

SELECT ENAME, SAL FROM SCOTT.EMP;

SELECT ENAME, DEPTNO FROM SCOTT.EMP;

SELECT \* FROM SCOTT.EMP;

SELECT COMM, SAL, MGR, ENAME FROM SCOTT.EMP;

#### **ALIAS :**

SELECT ENAME, SAL AS SALARY, COMM AS COMMISSION, MGR AS MANAGER FROM SCOTT.EMP;

SELECT ENAME, SAL SALARY, COMM COOMI, MGR MANAGER FROM SCOTT.EMP;

SELECT ENAME "EMPLOYEE", SAL " EMP EARNINGS", MGR "MANAGERS" FROM SCOTT.EMP;

#### **EXPRESSIONS:**

SELECT ENAME, JOB, SAL, SAL \* 12 FROM SCOTT.EMP;

SELECT ENAME, JOB, SAL, COMM, SAL + COMM FROM SCOTT.EMP;

SELECT ENAME, JOB, SAL, COMM, SAL + NVL(COMM, 0) FROM SCOTT.EMP;

SELECT 1 FROM SCOTT.EMP;

SELECT 2\*3 FROM SCOTT.EMP;

SELECT 2+3, 2\*3, 2-3, 2/3 FROM SCOTT.EMP;

#### **LITERALS:**

SELECT ENAME, 'IS WORKING AS', JOB, 'IN DEPTNO', DEPTNO FROM SCOTT.EMP;

SELECT ENAME || JOB || SAL FROM SCOTT. EMP;

SELECT ENAME || ' IS WORKING AS' || JOB || ' IN DEPT' || DEPTNO || ' AND EARNING ' || SAL " mY eEMPLOYEES" FROM SCOTT.EMP;

#### **DISTINCT:**

SELECT JOB FROM SCOTT.EMP;

SELECT DISTINCT JOB FROM SCOTT.EMP;

SELECT DISTINCT DEPTNO FROM SCOTT.EMP;

SELECT DISTINCT DEPTNO, JOB FROM SCOTT.EMP;

## **ORDER BY**

```
SELECT * FROM SCOTT.EMP;
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```
SELECT * FROM SCOTT.EMP ORDER BY EMPNO;
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```
SELECT * FROM SCOTT.EMP ORDER BY EMPNO DESC;
```

```
SELECT * FROM SCOTT.EMP ORDER BY DEPTNO;
```

```
SELECT * FROM SCOTT.EMP ORDER BY DEPTNO, JOB;
```

```
SELECT * FROM SCOTT.EMP ORDER BY 3;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP ORDER BY 2;
```

```
SELECT ENAME, JOB, SAL, COMM, SAL*12 FROM SCOTT.EMP ORDER BY SAL*12;
```

```
SELECT ENAME, JOB, SAL, COMM, SAL*12 "ANNUAL" FROM SCOTT.EMP ORDER BY "ANNUAL";
```

## **WHERE**

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE JOB='MANAGER';
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE DEPTNO <> 20;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE DEPTNO IN (10,30);
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE JOB IN ('MANAGER', 'CLERK');
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE DEPTNO NOT IN (10,30);
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE SAL > 2000;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE SAL >= 2000;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE SAL < 3000;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE SAL <= 3000;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE SAL BETWEEN 2000 AND 3000;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE SAL NOT BETWEEN 2000 AND 3000;
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE ENAME LIKE 'S%';
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE ENAME LIKE '%S';
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE ENAME LIKE '%S%';
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE ENAME LIKE '____';
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE ENAME LIKE '___A%';
```

```
SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE ENAME NOT LIKE 'S%';
```

SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20 AND JOB='MANAGER';

SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20 OR JOB='MANAGER';

SELECT ENAME, JOB, SAL, DEPTNO FROM SCOTT.EMP WHERE NOT (DEPTNO=20);

## SET OPERATORS

**CONDITIONS : QUERIES MUST CONTAIN SAME NUMBER OF COLUMNS SELECTED, AND CORRESPONDING COLUMN MUST BE OF SAME TYPE**

### UNION

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20

UNION

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE JOB='MANAGER';

### UNION ALL

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20

UNION ALL

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE JOB='MANAGER';

### INTERSECT

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20

INTERSECT

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE JOB='MANAGER';

### MINUS

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE DEPTNO=20

MINUS

SELECT ENAME, JOB, SAL, COMM, DEPTNO FROM SCOTT.EMP WHERE JOB='MANAGER';

## FUNCTIONS

**SINGLE ROW FUNCTIONS [CHAR, NUMBER, DATE, CONVERSION]**

**GROUP FUNCTIONS [SUM, AVERAGE, MAX, MIN, STANDARD DEVIATION, VARIANCE] AND GROUP BY CLAUSE AND HAVING**

**SINGLE ROW FUNCTIONS:**

## CHARACTER FUNCTIONS

SELECT ENAME, LENGTH(ENAME), JOB,SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, LOWER(ENAME) , JOB,SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, UPPER(ENAME) , JOB,SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, INITCAP(ENAME) , JOB,SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, SUBSTR(ENAME,3,4) , JOB,SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, REPLACE(ENAME,'SMITH','FRIEND') , JOB,SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, DECODE(JOB, 'MANAGER','MGR', 'CLERK', 'CLK', 'OTHERS'),SAL ,DEPTNO FROM SCOTT.EMP;

SELECT ENAME, TRANSLATE(ENAME,'S','Z') , JOB,SAL ,DEPTNO FROM SCOTT.EMP;

## NUMBER FUNCTIONS

SELECT ABS(-4.5) FROM DUAL;

SELECT SQRT(81) FROM DUAL;

SELECT POWER(2,3) FROM DUAL;

SELECT LOG(10,10) FROM DUAL;

SELECT EXP(-1) FROM DUAL;

SELECT GREATEST(2,3) FROM DUAL;

SELECT LEAST(2,3) FROM DUAL;

SELECT ROUND(56.67) FROM DUAL;

SELECT ROUND(56.11) FROM DUAL;

SELECT ROUND(565.678, 0) FROM DUAL;

SELECT ROUND(565.678, -1) FROM DUAL;

SELECT ROUND(562.678, -1) FROM DUAL;

SELECT ROUND(565.678, -2) FROM DUAL;

SELECT ROUND(535.678, -2) FROM DUAL;

SELECT ROUND(565.678, -3) FROM DUAL;

SELECT ROUND(365.678, -3) FROM DUAL;

SELECT ROUND(365.678, 3) FROM DUAL;

SELECT ROUND(365.678, 2) FROM DUAL;

SELECT ROUND(365.678, 1) FROM DUAL;

SELECT CEIL(365.657) FROM DUAL;

SELECT FLOOR(365.657) FROM DUAL;

### DATE FUNCTIONS

SELECT SYSDATE FROM DUAL;

SELECT MONTHS\_BETWEEN(SYSDATE, '25-JAN-22') FROM DUAL;

SELECT NEXT\_DAY(SYSDATE, 'FRIDAY') FROM DUAL;

SELECT LAST\_DAY(SYSDATE) FROM DUAL;

SELECT TO\_CHAR(SYSDATE, 'HH:MM:SS') FROM DUAL;

### GROUP FUNCTIONS [ GROUP BY CONDITIONS. SELECT ONLY THOSE COLUMNS THAT ARE PART OF GROUP BY CLAUSE OR APPLIED WITH GROUP FUNCTIONS ]

SELECT SUM(SAL) FROM SCOTT.EMP;

SELECT AVG(SAL) FROM SCOTT.EMP;

SELECT MAX(SAL) FROM SCOTT.EMP;

SELECT MIN(SAL) FROM SCOTT.EMP;

SELECT STDDEV(SAL) FROM SCOTT.EMP;

SELECT VARIANCE(SAL) FROM SCOTT.EMP;

SELECT DEPTNO, SUM(SAL) FROM SCOTT.EMP GROUP BY DEPTNO;

SELECT JOB, AVG(SAL) FROM SCOTT.EMP GROUP BY JOB;

SELECT DEPTNO, MAX(SAL) FROM SCOTT.EMP GROUP BY DEPTNO;

SELECT DEPTNO, JOB, SUM(SAL) FROM SCOTT.EMP GROUP BY DEPTNO, JOB;

SELECT COUNT(\*) FROM SCOTT.EMP;

SELECT COUNT(EMPNO) FROM SCOTT.EMP;

SELECT COUNT(COMM) FROM SCOTT.EMP;

SELECT DEPTNO, JOB, COUNT(\*) FROM SCOTT.EMP GROUP BY DEPTNO, JOB ORDER

SELECT DEPTNO, AVG(SAL) FROM SCOTT.EMP GROUP BY DEPTNO HAVING AVG(SAL) > 2000;

SELECT DEPTNO, AVG(SAL) FROM SCOTT.EMP HAVING AVG(SAL) > 2000 GROUP BY DEPTNO;

**SELECT DEPTNO,AVG(SAL) , COUNT(\*) FROM SCOTT.EMP GROUP BY DEPTNO HAVING COUNT(\*) > 3;BY DEPTNO;**

**SELECT ROUND(AVG(SAL)) , DEPTNO FROM SCOTT.EMP GROUP BY DEPTNO;**

**SELECT DEPTNO, JOB, SUM(SAL) FROM SCOTT.EMP WHERE JOB NOT IN ('PRESIDENT') HAVING SUM(SAL) > 1500 GROUP BY DEPTNO, JOB ORDER BY DEPTNO;**

**SELECT DEPTNO, JOB, SUM(SAL), SUM(COMM) FROM SCOTT.EMP GROUP BY CUBE(DEPTNO, JOB) ORDER BY DEPTNO;**

**SELECT DEPTNO, JOB, SUM(SAL) FROM SCOTT.EMP GROUP BY ROLLUP(DEPTNO, JOB) ORDER BY DEPTNO;**

### **TOP N ANALYSIS**

#### **ROWNUM IS PSEUDO COLUMN TO DISPLAY THE ROW NUMBER**

**SELECT ROWNUM, ENAME,JOB,SAL FROM SCOTT.EMP;**

**SELECT ROWNUM, ENAME,JOB,SAL FROM ( SELECT \* FROM SCOTT.EMP ORDER BY SAL DESC) WHERE ROWNUM <=5;**

**SELECT ROWNUM, ENAME,JOB,SAL FROM ( SELECT \* FROM SCOTT.EMP ORDER BY SAL ) WHERE ROWNUM <=5;**

**SELECT ROWNUM, ENAME,JOB,COMM FROM ( SELECT \* FROM SCOTT.EMP ORDER BY COMM ) WHERE ROWNUM <=5;**

### **JOINS : SELECTING DATA FROM MORE THAN ONE TABLE**

#### **CROSS JOIN / CARTISIAN PRODUCT**

**SELECT ENAME, JOB, SAL, DNAME, LOC FROM SCOTT.EMP, SCOTT.DEPT;**

**SELECT ENAME, JOB, SAL, DNAME, LOC FROM SCOTT.EMP CROSS JOIN SCOTT.DEPT;**

#### **EQUI JOIN**

**SELECT ENAME, JOB, SAL, DNAME, LOC, SCOTT.EMP.DEPTNO FROM SCOTT.EMP , SCOTT.DEPT WHERE SCOTT.EMP.DEPTNO = SCOTT.DEPT.DEPTNO;**

#### **NATURAL JOIN**

**SELECT ENAME, JOB, SAL, DNAME, LOC FROM SCOTT.EMP NATURAL JOIN SCOTT.DEPT;**

#### **TABLE ALIAS:**

**SELECT ENAME, JOB, SAL, DNAME, LOC, E.DEPTNO FROM SCOTT.EMP E, SCOTT.DEPT D WHERE E.DEPTNO = D.DEPTNO;**

### **OUTER JOINS**

**SELECT ENAME, JOB, SAL, DNAME, LOC, E.DEPTNO, D.DEPTNO FROM SCOTT.EMP E, SCOTT.DEPT D WHERE E.DEPTNO (+) = D.DEPTNO;**

**SELECT ENAME, JOB, SAL, DNAME, LOC, E.DEPTNO, D.DEPTNO FROM SCOTT.EMP E, SCOTT.DEPT D WHERE E.DEPTNO = D.DEPTNO (+);**

**SELECT ENAME, JOB, SAL, DNAME, LOC, E.DEPTNO, D.DEPTNO FROM SCOTT.EMP E LEFT OUTER JOIN SCOTT.DEPT D ON E.DEPTNO=D.DEPTNO;**

**SELECT ENAME, JOB, SAL, DNAME, LOC, E.DEPTNO, D.DEPTNO FROM SCOTT.EMP E RIGHT OUTER JOIN SCOTT.DEPT D ON E.DEPTNO=D.DEPTNO;**

**SELECT ENAME, JOB, SAL, DNAME, LOC, E.DEPTNO, D.DEPTNO FROM SCOTT.EMP E FULL OUTER JOIN SCOTT.DEPT D ON E.DEPTNO=D.DEPTNO;**

### **NON EQUI JOIN**

**SELECT ENAME, JOB, SAL, D.DEPTNO FROM SCOTT.EMP E, SCOTT.DEPT D WHERE SAL BETWEEN 1000 AND 2000;**

**CREATE TABLE SALGRADE(GRADE NUMBER, LOSAL NUMBER, HISAL NUMBER);**

**INSERT INTO SALGRADE VALUES(2, 1001, 2000);**

**INSERT INTO SALGRADE VALUES(3, 2001, 3000);**

**INSERT INTO SALGRADE VALUES(4, 3001, 4000);**

**INSERT INTO SALGRADE VALUES(5, 4001, 5000);**

**SELECT \* FROM SALGRADE;**

**SELECT E.ENAME, E.JOB, E.SAL, E.DEPTNO, S.GRADE FROM SCOTT.EMP E, SALGRADE S WHERE SAL BETWEEN LOSAL AND HISAL;**

**DELETE FROM SALGRADE WHERE GRADE=1;**

### **SELF JOIN**

**SELECT E.ENAME, M.ENAME FROM SCOTT.EMP E, SCOTT.EMP M WHERE M.EMPNO = E.MGR;**

### **JOINING MORE THAN 2 TABLES:**

**SELECT ENAME, JOB, SAL, DNAME, LOC, GRADE FROM SCOTT.EMP, SCOTT.DEPT, SALGRADE WHERE SCOTT.EMP.DEPTNO = SCOTT.DEPT.DEPTNO AND SCOTT.SAL BETWEEN LOSAL AND HISAL;**

## **SUBQUERIES**

**SELECT \* FROM SCOTT.EMP WHERE SAL > (SELECT SAL FROM SCOTT.EMP WHERE ENAME='ADAMS');**

**SELECT \* FROM SCOTT.EMP WHERE JOB = (SELECT JOB FROM SCOTT.EMP WHERE ENAME='BLAKE');**

**SELECT \* FROM SCOTT.EMP WHERE SAL > (SELECT AVG(SAL) FROM SCOTT.EMP);**

**SELECT \* FROM SCOTT.EMP WHERE SAL >= (SELECT MAX(SAL) FROM SCOTT.EMP);**

**SELECT \* FROM SCOTT.EMP WHERE SAL IN (SELECT MAX(SAL) FROM SCOTT.EMP GROUP BY DEPTNO);**

**SELECT \* FROM SCOTT.EMP WHERE SAL IN (SELECT MIN(SAL) FROM SCOTT.EMP GROUP BY DEPTNO);**

**SELECT \* FROM SCOTT.EMP WHERE SAL IN (SELECT MAX(SAL) FROM SCOTT.EMP GROUP BY JOB);**

**SELECT \* FROM SCOTT.EMP WHERE (DEPTNO, SAL) IN (SELECT DEPTNO, MAX(SAL) FROM SCOTT.EMP GROUP BY DEPTNO);**

**SELECT \* FROM SCOTT.EMP WHERE EXISTS (SELECT \* FROM SCOTT.EMP WHERE DEPTNO=40) ;**

**SELECT ENAME , JOB , (SELECT SAL FROM SCOTT.EMP WHERE ENAME='SCOTT') FROM SCOTT.EMP;**

**SELECT ENAME,JOB,SAL FROM (SELECT \* FROM SCOTT.EMP WHERE DEPTNO=20);**

## **INSERT UPATE DELETE**

**INSERT INTO SCOTT.EMP(EMPNO, ENAME, SAL, DEPTNO,JOB) VALUES(9999, 'DINESH','3456','40','MANAGER');**

**INSERT INTO SCOTT.EMP(EMPNO, ENAME, SAL, DEPTNO,JOB) VALUES(9999, 'DINESH',3456,40,'MANAGER');**

**UPDATE SCOTT.EMP SET SAL= 5000 , JOB='MANAGER' WHERE ENAME='SCOTT';**

**DELETE FROM SCOTT.EMP WHERE DEPTNO=40;**

## **CREATE ALTER DROP**

**CREATE TABLE STUDENTS(SID NUMBER, SNAME VARCHAR2(20), SMARKS NUMBER);**

**ALTER TABLE STUDENTS ADD(SPROG VARCHAR2(20));**

**ALTER TABLE STUDENTS MODIFY(SPROG VARCHAR2(30));**

**ALTER TABLE STUDENTS DROP COLUMN SPROG;**

**DROP TABLE STUDENTS;**