Database and Management

System Lab

Lab Experiment – 6

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Creating the Tables

```
mysql> CREATE TABLE DEPT (
    ->     DEPTNO INT PRIMARY KEY,
    ->     DNAME VARCHAR(20),
    ->     LOC VARCHAR(20)
    -> );
Query OK, 0 rows affected (0.08 sec)

mysql> INSERT INTO DEPT (DEPTNO, DNAME, LOC) VALUES
    -> (10, 'ACCOUNTING', 'NEW YORK'),
    -> (20, 'RESEARCH', 'DALLAS'),
    -> (30, 'SALES', 'CHICAGO'),
    -> (40, 'OPERATIONS', 'BOSTON');
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> CREATE TABLE EMP (
    ->     EMPNO INT PRIMARY KEY,
    ->     ENAME VARCHAR(20),
    ->     JOB VARCHAR(20),
    ->     MGR INT,
    ->     HIREDATE DATE,
    ->     SAL DECIMAL(7, 2),
    ->     COMM DECIMAL(7, 2),
    ->     DEPTNO INT,
    ->     FOREIGN KEY (DEPTNO) REFERENCES DEPT(DEPTNO)
    -> );
Query OK, 0 rows affected (0.08 sec)

mysql> 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);
Query OK, 14 rows affected (0.01 sec)
Records: 14  Duplicates: 0  Warnings: 0
```

Q1) Retrieve average salary of all employees.

```
mysql> SELECT AVG(SAL) AS Average_Salary FROM EMP;
+----------------+
| Average_Salary |
+----------------+
|  2051.785714 |
+----------------+
1 row in set (0.01 sec)
```

Q2) Retrieve the number of employees.

```
mysql> SELECT COUNT(*) AS Number_of_Employees FROM EMP;
+---------------------+
| Number_of_Employees |
+---------------------+
|                  14 |
+---------------------+
1 row in set (0.01 sec)
```

Q3) Retrieve distinct number of employee

```
mysql> SELECT COUNT(DISTINCT ENAME) AS Distinct_Employees FROM EMP;
+--------------------+
| Distinct_Employees |
+--------------------+
|                 14 |
+--------------------+
1 row in set (0.02 sec)
```

Q4) Retrieve total salary of employee group by job.

```
mysql> SELECT JOB, SUM(SAL) AS Total_Salary
    -> FROM EMP
    -> GROUP BY JOB;
+-----------+--------------+
| JOB       | Total_Salary |
+-----------+--------------+
| CLERK     |      3850.00 |
| SALESMAN  |      5600.00 |
| MANAGER   |      8275.00 |
| ANALYST   |      6000.00 |
| PRESIDENT |      5000.00 |
+-----------+--------------+
5 rows in set (0.01 sec)
```

Q5) Display the employee information with maximum salary.

```
mysql> SELECT *
    -> FROM EMP
    -> WHERE SAL = (SELECT MAX(SAL) FROM EMP);
+-------+-------+-----------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB       | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+-----------+------+------------+---------+------+--------+
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
+-------+-------+-----------+------+------------+---------+------+--------+
1 row in set (0.03 sec)
```

Q6) Find the highest paid employee in department 10.

```
mysql> SELECT * FROM EMP
    -> WHERE DEPTNO = 10
    -> AND SAL = (SELECT MAX(SAL) FROM EMP);
+-------+-------+-----------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB       | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+-----------+------+------------+---------+------+--------+
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
+-------+-------+-----------+------+------------+---------+------+--------+
1 row in set (0.00 sec)
```

Q7) List the employees whose salary is equal to the average of the maximum and minimum salary.

```
mysql> SELECT *
    -> FROM EMP
    -> WHERE SAL = (
    ->   (SELECT MAX(SAL) FROM EMP) + (SELECT MIN(SAL) FROM EMP)
    -> ) / 2;
Empty set (0.00 sec)
```

Q8) List the employees who joined the company on the same date.

```
mysql> SELECT HIREDATE, COUNT(*) AS Number_of_Employees
    -> FROM EMP
    -> GROUP BY HIREDATE
    -> HAVING COUNT(*) > 1;
+------------+---------------------+
| HIREDATE   | Number_of_Employees |
+------------+---------------------+
| 1981-12-03 |                   2 |
+------------+---------------------+
1 row in set (0.01 sec)
```

Q9) Display the employee names in upper and lower case.

```
mysql> SELECT UPPER(ENAME) AS Uppercase_Name, LOWER(ENAME) AS Lowercase_Name
    -> FROM EMP;
+----------------+----------------+
| Uppercase_Name | Lowercase_Name |
+----------------+----------------+
| SMITH          | smith          |
| ALLEN          | allen          |
| WARD           | ward           |
| JONES          | jones          |
| MARTIN         | martin         |
| BLAKE          | blake          |
| CLARK          | clark          |
| SCOTT          | scott          |
| KING           | king           |
| TURNER         | turner         |
| ADAMS          | adams          |
| JAMES          | james          |
| FORD           | ford           |
| MILLER         | miller         |
+----------------+----------------+
14 rows in set (0.01 sec)
```

Q10) Find the date of 3 days later from hiredate.

```
mysql> SELECT ENAME, HIREDATE, HIREDATE + INTERVAL 3 DAY AS Date_After_3_Days
    -> FROM EMP;
+--------+------------+-------------------+
| ENAME  | HIREDATE   | Date_After_3_Days |
+--------+------------+-------------------+
| SMITH  | 1980-12-17 | 1980-12-20        |
| ALLEN  | 1981-02-20 | 1981-02-23        |
| WARD   | 1981-02-22 | 1981-02-25        |
| JONES  | 1981-04-02 | 1981-04-05        |
| MARTIN | 1981-09-28 | 1981-10-01        |
| BLAKE  | 1981-05-01 | 1981-05-04        |
| CLARK  | 1981-06-09 | 1981-06-12        |
| SCOTT  | 1982-12-09 | 1982-12-12        |
| KING   | 1981-11-17 | 1981-11-20        |
| TURNER | 1981-09-08 | 1981-09-11        |
| ADAMS  | 1983-01-12 | 1983-01-15        |
| JAMES  | 1981-12-03 | 1981-12-06        |
| FORD   | 1981-12-03 | 1981-12-06        |
| MILLER | 1982-01-23 | 1982-01-26        |
+--------+------------+-------------------+
14 rows in set (0.11 sec)
```