NAME-LEPAKSHI JAGMOHAN

RNO-R2142230040

SAPID-500119039

BATCH-2

DATABASE MANAGEMENT LAB

EXPERIMENT 6

Title: Use of Inbuilt functions and relational algebra operation

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

```
CREATE DATABASE lab6;
USE lab6;
```

1. **Create the following two tables (EMP and DEPT)**

EMP TABLE

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	500	800	20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850		30
7782	CLARK	MANAGER	7839	09-JUN-81	2450		10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000		20
7839	KING	PRESIDENT		17-NOV-81	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100		20
7900	JAMES	CLERK	7698	03-DEC-81	950		30
7902	FORD	ANALYST	7566	03-DEC-81	3000		20
7934	MILLER	CLERK	7782	23-JAN-82	1300		10

```sql
CREATE TABLE EMP (
    EMPNO INT,
    ENAME VARCHAR(50),
    JOB VARCHAR(50),
    MGR INT,
    HIREDATE DATE,
    SAL INT,
    COMM INT,
    DEPTNO INT
);
```

```sql
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO) VALUES
(7369, 'SMITH', 'CLERK', 7902, '1980-12-17', 500, 800, 20),
(7499, 'ALLEN', 'SALESMAN', 7698, '1981-02-20', 1600, 300, 30),
(7521, 'WARD', 'SALESMAN', 7698, '1981-02-22', 1250, 500, 30),
(7566, 'JONES', 'MANAGER', 7839, '1981-04-02', 2975, NULL, 20),
(7654, 'MARTIN', 'SALESMAN', 7698, '1981-09-28', 1250, 1400, 30),
(7698, 'BLAKE', 'MANAGER', 7839, '1981-05-01', 2850, NULL, 30),
(7782, 'CLARK', 'MANAGER', 7839, '1981-06-09', 2450, NULL, 10),
(7788, 'SCOTT', 'ANALYST', 7566, '1982-12-09', 3000, NULL, 20),
(7839, 'KING', 'PRESIDENT', NULL, '1981-11-17', 5000, NULL, 10),
(7844, 'TURNER', 'SALESMAN', 7698, '1981-09-08', 1500, 0, 30),
(7876, 'ADAMS', 'CLERK', 7788, '1983-01-12', 1100, NULL, 20),
(7900, 'JAMES', 'CLERK', 7698, '1981-12-03', 950, NULL, 30),
(7902, 'FORD', 'ANALYST', 7566, '1981-12-03', 3000, NULL, 20),
(7934, 'MILLER', 'CLERK', 7782, '1982-01-23', 1300, NULL, 10);
```

DEPT TABLE

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

```sql
CREATE TABLE DEPT (
    DEPTNO INT,
    DNAME VARCHAR(50),
    LOC VARCHAR(50)
);
```

```sql
INSERT INTO DEPT (DEPTNO, DNAME, LOC) VALUES
(10, 'ACCOUNTING', 'NEW YORK'),
(20, 'RESEARCH', 'DALLAS'),
(30, 'SALES', 'CHICAGO'),
(40, 'OPERATIONS', 'BOSTON');
```

Write the Queries for the following using In-built functions.

1. Retrieve average salary of all employees.

```sql
SELECT AVG(SAL) AS avg_salary FROM EMP;
```

2. Retrieve the number of employees.

```sql
SELECT COUNT(*) AS employee_count FROM EMP;
```

3. Retrieve distinct number of employee.

```sql
SELECT COUNT(DISTINCT ENAME) AS distinct_employee_count FROM EMP;
```

4. Retrieve total salary of employee group by job.

```sql
SELECT JOB, SUM(SAL) AS total_salary FROM EMP GROUP BY JOB;
```

5. Display the employee information with maximum salary.

```sql
SELECT * FROM EMP WHERE SAL = (SELECT MAX(SAL) FROM EMP);
```

6. Find the highest paid employee in department 10.

```sql
SELECT * FROM EMP WHERE DEPTNO = 10 AND SAL = (SELECT MAX(SAL) FROM EMP WHERE DEPTNO = 10);
```

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

```sql
SELECT * FROM EMP WHERE SAL = (SELECT (MAX(SAL) + MIN(SAL)) / 2 FROM EMP);
```

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

```sql
SELECT ENAME, HIREDATE FROM EMP GROUP BY HIREDATE HAVING COUNT(*) > 1;
```

9. Display the employee names in upper and lower case.

```sql
SELECT UPPER(ENAME) AS upper_name, LOWER(ENAME) AS lower_name FROM EMP;
```

10. find the date of 3 days later from hiredate.

```sql
SELECT ENAME, HIREDATE, DATE_ADD(HIREDATE, INTERVAL 3 DAY) AS three_days_later FROM EMP;
```