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ENRL : 2020CSB092

EMP Table data values

```
mysql> SELECT * FROM EMP;
+-------+--------+-----------+------+------------+------+------+--------+
| EMPNO | ENAME  | JOB       | MGR  | HIREDATE   | SAL  | COMM | DEPTNO |
+-------+--------+-----------+------+------------+------+------+--------+
|  7369 | Smith  | Clerk     | 7902 | 1980-12-17 |  800 | NULL |     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 | 1981-12-04 | 3000 | NULL |     20 |
|  7934 | Miller | Clerk     | 7582 | 1982-01-23 | 1300 | NULL |     10 |
+-------+--------+-----------+------+------------+------+------+--------+
14 rows in set (0.00 sec)
```

DEPT Table data values

```
mysql> SELECT * FROM DEPT;
+--------+------------+----------+
| deptNo | deptName   | loc      |
+--------+------------+----------+
|     10 | Accounting | New York |
|     20 | Research   | Dallas   |
|     30 | Sales      | Chicago  |
|     40 | Operations | Boston   |
+--------+------------+----------+
4 rows in set (0.00 sec)
```

QUERY :-

PART A

1. Display the name of employees who earn maximum salary.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE SAL = (SELECT MAX(SAL) FROM EMP);
+--------+
| ENAME  |
+--------+
| King   |
+--------+
1 row in set (0.00 sec)
```

2. Display the name of employees who earn maximum salary and job is salesman.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE JOB = "Salesman" AND
    -> SAL = (SELECT MAX(SAL) FROM EMP WHERE JOB = "Salesman");
+--------+
| ENAME  |
+--------+
| Allen  |
+--------+
1 row in set (0.00 sec)
```

3. Display the departments whose average salary is maximal.

```
mysql> SELECT DNAME,AVG(SALL) AS AVERAGE_SALARY FROM ((SELECT deptName AS DNAME,SAL AS SALL FROM EMP,DEPT
    ->  WHERE EMP.DEPTNO = DEPT.deptNo) x ) GROUP BY DNAME ORDER BY AVG(SALL) DESC LIMIT 1;
+------------+----------------+
| DNAME      | AVERAGE_SALARY |
+------------+----------------+
| Accounting |      2916.6667 |
+------------+----------------+
1 row in set (0.00 sec)
```

4. Display the name of employees whose salary is more than ‘TURNER’.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE SAL > (SELECT SAL FROM EMP WHERE ENAME = "Turner");
+--------+
| ENAME  |
+--------+
| Allen  |
| Jones  |
| Blake  |
| Clark  |
| Scott  |
| King   |
| Ford   |
+--------+
7 rows in set (0.00 sec)
```

5. Display the name of employees who joined after ‘ALLEN’.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE HIREDATE > (SELECT HIREDATE FROM EMP WHERE ENAME="Allen");
+--------+
| ENAME  |
+--------+
| Ward   |
| Jones  |
| Martin |
| Blake  |
| Clark  |
| Scott  |
| King   |
| Turner |
| Adams  |
| James  |
| Ford   |
| Miller |
+--------+
12 rows in set (0.00 sec)
```

6. Display the name of the department in which ‘FORD’ works.

```
mysql> SELECT deptName FROM DEPT
    -> WHERE deptNo = (SELECT DEPTNO FROM EMP WHERE ENAME="Ford");
+----------+
| deptName |
+----------+
| Research |
+----------+
1 row in set (0.00 sec)
```

7. Display the name of the city in which ‘SMITH’ works.

```
mysql> SELECT loc AS CITY FROM DEPT
    -> WHERE deptNo = (SELECT DEPTNO FROM EMP WHERE ENAME="Smith");
+--------+
| CITY   |
+--------+
| Dallas |
+--------+
1 row in set (0.00 sec)
```

8. List names of employees who are not managers.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE JOB NOT IN ("Manager");
+--------+
| ENAME  |
+--------+
| Smith  |
| Allen  |
| Ward   |
| Martin |
| Scott  |
| King   |
| Turner |
| Adams  |
| James  |
| Ford   |
| Miller |
+--------+
11 rows in set (0.00 sec)
```

9. List the names of employees who work in ‘Research’ department and have joined before
30th July, 2007.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE DEPTNO = (SELECT deptNo FROM DEPT WHERE deptName = "Research")
    -> AND HIREDATE < "2007-07-30";
+-------+
| ENAME |
+-------+
| Smith |
| Jones |
| Scott |
| Adams |
| Ford  |
+-------+
5 rows in set (0.00 sec)
```

10. Retrieve the second highest salary from EMP table.

```
mysql> SELECT MAX(SAL) FROM EMP
    -> WHERE SAL<(SELECT MAX(SAL) FROM EMP);
+----------+
| MAX(SAL) |
+----------+
|     3000 |
+----------+
1 row in set (0.00 sec)
```

11. Find the name of the second highest paid employee(s).

```
mysql> SELECT ENAME FROM EMP
    -> WHERE SAL = (SELECT MAX(SAL) FROM EMP WHERE SAL<(SELECT MAX(SAL) FROM EMP));
+-------+
| ENAME |
+-------+
| Scott |
| Ford  |
+-------+
2 rows in set (0.00 sec)
```

12. Retrieve the fifth highest salary from EMP table.

```
mysql> SELECT SAL FROM ((SELECT DISTINCT(SAL) FROM EMP ORDER BY SAL DESC LIMIT 5) x )
    -> ORDER BY SAL ASC LIMIT 1;
+------+
| SAL  |
+------+
| 2450 |
+------+
1 row in set (0.00 sec)
```

13. Enlist top five paid employees.

```
mysql> SELECT ENAME,SAL FROM EMP
    -> ORDER BY SAL DESC
    -> LIMIT 5;
+-------+------+
| ENAME | SAL  |
+-------+------+
| King  | 5000 |
| Ford  | 3000 |
| Scott | 3000 |
| Jones | 2975 |
| Blake | 2850 |
+-------+------+
5 rows in set (0.00 sec)
```

14. List the employees who earn more than every employee in ‘DALLAS’.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE SAL > (SELECT MAX(SAL) FROM EMP WHERE DEPTNO = (SELECT deptNo FROM DEPT WHERE loc = "Dallas"));
+-------+
| ENAME |
+-------+
| King  |
+-------+
1 row in set (0.00 sec)
```

15. Display the name of the departments that has no employee.

```
mysql> SELECT deptName FROM DEPT
    -> WHERE deptNo = (SELECT deptNo FROM DEPT WHERE deptNo NOT IN (SELECT DISTINCT(DEPTNO) FROM EMP));
+------------+
| deptName   |
+------------+
| Operations |
+------------+
1 row in set (0.00 sec)
```

16. List the name of the employees who joined in the same date of ‘ADAMS’.

```
mysql> SELECT ENAME FROM EMP
    -> WHERE HIREDATE = (SELECT HIREDATE FROM EMP WHERE ENAME = "Adams");
+-------+
| ENAME |
+-------+
| Adams |
+-------+
1 row in set (0.00 sec)
```

17. Display the name of the departments that get commission.

```
mysql> SELECT deptName FROM DEPT
    -> WHERE deptNo IN (SELECT DISTINCT(DEPTNO) FROM EMP WHERE COMM IS NOT NULL);
+----------+
| deptName |
+----------+
| Sales    |
+----------+
1 row in set (0.00 sec)
```

18. List the employees who earn the lowest salary in their respective department.

```
mysql> SELECT minsal , deptName FROM ((SELECT MIN(SAL) AS minsal , DEPTNO AS dno FROM EMP GROUP BY DEPTNO) x ), DEPT
    -> WHERE x.dno = DEPT.deptNo;
+--------+------------+
| minsal | deptName   |
+--------+------------+
|   1300 | Accounting |
|    800 | Research   |
|    950 | Sales      |
+--------+------------+
3 rows in set (0.00 sec)
```

PART B

1. Display the manager number and the salary of the lowest paid employee for that manager.
Exclude anyone whose manager is not known. Exclude any group where the minimum salary is less than $1,000. Sort the output in descending order of salary.

```
mysql> SELECT MGR,MIN(SAL) AS MINSALARY FROM EMP GROUP BY MGR HAVING MGR IS NOT NULL AND MINSALARY>1000 ORDER BY MINSALARY DESC;
+------+-----------+
| MGR  | MINSALARY |
+------+-----------+
| 7566 |      3000 |
| 7839 |      2450 |
| 7582 |      1300 |
| 7788 |      1100 |
+------+-----------+
4 rows in set (0.00 sec)
```

2. Write a query to display the department name, location name, number of employees, and the average salary for all employees in that department.

```
mysql> SELECT d.deptName,d.loc,count(*) AS Count,AVG(SAL) FROM EMP e,DEPT d
    -> WHERE e.DEPTNO = d.deptNO GROUP BY e.DEPTNO;
+------------+----------+-------+-----------+
| deptName   | loc      | Count | AVG(SAL)  |
+------------+----------+-------+-----------+
| Accounting | New York |     3 | 2916.6667 |
| Research   | Dallas   |     5 | 2175.0000 |
| Sales      | Chicago  |     6 | 1566.6667 |
+------------+----------+-------+-----------+
3 rows in set (0.00 sec)
```

3. Display the employee name and employee number along with their manager's name and manager's number including King who has no manager.
Label the columns EMPLOYEE, EMP#, MANAGER, MGR# respectively.

```
mysql> SELECT a.ENAME AS EMPLOYEE,a.EMPNO AS "EMP#", b.ENAME AS MANAGER,b.EMPNO AS "MGR#" FROM EMP a,EMP b
    -> WHERE a.MGR=b.EMPNO
    -> UNION SELECT ENAME,EMPNO,NULL,NULL FROM EMP WHERE MGR IS NULL;
+----------+------+---------+------+
| EMPLOYEE | EMP# | MANAGER | MGR# |
+----------+------+---------+------+
| Smith    | 7369 | Ford    | 7902 |
| Allen    | 7499 | Blake   | 7698 |
| Ward     | 7521 | Blake   | 7698 |
| Jones    | 7566 | King    | 7839 |
| Martin   | 7654 | Blake   | 7698 |
| Blake    | 7698 | King    | 7839 |
| Clark    | 7782 | King    | 7839 |
| Scott    | 7788 | Jones   | 7566 |
| Turner   | 7844 | Blake   | 7698 |
| Adams    | 7876 | Scott   | 7788 |
| James    | 7900 | Blake   | 7698 |
| Ford     | 7902 | Jones   | 7566 |
| King     | 7839 | NULL    | NULL |
+----------+------+---------+------+
13 rows in set (0.00 sec)
```

4. Write a query that will display the difference between the highest and lowest salaries.
Label the column a DIFFERENCE.

```
mysql> SELECT (MAX(SAL)-MIN(SAL)) AS DIFFERENCE FROM EMP;
+------------+
| DIFFERENCE |
+------------+
|       4200 |
+------------+
1 row in set (0.00 sec)
```

5. Write a query that will display the difference between the highest and lowest salaries for each department.
Label the column a DIFF.

```
mysql> SELECT (MAX(SAL)-MIN(SAL)) AS DIFF,deptName FROM EMP,DEPT
    -> WHERE EMP.DEPTNO = DEPT.deptNo GROUP BY deptName;
+------+------------+
| DIFF | deptName   |
+------+------------+
| 3700 | Accounting |
| 2200 | Research   |
| 1900 | Sales      |
+------+------------+
3 rows in set (0.00 sec)
```

6. Display the employee's names and hire dates along with their manager's names and hiredates for all employees who were hired before their managers. Label the columns
EMPLOYEE, EMP HIREDATE, MANAGER and MGR HIREDATE respectively.

```
mysql> SELECT X.ENAME AS EMPLOYEE ,X.HIREDATE AS EMP_HIREDATE ,Y.ENAME AS  MANAGER ,Y.HIREDATE AS MGR_HIREDATE
    -> FROM EMP X,EMP Y
    -> WHERE X.MGR = Y.EMPNO AND X.HIREDATE < Y.HIREDATE;
+----------+--------------+---------+--------------+
| EMPLOYEE | EMP_HIREDATE | MANAGER | MGR_HIREDATE |
+----------+--------------+---------+--------------+
| Smith    | 1980-12-17   | Ford    | 1981-12-04   |
| Allen    | 1981-02-20   | Blake   | 1981-05-01   |
| Ward     | 1981-02-22   | Blake   | 1981-05-01   |
| Jones    | 1981-04-02   | King    | 1981-11-17   |
| Blake    | 1981-05-01   | King    | 1981-11-17   |
| Clark    | 1981-06-09   | King    | 1981-11-17   |
+----------+--------------+---------+--------------+
6 rows in set (0.00 sec)
```