Advanced Database Management System LAB
(Experiment)

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Batch - B4

Title: Use of Inbuilt functions and relational algebra operation

Objective: To understand the use of inbuilt function and relational algebra with sql query.

- **Create the following two tables (EMP and DEPT)**

CODE : (EMP TABLE)

select * from scott.emp

OUTPUT :

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7788	SCOTT	ANALYST	7566	19-APR-87	3000	-	20
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20
7369	SMITH	CLERK	7902	17-DEC-80	800	-	20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-87	1100	-	20
7900	JAMES	CLERK	7698	03-DEC-81	950	-	30
7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10

Download CSV

14 rows selected.

CODE : (DEPT TABLE)

select * from scott.dept

OUTPUT :

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

Download CSV
4 rows selected.

- **Write the Nested Queries for the following queries.**

1. List the details of the emps whose Salaries more than the employee BLAKE.

CODE :

Select * from scott.emp
where emp.sal > (select emp.sal from scott.emp where emp.ename = 'BLAKE');

OUTPUT :

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7788	SCOTT	ANALYST	7566	19-APR-87	3000	-	20
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20

Download CSV
4 rows selected.

2. List the emps whose Jobs are same as ALLEN.

CODE :

```
select emp.ename from scott.emp
where emp.job = (select emp.job from scott.emp where emp.ename = 'ALLEN');
```

OUTPUT :

ENAME
ALLEN
WARD
MARTIN
TURNER

Download CSV
4 rows selected.

3. List the Emps whose Sal is same as FORD or SMITH in desc order of Names.

CODE :

```
select emp.ename from scott.emp
where emp.sal in (select emp.sal from scott.emp where emp.ename = 'FORD' OR
emp.ename = 'SMITH')
and emp.ename not in ('FORD', 'SMITH')
order by emp.sal desc;
```

OUTPUT :

ENAME
SCOTT

Download CSV

4. List the emps Whose Jobs are same as MILLER or Sal is more than ALLEN.

CODE :

```
Select * from scott.emp
where emp.job = (select emp.job from scott.emp where emp.ename= 'MILLER')
OR emp.sal > (select emp.sal from scott.emp where emp.ename = 'ALLEN');
```

OUTPUT :

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7788	SCOTT	ANALYST	7566	19-APR-87	3000	-	20
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20
7369	SMITH	CLERK	7902	17-DEC-80	800	-	20
7876	ADAMS	CLERK	7788	23-MAY-87	1100	-	20
7900	JAMES	CLERK	7698	03-DEC-81	950	-	30
7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10

Download CSV

10 rows selected.

5. Find the highest paid employee of sales department.

CODE :

```
select emp.ename from scott.emp
where emp.sal = (select max(emp.sal) from scott.emp);
```

OUTPUT :

ENAME
KING

Download CSV

6. List the employees who are senior to most recently hired employee working under king.

CODE :

```
Select * from scott.emp
where emp.hiredate < (Select max(emp.hiredate) from scott.emp)
and mgr = (select emp.empno from scott.emp where emp.ename = 'KING');
```

OUTPUT :

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20

Download CSV
3 rows selected.

7. List the names of the emps who are getting the highest sal dept wise.

CODE :

```
select emp.ename,emp.deptno from scott.emp
where emp.sal in (select max(emp.sal) from scott.emp group by deptno);
```

OUTPUT :

ENAME	DEPTNO
KING	10
BLAKE	30
SCOTT	20
FORD	20

Download CSV
4 rows selected.

8. List the emps whose sal is equal to the average of max and minimum

CODE :

```
select * from scott.emp
where emp.sal = (select (max(emp.sal)+min(emp.sal))/2 from scott.emp);
```

Explanation -
Highest salary is 5000 and Lowest salary is 500
Avg = (5000+500)/2 = 2750

And in our data, no such salary exist

OUTPUT :

```
no data found
```

9. List the emps who joined in the company on the same date.

CODE :

```
select * from scott.emp
where emp.hiredate in (select emp.hiredate from scott.emp where emp.empno !=
emp.empno);
```

10. Find out the emps who joined in the company before their Managers.

CODE :

```
select * from scott.emp
where emp.hiredate < (select emp.hiredate from scott.emp where emp.empno =
emp.mgr);
```

OR

```
select* from scott.emp
where emp.mgr = emp.empno and emp.hiredate < emp.hiredate ;
```