Database Systems

Fall 2020

LAB – 06

The objective of this lab is to:

- SQL Self Joins
- Previous Content (Group by, Order by, Column Alias, Table Alias)

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Instructions:

- Work on this lab individually. Discussion is not allowed.
- Evaluation of tasks will be conducted in lab.
- Anyone caught being indulged in the act of plagiarism would be awarded an "F" grade in this lab.
- 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.
- **Allowed time: 1 hour and 15 minutes**
- Best of Luck!

Note: You will be using following tables in your lab tasks.

- EMP (EMPNO, ENAME, JOB, SAL, HIREDATE, COMM, MGR, DEPTNO)
- DEPT (DEPTNO, DNAME, LOC)
- SALGRADE (Grade, HISAL, LOSAL)
- PUCIT (STD_NAME)

Perform the following tasks

Task 01: (Joins) [12 Marks]

1. Find the manager name of 'scott' **[2 Marks]**
   Query:
   Select e.ename as "Employee Name", m.ename as "Manager Name" from emp e join emp m
   on e.mgr = m.empno
   where lower(e.ename) = 'scott'
   Screenshot:

Employee Name	Manager Name
SCOTT	JONES

2. Display the manager name, manager number and salary of the lowest paid employee for the manager. Exclude anyone whose manager is not known. Sort the output in descending order of the salary**. [2 Marks]**

Query:

```
Select m.ename , e.mgr , min(e.sal) as "min_sal" from emp e join emp m
on e.mgr = m.empno
where e.mgr is not null
group by e.mgr, m.ename
order by "min_sal" desc
```

Screenshot:

ENAME	MGR	min_sal
JONES	7566	3000
KING	7839	2450
SCOTT	7788	1100
BLAKE	7698	950
FORD	7902	800

3. Create a query to display the deptno, the salary for that job based on the department number and the total salary all departments group by jobs. **[2 Marks]**

DEPTNO	CLERK SAL	ANALYST SAL	SALESMAN SAL	MANAGER SAL	CLERK SAL	SUM(SAL)
30	950	-	5600	2850	-	9400
10	-	-	-	2450	-	7450
20	1900	6000	-	2975	-	10875

Query:

```
Select deptno , Sum(Decode(job, 'CLERK', sal)) "CLERK SAL" , SUM(Decode(job,
'ANALYST', SAL)) "ANALYST SAL" , SUM(Decode(job, 'SALESMAN', SAL)) "SALESMAN
SAL",
Sum(Decode(job, 'MANAGER', sal)) "MANAGER SAL", Sum(Decode(job, 'CLERK', sal))
"CLERK SAL" , sum(sal)
```

from emp
group by deptno
Screenshot:

DEPTNO	CLERK SAL	ANALYST SAL	SALESMAN SAL	MANAGER SAL	CLERK SAL	SUM(SAL)
30	950	-	5600	2850	-	9400
10	-	-	-	2450	-	7450
20	1900	6000	-	2975	-	10875

4. Write the query to display all records having same job as 'FORD'. **[2 Marks]**
   Query:
   Select e.ename , e.job , f.ename, f.job from emp e join emp f
   on f.ename = 'FORD' and f.job = e.job and f.ename <> e.ename
   Screenshot:

ENAME	JOB	ENAME	JOB
SCOTT	ANALYST	FORD	ANALYST
FORD	ANALYST	FORD	ANALYST

5. Write a query to display first half of employee name separated by colon ':' followed by second half of manager name**. [2 Marks]**
   Query:
   Select concat(substr(e.ename, 1, ceil(length(e.ename)/2)) , concat(':', substr(m.ename, length(m.ename)/2+1))) as "EMP NAME : MGR NAME" from emp e join emp m
   on e.mgr = m.empno
   Screenshot:

EMP NAME : MGR NAME
SCO:NES
FO:NES
ALL:AKE

WA:AKE
MAR:AKE
TUR:AKE
JAM:AKE
ADA:OTT
JON:NG
BLA:NG

6. Write a query to display those employees name having same salary in two separate columns. **[2 marks]**
   Query:
   Select e1.ename , e2.ename from emp e1 join emp e2
   on e1.sal = e2.sal and e1.empno != e2.empno
   Screenshot:

ENAME	ENAME
MARTIN	WARD
WARD	MARTIN
FORD	SCOTT
SCOTT	FORD

Task 02: (Subquery) [13 Marks]

1. Find the deptno having maximum number of employees. **[2 Marks]**

DEPTNO	Max No. Of Employees
30	6

Query:

```
Select deptno, count(empno) "Max No. Of Employees" from emp e
group by deptno
```

having count(empno) = (Select Max(emp_count)
from (Select Count(empno) as emp_count from emp
GROUP BY deptno))

Screenshot:

DEPTNO	Max No. Of Employees
30	6

2. Write a query to show those employees hired after 'CLARK'**. [2 Marks]**
   Query:

   Select ename, to_char(hiredate, 'Month dd, yyyy') as "Hire Date" from emp where hiredate > (Select hiredate from emp where ename = 'CLARK')

   Screenshot:

ENAME	Hire Date
MARTIN	September 28, 1981
SCOT	December 09, 1982
KING	November 17, 1981
TURNER	September 08, 1981
ADAMS	January 12, 1983
JAMES	December 03, 1981
FORD	December 03, 1981

3. Find the maximum and minimum sal from employee table in following format **[1 Mark]**

TYPE	MAX(SAL)
MAXIMUM	5000
MINIMUM	800

Query:

```
Select 'MAXIMUM' "TYPE", max(sal) from emp
union
Select 'MINIMUM' "TYPE", min(sal) from emp
```

Screenshot:

TYPE	MAX(SAL)
MAXIMUM	5000
MINIMUM	800

4. Write a query to display the name of manager who is supervising 2 or less employees **[2 Marks]**

   Query:

   ```
   select ename from emp where empno in (select mgr from emp group by
   mgr having count(*) < 2)
   ```

   Screenshot:

ENAME
SCOTT
FORD

5. Display the deptno, dname, loc of that department in which all the employees earn no commission. **[2 Marks]**

   Query:

   ```
   select dname,loc,deptno from dept where deptno in (
   select deptno from emp having sum(comm) is null group by deptno)
   ```

   Screenshot:

DNAME	LOC	DEPTNO
ACCOUNTING	NEW YORK	10
RESEARCH	DALLAS	20

6. List Those Department Who Does Not Have Any Employees using subquery.

   Query:

select dname from dept where deptno != all(select distinct deptno from emp);

Screenshot:

DNAME
OPERATIONS

7. Get those employees who have commission greater than any employee of department no. 20. **[2 Marks]**

   Query:

   select * from emp
   where comm > any (select comm from emp where deptno = 20)

   Screenshot:

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7654	MARTIN	SALESMAN	7698	09/28/1981	1250	1400	30
7521	WARD	SALESMAN	7698	02/22/1981	1250	500	30
7499	ALLEN	SALESMAN	7698	02/20/1981	1600	300	30

**********Best Of Luck **********