Ex. No : 8

Implementation of Order By, Group By & Having clause

CO2: Construct queries using SQL for database creation, interaction, modification, and updation. (Cognitive Knowledge Level: Apply)

AIM

Create two tables

Dept(Department_Id, Department_Name , Manager_id, Loc)

Emp(Emp_no , Emp_name,Job , Salary , Hiredate,Comm , Depno)

MANAGER_ID is the empno of the employee whom the employee reports to. DEPTNO is a foreign key.Insert these values into department table

1) Display the name and salary for all employees whose salary is not in the range of 5000 and 35000

2) Display the employee name, job ID, and start date of employees hired between February 20, 1990, and May 1, 1998. Order the query in ascending order by start date.

3) list the name and salary of employees who earn between 5,000 and12,000, and are in department 2 or 4. Label the columns Employee and Monthly Salary,respectively.

4)Display the name and hire date of every employee who was hired in 1994.

5). Display the name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.

6) Display the name and job title of all employees who do not have a manager.

7). Display the names of all employees where the third letter of the name is an *a*.

8). Display the name of all employees who have an *a* and an *e* in their name.

9). Display the name, job, and salary for all employees whose job is sales representative or stock clerk and whose salary is not equal to 2,0000, 4000, or 7,000.

10)Write a query that displays the employee's names with the first letter capitalized and all other letters lowercase and the length of the name for all employees whose name starts with *J*, *A*, or *M*. Give each column an appropriate label. Sort the results by the employees' names.

11)For each employee, display the employee's name, and calculate the number of months between today and the date the employee was hired and years worked. Label the column

MONTHS_WORKED. Order your results by the number of months employed. Round the number of months and year up to the closest whole number.

12). Write a query to display the name, department number, and department name for all employees.

13) Create a query to display the name and hire date of any employee hired after employee Mathew

14) Display the names and hire dates for all employees who were hired before their managers, along with their manager's names and hire dates. Label the columns Employee, EmpHired, Manager, and Mgr Hired, respectively.

15) Write a query to display the number of people with the same job.
16). Display the manager number and the salary of the lowest paid employee for that manager.Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is less than 6,000. Sort the output in descending order of salary.

17. Write a query to display each department's name, location, number of employees, and the average salary for all employees in that department. Label the columns Name, Location, Number of People, and Salary, respectively. Round the average salary to two decimal places.

18). Write a query to display the name and hire date of any employee in the same department as amit. Exclude JOHN.

19. Write a query that displays the employee numbers names of all employees who work in a department with any employee whose name contains a *u*.

20)display employee name and department name of all employees that work in a department that has at least 3 employees. Order the list in alphabetical order first by department name, then by employee name.

21. Write a query to list the length of service of the employees (of the form n years and m months).

COMMANDS

CREATE TABLE dept(department_id int primary key , department_name VARCHAR(20) NOT NULL , manager_id int, loc varchar(10));

create table emp(EMP_no int Primary Key,Emp_Name Varchar(10),Job Varchar(10),Hiredate Date,Salary Float,Comm Float,Depno Int References Dept(Department_Id));

INSERT INTO emp VALUES(1,'Steven', 'Marketing','06-jan-1995',24000, NULL,2);
INSERT INTO emp VALUES(2,'Neena', 'FI_ACCOUNT', '06-feb-1987',34000, NULL,1);
INSERT INTO emp VALUES(3,'Lex', 'FI_MGR', '06-jan-1980',240000, NULL,1);

INSERT INTO emp VALUES(4,'Alexander', 'Sa_Rep', '06-jun-1987',20000, NULL,4);
INSERT INTO emp VALUES(5,'Bruce', 'IT_PROG', '06-jul-1990',24000, NULL,4);
INSERT INTO emp VALUES(6,'David', 'IT_PROG', '06-sep-1991',22000, NULL,4);
INSERT INTO emp VALUES(7,'vipin', 'IT_PROG', '16-nov-1987',28000, NULL,4);
INSERT INTO emp VALUES(8,'Diana', 'Pur_Man', '26-jan-1987',24000, NULL,3);
INSERT INTO emp VALUES(9,'John', 'FI_ACCOUNT', '1-dec-1992', 24000, NULL,1);
INSERT INTO emp VALUES(10,'Ismael', 'CLERK', '29-mar-1994', 4000, NULL,3);
INSERT INTO emp VALUES(11,'Mathew', 'CLERK', '12-oct-1992', 46000, 200,3);
INSERT INTO emp VALUES(12,'Hayes', 'Marketing', '21-apr-1998',14000, 1000,2);
INSERT INTO emp VALUES(13,'sarun', 'Marketing', '18-may-1993',18000, NULL,2);
INSERT INTO emp VALUES(14,'Henin','FI_MGR', '06-aug-1980',240000, NULL,1);
INSERT INTO emp VALUES(15,'Greesh','Clerk', '06-aug-1980',240000, NULL,5);

INSERT INTO dept values(1, 'Administration', null, 'Boston');
INSERT INTO dept values(2, 'Marketing', null, 'Boston');
INSERT INTO dept values(3, 'Purchase', null, 'perryridge');
INSERT INTO dept values(4, 'Programming',null, 'Hudson');
INSERT INTO dept values(5, 'HR', null, 'Hudson');

Alter table dept add foreign key(manager_id references emp(emp_id));

Update dept set manager_id=2 **where** department_id=1;
Update dept set manager_id=1 **where** department_id=2;
Update dept set manager_id=8 **where** department_id=3;
Update dept set manager_id=7 **where** department_id=4;

1) Display the name and salary for all employees whose salary is not in the range of 5000 and 35000

SELECT emp_name, salary FROM emp WHERE salary NOT BETWEEN 5000 AND 35000;

EMP_NAME	SALARY
Lex	240000
Ismael	4000
Mathew	46000
Henin	240000

2) Display the employee name, job ID, and start date of employees hired between February 20, 1990, and May 1, 1998. Order the query in ascending order by start date.

SELECT emp_name, job, hiredate FROM emp WHERE hiredate BETWEEN '20-Feb-1990' AND '01-May-1998' ORDER BY hiredate

EMP_NAME	JOB	HIREDATE
Bruce	IT_PROG	06-JUL-90

David	IT_PROG	06-SEP-91
Mathew	CLERK	12-OCT-92
John	FI_ACCOUNT	01-DEC-92
Steven	Marketing	18-MAY-93
Ismael	CLERK	29-MAR-94
Hayes	Marketing	21-APR-98

3) list the name and salary of employees who earn between 5,000 and12,000, and are in department 2 or 4. Label the columns Employee and Monthly Salary,respectively.

SELECT emp_name "Employee", salary "Monthly Salary" ,depno FROM emp WHERE salary BETWEEN 5000 AND 30000 AND depno IN (2, 4);

Employee	**Monthly Salary**
==========	==========
Alexander	20000
Bruce	24000
vipin	28000
Hayes	14000
Steven	18000
David	22000

4)Display the name and hire date of every employee who was hired in 1994.
SELECT emp_name, hiredate FROM emp WHERE hiredate LIKE '%94';

EMP_NAME	**HIREDATE**
==========	=========
Ismael	29-MAR-94

5). Display the name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.

SELECT emp_name, salary, comm FROM emp WHERE comm >0
ORDER BY salary DESC, comm DESC;

Or

SELECT emp_name, salary, comm FROM emp WHERE comm IS NOT NULL
ORDER BY salary DESC, comm DESC;

EMP_NAME	**SALARY**	**COMM**
==========	==========	==========
Mathew	46000	200
Hayes	14000	1000

6) Display the name and job title of all employees who do not have a manager.

SELECT emp_name, job FROM emp,dept WHERE manager_id IS NULL and emp.depno=dept.department_id;

EMP_NAME	JOB
Greesh	Clerk

7). Display the names of all employees where the third letter of the name is an *a*.

SELECT emp_name FROM emp WHERE emp_name LIKE '__a%';

EMP_NAME
Diana

8). Display the name of all employees who have an *a* and an *e* in their name.

SELECT emp_name FROM emp WHERE emp_name LIKE '%a%' AND emp_name LIKE '%e%';

EMP_NAME
Neena
Alexander
Ismael
Mathew
Hayes

9). Display the name, job, and salary for all employees whose job is sales representative or stock clerk and whose salary is not equal to 2,0000, 4000, or 7,000.

SELECT emp_name, job, salary FROM emp WHERE job IN ('Sa_rep', 'CLERK') AND salary NOT IN (2000, 4000, 7000);

EMP_NAME	JOB	SALARY
Alexander	Sa_rep	20000
Mathew	CLERK	46000

10)Write a query that displays the employee's names with the first letter capitalized and all other letters lowercase and the length of the name for all employees whose name starts with *J, A,* or *M*. Give each column an appropriate label. Sort the results by the employees' names.

SELECT INITCAP(emp_name) "Name", LENGTH(emp_name) "Length" FROM emp

WHERE emp_name LIKE 'J%' OR emp_name LIKE 'M%' OR emp_name LIKE 'A%'ORDER BY emp_name;

Name	Length
Alexander	9
John	4
Mathew	6

11)For each employee, display the employee's name, and calculate the number of months between today and the date the employee was hired and years worked. Label the column MONTHS_WORKED. Order your results by the number of months employed. Round the number of months and year up to the closest whole number.

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SELECT emp_name**, ROUND(MONTHS_BETWEEN(SYSDATE, hiredate))** MONTHS_WORKED**, round(MONTHS_BETWEEN(SYSDATE, hiredate)/12,2) "NO: Of YEARS" FROM** emp **ORDER BY MONTHS_BETWEEN(SYSDATE, hiredate);**

12). Write a query to display the name, department number, and department name for all employees.

SELECT emp.emp_name, emp.depno, dept.department_name FROM emp , dept WHERE emp.depno = dept.department_id order by dept.department_name;

13) Create a query to display the name and hire date of any employee hired after employee Mathew

SELECT emp_Name, HireDate **FROM** Emp **WHERE** ((HireDate)>**any(SELECT** HireDate **FROM** Emp **WHERE** emp_Name='Mathew'**));**

EMP_NAME	HIREDATE
Hayes	21-APR-98
Ismael	29-MAR-94
Steven	18-MAY-93
John	01-DEC-92

14) Display the names and hire dates for all employees who were hired before their managers, along with their manager's names and hire dates. Label the columns Employee, EmpHired, Manager, and Mgr Hired, respectively.

SELECT emp.emp_name employee , emp.hiredate "EMP HIRE DATE", emp.salary, manager.emp_name manager, manager.hiredate "MANAGER HIRE DATE" **FROM emp , dept, emp manager WHERE dept.manager_id = manager.emp_no and emp.depno=dept.department_id and emp.hiredate < manager.hiredate;**

EMPLOYEE	EMP HIRE DATE	MANAGER	MANAGER HIRE DATE
Lex	06-JAN-80	Neena	06-FEB-87
Alexander	06-JUN-87	vipin	16-NOV-87
Steven	18-MAY-93	Steven	06-JAN-95
Henin	06-AUG-80	Neena	06-FEB-87

15) Write a query to display the number of people with the same job.
SELECT job, **COUNT(*)** "No: of Jobs" **FROM** emp **GROUP BY** job;

JOB	NO: OF JOBS
IT_PROG	4
Pur_Man	1
CLERK	2
FI_ACCOUNT	2
FI_MGR	2
Marketing	3

16). Display the manager number and the salary of the lowest paid employee for that manager.Exclude anyone whose manager is not known. Exclude any groups where the minimum salary is less than 6,000. Sort the output in descending order of salary.

SELECT min(salary) "MINIMUM SALARY",manager_id, department_name **FROM** emp,dept **where** emp.depno=dept.department_id **AND** manager_id **IS NOT NULL**
GROUP BY manager_id, department_name **HAVING MIN(salary) > 6000**
ORDER BY "MINIMUM SALARY" **DESC**

MINIMUM SALARY	MANAGER_ID	DEPARTMENT_NAME
24000	2	Administration
20000	7	Programming
14000	1	Marketing

select emp_name "manager",emp.depno,emp.emp_no, (**select** min(salary) **from** emp e **where** (emp.depno=e.depno) **group by** e.depno having min(salary)>15000) "salary" **from** emp,dept **where** emp.emp_no=dept. MANAGER_ID and emp.depno=dept. DEPARTMENT_ID

select emp_name "manager", (select min(salary) from emp e where (emp.depno=e.depno) group by e.depno having min(salary)>13000) "salary" from emp,dept where emp.emp_no=dept. MANAGER_ID and emp.depno=dept. DEPARTMENT_ID

select min(emp.salary) from emp,emp e where (emp.depno=e.depno) group by e.depno having min(emp.salary)>15000

17. Write a query to display each department's name, location, number of employees, and the average salary for all employees in that department. Label the columns Name, Location, Number of People, and Salary, respectively. Round the average salary to two decimal places.

SELECT d.department_name "Name", d.loc "Location ",
COUNT(*) "Number of People", ROUND(AVG(salary),2) "Salary"
FROM emp e, dept d
WHERE e.depno = d.department_id GROUP BY d.department_name, d.loc;

Name	Location	Number of People	Salary
Administration	Boston	4	134500
Marketing	Boston	3	18666.67
Programming	Hudson	4	23500
Purchase	perryridge	3	24666.67

18). Write a query to display the name and hire date of any employee in the same department as amit. Exclude JOHN.

SELECT emp_name, hiredate **FROM** emp **WHERE** depno = **(SELECT** depno **FROM** emp **WHERE** emp_name = 'John'**) and** emp_name<>'John'**;**

EMP_NAME	HIREDATE
Neena	06-FEB-87
Lex	06-JAN-80
Henin	06-AUG-80

19. Write a query that displays the employee numbers names of all employees who work in a department with any employee whose name contains a *u*.

SELECT emp_no, emp_name,department_name **FROM** emp,dept
WHERE depno **IN (SELECT depno FROM** emp **WHERE** emp_name **like '%u%') and** emp.depno=dept.department_id**;**

EMP_NO	EMP_NAME	DEPARTMENT_NAME
6	David	Programming
7	vipin	Programming
5	Bruce	Programming
4	Alexander	Programming

20)display employee name and department name of all employees that work in a department that has at least 3 employees. Order the list in alphabetical order first by department name, then by employee name.

SELECT Emp_name, department_name **FROM** emp, dept **WHERE** emp.depno = dept.department_id **AND** emp.depno in (**SELECT** depno **FROM** emp **GROUP BY** depno **HAVING** count(*) >4) **ORDER BY** department_name, emp_name;

21. Write a query to list the length of service of the employees (of the form n years and m months).

SELECT emp_name "employee",to_char(trunc(months_between(sysdate,hiredate)/12))||' years '|| to_char(trunc(mod(months_between (sysdate, hiredate),12)))||' months ' "length of service" **FROM** emp;