DBs LabNo.5

Name: Umair Hafeez | CMS ID: 023-24-0473 | BSCS II

DATABASE SYSTEM

LAB No: 05

Objective of Lab No. 5:

After performing lab 5, students will be able to:

1. Introduction of JOIN

2. INNER JON

3. LEFT JOIN

4. RIGHT JOIN

5. CROSS JOIN

6. STRAIGHT JOIN

7. NATURAL JOIN

Lab Tasks

1. **Write a query in SQL to display the first name, last name, department number, and department name for each employee. (Sample tables: employees & departments).**
   Query: SELECT e.first_name, e.last_name, e.department_id, d.department_name
   FROM employees e
   LEFT JOIN departments d ON e.department_id = d.department_id;
   OR
   SELECT first_name,last_name,department_id,department_name from employees left join departments Using(department_id);

2. **Write a query to find the name (first_name, last_name), job, department ID and name of the department who works in London. (Sample tables: employees , locations & departments).**
   Query: Select first_name , last_name , department_name , job_id , city from employees
   Join departments using(department_id)
   Join locations using(location_id) Where city = "London";

3. **Write a query in SQL to display the first and last name, department, city, and state province for each employee. (Sample tables: employees , locations & departments).**

   Query: Select first_name , last_name , department_name, city, state_province
   from employees e join departments d on e.department_id = d.department_id
   join locations l on d.location_id = l.location_id;

4. **Write a query to find the employee id, name (last_name) along with their manager_id and name (last_name). (Sample tables: employees).**

Query: Select e1.employee_id, e1.last_name , e1.manager_id, e2.last_name

from employees e1 join employees e2

on e1.employee_id = e2.employee_id;

5. **Write a query to find the name (first_name, last_name) and hire date of the employees who was hired after 'Jones'. (Sample tables: employees).**
   Query: Select first_name, last_name , hire_date from employees where e1.last_name = "jones and e1.hire_date > e2.hire_date;
   'OR'
   Select first_name , last_name , hire_date From employees
   Where hire_date > (select hire_date from employees Where last_name = 'jones')
   Order by hire_date;

6. **Write a query to get the department name and number of employees in the department. (Sample tables: employees & departments).**
   Query: Select d.department_name ,Count(e.employee_id) As num_of_employees
   From departments d
   Left Join employees e ON d.department_id = e.department_id
   Group By d.department_name;

7. **Write a query to display the department ID and name and first name of manager. (Sample tables: employees & departments).**
   Select d.department_id , d.department_name , d.manager_id, e.first_name
   From departments d
   Inner Join employees e
   ON d.manager_id = e.employee_id;

8. **Write a query to display the department name, manager name, and city. (Sample tables: employees , locations & departments).**
   Query: SELECT d.department_name , e.first_name ,l.city
   FROM departments d
   JOIN employees e ON (d.manager_id = e.employee_id)
   JOIN locations l USING (location_id);

9. **Write a query to display the job history that were done by any employee who is currently drawing more than 10000 of salary. (Sample tables: employees & job_history).**
   Query: Select h. * from job_history h
   Join employees e
   On(h.employee_id = e.employee_id)
   Where salary > 10000;

10. **Write a query to display the first name, last name, hire date, salary of the manager for all managers whose experience is more than 15 years. (Sample tables: employees & departments).**

Query: SELECT e.first_name,
e.last_name,
e.hire_date,
e.salary,
(DATEDIFF(NOW(), e.hire_date) / 365) AS Experience
FROM departments d
JOIN employees e
ON d.manager_id = e.employee_id
WHERE (DATEDIFF(NOW(), e.hire_date) / 365) > 15;

11. **Write a query in SQL to display the name of the department, average salary and number of employees working in that department who got commission. (Sample tables: employees & departments).**
Query: Select department_name , AVG(Salary) , COUNT(Commission_pct)
From departments Join employees Using (department_id)
Group By department_name;

12. **Write a query in SQL to display the name of the country, city, and the departments which are running there. (Sample tables: countries , locations & departments).**
Query: SELECT country_name ,city, department_name
FROM Countries
Join locations Using (country_id)
Join departments Using (location_id);

13. **Write a query in SQL to display department name and the full name (first and last name) of the manager. (Sample tables: employees & departments).**
Query: Select
d.department_name ,e.first_name ,e.last_name From departments d
Join employees e
ON(d.manager_id = e.employee_id);

14. **Write a query in SQL to display the details of jobs which was done by any of the employees who is presently earning a salary on and above 12000. (Sample tables: employees & job_history).**
Query: Select h. * From job_history h
Join employees e
ON(h.employee_id = e.employee_id)
Where salary >= 12000;

15. **Write a query in SQL to display the full name (first and last name), and salary of those employees who working in any department located in London. (Sample tables: employees , locations & departments).**
Query: SELECT first_name , last_name , salary,city From employees
Join departments d Using(department_id)

Join locations Using (location_id) Where city = “London”;

16. **Write a query to display job title, employee name, and the difference between salary of the employee and minimum salary for the job. (Sample tables: employees & jobs).**
    Query: SELECT j.job_title,
        e.first_name,
        (e.salary - (SELECT MIN(salary) FROM employees)) AS salary_difference
    FROM employees e
    JOIN jobs j USING (job_id);

17. **Write a query to display the job title and average salary of employees. (Sample tables: employees & jobs).**
    Query: Select job_title , AVG(salary) From employees
    Natural Join jobs
    GROUP BY job_title;

18. **Write a query to find the employee ID, job title, number of days between ending date and starting date for all jobs in department 90 from job history. (Sample tables: jobs & job_history).**
    Query: Select employee_id, job_title, (end_date - start_date) Days From Jobs
        Natural Join job_history
        where department_id = 90;