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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** | **Database Systems** | **Course Code:** | **CS219** |
| **Program:** | **BS(Computer Science)** |  |  |
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| **Practice Problem:** | **SQL (1) - SOLUTION** |  |  |

# EMP (Empno, Ename, Job, Mgr, Hiredate, Sal, Comm, Deptno)

# DEPT (Deptno, Dname, Loc)

SALGRADE (Grade, LoSal, HiSal)

**Exercise 1**

**1.** SELECT \* FROM SALGRADE;

**2.** SELECT \* FROM EMP;

**3.** SELECT \* FROM EMP  
WHERE SAL BETWEEN 1000 AND 2000;

**4.** SELECT DEPTNO, DNAME FROM DEPT   
ORDER BY DNAME;

**5.** SELECT DISTINCT JOB FROM EMP;

**6.** SELECT \* FROM EMP  
WHERE DEPTNO = 10 OR DEPTNO = 20  
ORDER BY ENAME;

**7.** SELECT ENAME, JOB FROM EMP  
WHERE DEPTNO = 20 AND UPPER(JOB) = ‘CLERK’;

**8.** SELECT ENAME FROM EMP  
WHERE ENAME LIKE ‘%TH%’ OR ENAME LIKE ‘%LL%’;

**9.** SELECT \* FROM EMP  
WHERE MGR IS NOT NULL;

**10.** SELECT ENAME, ISNULL(SAL,0) + ISNULL(COMM,0) AS “Remuneration”  
FROM EMP;

**11.** SELECT \* FROM EMP  
WHERE YEAR(HIREDATE) = ‘1983’;

**12.**  SELECT ENAME, SAL \* 12 “Annual Salary”, COMM   
FROM EMP

WHERE UPPER(JOB)=’SALESMAN’ AND SAL > ISNULL(COMM,0)

ORDER BY SAL DESC;

**13.** SELECT \* FROM EMP ORDER BY MGR;

**Exercise 2**

**1.** SELECT ENAME, ROUND(SAL\*1.15) AS INC\_SAL FROM EMP;

**2.** SELECT ENAME, HIREDATE FROM EMP  
 WHERE DEPTNO=20;

**3.** SELECT ENAME, HIREDATE, DATEADD(YEAR, 1, HIREDATE) AS REVIEWDATE  
 FROM EMP ORDER BY DATEADD(YEAR, 1, HIREDATE);

**4.** (SELECT EMPNO, ENAME, 'Below 1500' AS SALARY

FROM EMP WHERE SAL < 1500)

UNION

(SELECT EMPNO, ENAME, 'On Target'

FROM EMP WHERE SAL = 1500)

UNION

(SELECT EMPNO, ENAME, CONVERT(VARCHAR, SAL)

FROM EMP WHERE SAL > 1500);

**5.** SELECT DATENAME(DW, HIREDATE)  
 FROM EMP;

**6.** SELECT ENAME, HIREDATE,   
NEXT\_DAY(LAST\_DAY(ROUND(HIREDATE,’MONTH’))-7,’FRIDAY’) AS PAYDATE  
FROM EMP ORDER BY HIREDATE;

**7.** SELECT EMPNO, ENAME,  
 ROUND(MONTHS\_BETWEEN(SYSDATE, HIREDATE)) || ‘ months’ AS TIMELEN  
FROM EMP;

**Exercise 3**

**1.** SELECT MIN(SAL) FROM EMP;

**2.** SELECT MIN(SAL), MAX(SAL), AVG(SAL) FROM EMP;

**3.** SELECT JOB, MIN(SAL), MAX(SAL)   
FROM EMP GROUP BY JOB;

**4.** SELECT COUNT(DISTINCT MGR) FROM EMP;

**5.** SELECT JOB, AVG(SAL), AVG(SAL+ISNULL(COMM,0)) AS “AVG(RENUMERATION)”  
FROM EMP GROUP BY JOB;

**6.** SELECT MAX(SAL) – MIN(SAL) FROM EMP;

**7.** SELECT DNAME FROM EMP, DEPT   
WHERE EMP.DEPTNO = DEPT.DEPTNO  
GROUP BY DNAME  
HAVING COUNT(EMPNO) > 3;

**8.** SELECT DECODE(COUNT(EMPNO) - COUNT(DISTINCT EMPNO), 0, ‘Unique’, ‘Not Unique’)   
FROM EMP;

**9.** SELECT MGR, EMPNO, ENAME, SAL   
FROM EMP  
WHERE (MGR,SAL) IN (SELECT MGR, MIN(SAL)  
 FROM EMP GROUP BY MGR  
 HAVING MIN(SAL) >= 1000 );

**Exercise 4**

**1.** SELECT ENAME, DNAME  
FROM EMP JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO  
ORDER BY DNAME;

**2.** SELECT ENAME, EMP.DEPTNO, DNAME  
FROM EMP JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO

**3.** SELECT ENAME, LOC, DNAME  
FROM EMP JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO  
WHERE SAL > 1500;

**4.** SELECT EMPNO, ENAME, GRADE   
FROM EMP JOIN SALGRADE ON SAL BETWEEN LOSAL AND HISAL;

**5.** SELECT EMPNO, ENAME  
FROM EMP JOIN SALGRADE ON SAL BETWEEN LOSAL AND HISAL  
WHERE GRADE = 3;

**6.** SELECT EMPNO, ENAME  
FROM EMP JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO  
WHERE UPPER(LOC) = ‘DALLAS’;

**7.** SELECT ENAME, JOB, SAL, GRADE, DNAME  
FROM EMP JOIN DEPT ON EMP.DEPTNO = DEPT.DEPTNO JOIN SALGRADE ON SAL BETWEEN LOSAL AND HISAL  
WHERE UPPER(JOB) <> ‘CLERK’  
ORDER BY SAL DESC;

**8.** SELECT \* FROM DEPT  
WHERE DEPTNO NOT IN ( SELECT DISTINCT DEPTNO FROM EMP );

**9.** SELECT E.EMPNO EmpNo, E.ENAME EmpName,  
 M.EMPNO MgrNo, M.ENAME MgrName  
FROM EMP E JOIN EMP M ON E.MGR = M.EMPNO;

**10.** SELECT E.EMPNO EmpNo, E.ENAME EmpName,  
 M.EMPNO MgrNo, M.ENAME MgrName  
FROM EMP E RIGHT JOIN EMP M ON E.MGR = M.EMPNO;

**11.** SELECT DISTINCT E1.JOB JOB  
FROM EMP E1 JOIN EMP E2 ON E1.JOB = E2.JOB  
WHERE MONTHS\_BETWEEN(E1.HIREDATE, ‘01-JAN-1983’) < 6  
 AND MONTHS\_BETWEEN(E2.HIREDATE, ‘01-JAN-1984’) < 6;

**12.** SELECT E.EMPNO, E.ENAME  
FROM EMP E JOIN EMP M ON E.MGR = M.EMPNO AND E.HIREDATE < M.HIREDATE;

**Exercise 5**

**1.** SELECT ENAME, HIREDATE FROM EMP  
WHERE ENAME <> ‘Blake’   
 AND DEPTNO IN ( SELECT DEPTNO FROM EMP   
 WHERE UPPER(ENAME) = ‘BLAKE’);

**2.** SELECT EMPNO, ENAME FROM EMP  
WHERE SAL > ( SELECT AVG(SAL) FROM EMP )  
ORDER BY SAL DESC;

**3.** SELECT EMPNO, ENAME FROM EMP  
WHERE DEPTNO IN ( SELECT DISTINCT DEPTNO  
 FROM EMP WHERE ENAME LIKE ‘%T%’ );

**4.** SELECT ENAME, DEPTNO, JOB FROM EMP  
WHERE DEPTNO IN ( SELECT DEPTNO FROM DEPT WHERE UPPER(LOC)=’DALLAS’ );

**5.** SELECT ENAME, SAL FROM EMP  
WHERE MGR IN ( SELECT EMPNO FROM EMP   
 WHERE LOWER(ENAME) = ‘king’ );

**6.** SELECT DEPTNO, ENAME, JOB FROM EMP  
WHERE DEPTNO = ( SELECT DEPTNO FROM DEPT WHERE DNAME = ‘SALES’ );

**7.** SELECT ENAME, DEPTNO, SAL FROM EMP  
WHERE (DEPTNO, SAL) IN ( SELECT DEPTNO, SAL FROM EMP   
 WHERE COMM IS NOT NULL );

**8.** SELECT ENAME, DEPTNO, SAL FROM EMP  
WHERE (SAL, COMM) IN ( SELECT SAL, COMM FROM EMP, DEPT  
 WHERE EMP.DEPTNO = DEPT.DEPTNO   
 AND UPPER(LOC) = ‘DALLAS’ );

**9.** SELECT ENAME, HIREDATE, SAL FROM EMP  
WHERE (SAL, COMM) IN ( SELECT SAL, COMM FROM EMP  
 WHERE LOWER(ENAME) = ‘scott’ );

**10.** SELECT \* FROM EMP  
WHERE SAL > ALL ( SELECT DISTINCT SAL FROM EMP WHERE JOB=’CLERK’ )  
ORDER BY SAL DESC;