

DBMS DAY 1 PRACTICAL LAB

(S.BARANI;192211152)

Q.no.1. Create an Emp table with the following fields:

**(EmpNo, EmpName, Job,Basic, DA, HRA,PF,
GrossPay, NetPay)**

**(Calculate DA as 30% of Basic and HRA as 40% of
Basic)**

**(a) Insert Five Records and calculate GrossPay and
NetPay.**

**(b) Display the employees whose Basic is lowest in
each department .**

**(c) If NetPay is less than <Rs. 10,000 add Rs. 1200
as special allowances .**

**(d) Display the employees whose GrossPay lies
between 10,000 & 20,000**

**(e) Display all the employees who earn maximum
salary**

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MySQL 8.0 Command Line C#
mysql> Create database Emp;
Query OK, 1 row affected (0.01 sec)

mysql> use Emp;
Database changed
mysql> CREATE TABLE Emp (
  -> EmpNo INT PRIMARY KEY,
  -> EmpName VARCHAR(100),
  -> Job VARCHAR(100),
  -> Basic DECIMAL(10,2),
  -> DA DECIMAL(10,2),
  -> HRA DECIMAL(10,2),
  -> PF DECIMAL(10,2),
  -> GrossPay DECIMAL(10,2),
  -> NetPay DECIMAL(10,2)
  -> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO Emp (EmpNo, EmpName, Job, Basic, DA, HRA, PF, GrossPay, NetPay)
  -> VALUES
  -> (1, 'John Doe', 'Manager', 15000, 4500, 6000, 1800, 0, 0),
  -> (2, 'Jane Smith', 'Developer', 12000, 3600, 4800, 1440, 0, 0),
  -> (3, 'Alice Johnson', 'Analyst', 10000, 3000, 4000, 1200, 0, 0),
  -> (4, 'Bob Williams', 'Designer', 8000, 2400, 3200, 960, 0, 0),
  -> (5, 'Charlie Brown', 'Tester', 11000, 3300, 4400, 1320, 0, 0);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> UPDATE Emp
  -> SET DA = Basic * 0.3,
  -> HRA = Basic * 0.4,
  -> GrossPay = Basic + DA + HRA,
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MySQL 8.0 Command Line CLI x + v
mysql> UPDATE Emp
-> SET DA = Basic * 0.3,
-> HRA = Basic * 0.4,
-> GrossPay = Basic + DA + HRA,
-> PF = Basic * 0.12,
-> NetPay = Basic + DA + HRA - PF;
Query OK, 5 rows affected (0.00 sec)
Rows matched: 5 Changed: 5 Warnings: 0

mysql> SELECT * FROM Emp e1
-> WHERE Basic = (
-> SELECT MIN(Basic) FROM Emp e2 WHERE e1.Job = e2.Job
-> );
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| EmpNo | EmpName | Job | Basic | DA | HRA | PF | GrossPay | NetPay |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | John Doe | Manager | 15000.00 | 4500.00 | 6000.00 | 1800.00 | 25500.00 | 23700.00 |
| 2 | Jane Smith | Developer | 12000.00 | 3600.00 | 4800.00 | 1440.00 | 20400.00 | 18960.00 |
| 3 | Alice Johnson | Analyst | 10000.00 | 3000.00 | 4000.00 | 1200.00 | 17000.00 | 15800.00 |
| 4 | Bob Williams | Designer | 8000.00 | 2400.00 | 3200.00 | 960.00 | 13600.00 | 12640.00 |
| 5 | Charlie Brown | Tester | 11000.00 | 3300.00 | 4400.00 | 1320.00 | 18700.00 | 17380.00 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> UPDATE Emp
-> SET NetPay = NetPay + 1200
-> WHERE NetPay < 10000;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 0 Changed: 0 Warnings: 0

mysql> SELECT * FROM Emp
-> WHERE GrossPay BETWEEN 10000 AND 20000;
```

```
MySQL 8.0 Command Line CLI x + v
mysql> UPDATE Emp
-> SET NetPay = NetPay + 1200
-> WHERE NetPay < 10000;
Query OK, 0 rows affected (0.00 sec)
Rows matched: 0 Changed: 0 Warnings: 0

mysql> SELECT * FROM Emp
-> WHERE GrossPay BETWEEN 10000 AND 20000;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| EmpNo | EmpName | Job | Basic | DA | HRA | PF | GrossPay | NetPay |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 3 | Alice Johnson | Analyst | 10000.00 | 3000.00 | 4000.00 | 1200.00 | 17000.00 | 15800.00 |
| 4 | Bob Williams | Designer | 8000.00 | 2400.00 | 3200.00 | 960.00 | 13600.00 | 12640.00 |
| 5 | Charlie Brown | Tester | 11000.00 | 3300.00 | 4400.00 | 1320.00 | 18700.00 | 17380.00 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> SELECT * FROM Emp
-> WHERE GrossPay = (SELECT MAX(GrossPay) FROM Emp);
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| EmpNo | EmpName | Job | Basic | DA | HRA | PF | GrossPay | NetPay |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | John Doe | Manager | 15000.00 | 4500.00 | 6000.00 | 1800.00 | 25500.00 | 23700.00 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> UPDATE Emp
-> SET sal = sal * 1.15
-> WHERE TIMESTAMPDIFF(YEAR, hiredate, CURDATE()) > 10;
ERROR 1054 (42S22): Unknown column 'hiredate' in 'where clause'
mysql>
```

Q.NO.2.An Enterprise wishes to maintain a database to automate its operations. Enterprise is divided into certain departments and each department consists of employees. The following two tables describes the automation schemas Dept (deptno, dname, loc) Emp (empno, ename, job, mgr, hiredate, sal, comm, deptno) a) Update the employee salary by 15%, whose experience is greater than 10 years. b) Delete the employees, who completed 30 years of service. c) Display the manager who is having maximum number of employees working under him?

```
MySQL 8.0 Command Line Cll x + v
mysql> use emp;
Database changed
mysql> CREATE TABLE emp (
-> empno INT,
-> ename VARCHAR(255),
-> job VARCHAR(255),
-> mgr INT,
-> hiredate DATE,
-> sal DECIMAL(10, 2),
-> comm DECIMAL(10, 2),
-> deptno INT
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO emp (empno, ename, job, mgr, hiredate, sal, comm, deptno)
-> VALUES
-> (7839, 'King', 'President', NULL, '1990-06-09', 5000.00, NULL, 10),
-> (7566, 'Jones', 'Manager', 7839, '1995-10-31', 2975.00, NULL, 20),
-> (7698, 'Blake', 'Manager', 7839, '1992-06-11', 2850.00, NULL, 30),
-> (7782, 'Clark', 'Manager', 7839, '1993-05-14', 2450.00, NULL, 10),
-> (7788, 'Scott', 'Analyst', 7566, '1996-03-05', 3000.00, NULL, 20);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> use dept;
Database changed
mysql> CREATE TABLE dept (
-> deptno INT PRIMARY KEY,
-> dname VARCHAR(255),
-> loc VARCHAR(255)
-> );
Query OK, 0 rows affected (0.03 sec)
```

```
MySQL 8.0 Command Line Cll x + v
mysql> INSERT INTO dept (deptno, dname, loc)
-> VALUES
-> (10, 'Sales', 'New York'),
-> (20, 'Marketing', 'Los Angeles'),
-> (30, 'HR', 'Chicago'),
-> (40, 'IT', 'San Francisco');
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0

mysql> use emp;
Database changed
mysql> UPDATE emp
-> SET sal = sal * 1.15
-> WHERE DATEDIFF(NOW(), hiredate) > 3650; -- 3650 days equal to 10 years
Query OK, 5 rows affected (0.01 sec)
Rows matched: 5 Changed: 5 Warnings: 0

mysql> DELETE FROM emp
-> WHERE DATEDIFF(NOW(), hiredate) > 10950; -- 10950 days equal to 30 years
Query OK, 3 rows affected (0.00 sec)

mysql> SELECT mgr, COUNT(*) AS num_employees
-> FROM Emp
-> GROUP BY mgr
-> ORDER BY num_employees DESC
-> LIMIT 1;
+-----+-----+
| mgr | num_employees |
+-----+-----+
| 7839 | 1 |
+-----+-----+
1 row in set (0.00 sec)
```

Q.NO.3. Create a table STUDENT with under mentioned structure by using SQL Statement:

StdID Number Primary Key StdName Character (30) NOT NULL Sex Character(6) Male or Female Percentage Number SClass Number Sec Character Stream Character(10) Science or Commerce DOB Date Date of Birth

b). Insert 6 records into STUDENT table. c). To display all the records form STUDENT table. d). To display only name and date of birth from the table STUDENT. e). To add a column (FIELD) in the STUDENT table, for example TeacherID as VARCHAR (20); f). To display student name, stream and percentage where percentage of student is more than 80 g). To delete the records form student table where StdId is 1016 h). To change a student name from SWATI to VERMA whose StdID is 1014 and also change percentage 86. i). To Drop (Delete) TeacherID field form a table.

```
MySQL 8.0 Command Line Cll x + v
mysql> Create database STUDENT;
ERROR 1007 (HY000): Can't create database 'student'; database exists
mysql> Create database students;
Query OK, 1 row affected (0.01 sec)

mysql> use students;
Database changed
mysql> CREATE TABLE STUDENT (
-> StdID INT PRIMARY KEY,
-> StdName VARCHAR(30) NOT NULL,
-> Sex VARCHAR(6) CHECK (Sex IN ('Male', 'Female')),
-> Percentage DECIMAL(5,2),
-> SClass INT,
-> Sec CHAR,
-> Stream VARCHAR(10) CHECK (Stream IN ('Science', 'Commerce')),
-> DOB DATE
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO STUDENT (StdID, StdName, Sex, Percentage, SClass, Sec, Stream, DOB)
-> VALUES
-> (1011, 'John', 'Male', 85.50, 10, 'A', 'Science', '2005-05-10'),
-> (1012, 'Mary', 'Female', 78.20, 10, 'B', 'Commerce', '2006-02-15'),
-> (1013, 'Alice', 'Female', 92.80, 11, 'C', 'Science', '2004-09-20'),
-> (1014, 'Swati', 'Female', 86.00, 12, 'D', 'Commerce', '2003-12-05'),
-> (1015, 'Robert', 'Male', 75.60, 11, 'A', 'Science', '2004-07-30'),
-> (1016, 'Michael', 'Male', 81.90, 12, 'B', 'Commerce', '2003-10-25');
Query OK, 6 rows affected (0.01 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM STUDENT;
+-----+-----+-----+-----+-----+-----+-----+-----+
| StdID | StdName | Sex | Percentage | SClass | Sec | Stream | DOB |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1011 | John | Male | 85.50 | 10 | A | Science | 2005-05-10 |
| 1012 | Mary | Female | 78.20 | 10 | B | Commerce | 2006-02-15 |
| 1013 | Alice | Female | 92.80 | 11 | C | Science | 2004-09-20 |
| 1014 | Swati | Female | 86.00 | 12 | D | Commerce | 2003-12-05 |
| 1015 | Robert | Male | 75.60 | 11 | A | Science | 2004-07-30 |
| 1016 | Michael | Male | 81.90 | 12 | B | Commerce | 2003-10-25 |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

```
MySQL 8.0 Command Line Cll x + v
mysql> SELECT * FROM STUDENT;
+-----+-----+-----+-----+-----+-----+-----+-----+
| StdID | StdName | Sex | Percentage | SClass | Sec | Stream | DOB |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1011 | John | Male | 85.50 | 10 | A | Science | 2005-05-10 |
| 1012 | Mary | Female | 78.20 | 10 | B | Commerce | 2006-02-15 |
| 1013 | Alice | Female | 92.80 | 11 | C | Science | 2004-09-20 |
| 1014 | Swati | Female | 86.00 | 12 | D | Commerce | 2003-12-05 |
| 1015 | Robert | Male | 75.60 | 11 | A | Science | 2004-07-30 |
| 1016 | Michael | Male | 81.90 | 12 | B | Commerce | 2003-10-25 |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> SELECT StdName, DOB FROM STUDENT;
+-----+-----+
| StdName | DOB |
+-----+-----+
| John | 2005-05-10 |
| Mary | 2006-02-15 |
| Alice | 2004-09-20 |
| Swati | 2003-12-05 |
| Robert | 2004-07-30 |
| Michael | 2003-10-25 |
+-----+-----+
6 rows in set (0.00 sec)

mysql> ALTER TABLE STUDENT
-> ADD TeacherID VARCHAR(20);
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

```
MySQL 8.0 Command Line Cll x + v
mysql> ALTER TABLE STUDENT
-> ADD TeacherID VARCHAR(20);
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> SELECT StdName, Stream, Percentage
-> FROM STUDENT
-> WHERE Percentage > 80;
+-----+-----+-----+
| StdName | Stream | Percentage |
+-----+-----+-----+
| John    | Science | 85.50      |
| Alice   | Science | 92.80      |
| Swati   | Commerce | 86.00      |
| Michael | Commerce | 81.90      |
+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> DELETE FROM STUDENT
-> WHERE StdID = 1016;
Query OK, 1 row affected (0.01 sec)

mysql> UPDATE STUDENT
-> SET StdName = 'VERMA', Percentage = 86.00
-> WHERE StdID = 1014;
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> ALTER TABLE STUDENT
-> DROP COLUMN TeacherID;
Query OK, 0 rows affected (0.03 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

Q.NO. 4). a). Creates a CUSTOMERS table with column name ID, NAME, AGE, ADDRESS and, SALARY and ID as a primary key. b).Insert a 5 new records into a table. c). Delete record customer name john from a table. d). Write the query to update customer salary whose age is greater than 50 in a table. e).Write the query to select the column name from a table f).Write the query to sort age in descending order g).Write the query to delete a table Customers from the database.

```
MySQL 8.0 Command Line Cll x + v
mysql> create database CUSTOMERS;
Query OK, 1 row affected (0.01 sec)

mysql> USE CUSTOMERS;
Database changed
mysql> CREATE TABLE CUSTOMERS (
-> ID INT PRIMARY KEY,
-> NAME VARCHAR(50),
-> AGE INT,
-> ADDRESS VARCHAR(100),
-> SALARY DECIMAL(10, 2)
-> );
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO CUSTOMERS (ID, NAME, AGE, ADDRESS, SALARY)
-> VALUES
-> (1, 'John', 45, '123 Main St', 50000.00),
-> (2, 'Alice', 30, '456 Elm St', 60000.00),
-> (3, 'Bob', 55, '789 Oak St', 70000.00),
-> (4, 'Mary', 40, '101 Pine St', 55000.00),
-> (5, 'David', 60, '202 Maple St', 80000.00);
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> DELETE FROM CUSTOMERS
-> WHERE NAME = 'John';
Query OK, 1 row affected (0.01 sec)

mysql> UPDATE CUSTOMERS
-> SET SALARY = SALARY * 1.10
-> WHERE AGE > 50;
```