN)

Task 02: [10 Marks]

1. Display the name of the department which has not employee.

2. Write a Query that display that either the Department has Even number of Employees or Odd

number of Employees Show this in a derived column

3. We want to assign a special code for each employee in emp table based on its salary. The sal is

rounded it to its nearest thousand value. The special code is assigned on the basis of the following

rules: a. A for 1000 b. B for 2000 c. C for 3000 d. D for 4000 e. E for 5000 f. S for 0 Note: You are

not allowed to use decode or case for this question

Find departments where the total salary of employees is within a specific range (e.g., between

$10,000 and $50,000):

4. Find the department that spends the maximum percentage of its allocated budget (e.g.,

15000/17000) on salaries

5. Find departments with the most number of employees having the same job title

6. Get a list of employees who work in departments with fewer than 5 employees.

7. List the department names and the number of employees in each department, sorted by the

number of employees in descending order. Display "High" for departments with more than 5

employees and "Low" for departments with 5 or fewer employees.

8. Show the output like “Jones is a MANAGER of RESEARCH department”.

9. List the departments that have at least one employee who is a 'MANAGER' or an 'ANALYST'

10. List EMPNO, ENAME, JOB, SAL, DEPTNO, DNAME, RANK,TAX,NET\_SAL. Tax is a derived attribute

computed on the basis of GRADE. All the employees rank 1 are exempted from tax. For the

employees with GRADE 2,3, the tax rate is 10% of the salary. For the employees with GRADE

above 3, the tax rate is 12% of the salary. NET\_SAL is computed as SAL-TAX.

Task 03: [15 Marks]

1. Display how many employees fall into each salary grade per department (Matrix View).

2. Generate an experience rank: count how many employees were hired before each employee (based on

hiredate).

3. Show Department-wise Unique Job Diversity Score

(Count of unique job titles per department — hints at talent diversity.)

Task 04: [5 Marks]

Viva