
# Course Name: DBMS Lab

# Course Code: CSEG2146

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# Experiment 3

**a. Create the tables for Company database as per ER diagram of Exp 2.**

```
mysql> USE COMPANY;
Database changed
mysql> CREATE TABLE EMPLOYEE(
    -> Fname VARCHAR(15) NOT NULL,
    -> Minit CHAR,
    -> Lname VARCHAR(15) NOT NULL,
    -> SSN CHAR(9) NOT NULL,
    -> Bdate DATE,
    -> ADDRESS VARCHAR(30),
    -> SEX CHAR,
    -> SALARY DECIMAL(10,2),
    -> SUPER_SSN CHAR(9),
    -> Dno INT NOT NULL,
    -> PRIMARY KEY(SSN),
    -> FOREIGN KEY(SUPER_SSN) REFERENCES EMPLOYEE(SSN));
Query OK, 0 rows affected (0.19 sec)
```

```
mysql> CREATE TABLE DEPARTMENT(
    -> Dname VARCHAR(15) NOT NULL,
    -> Dnumber INT NOT NULL,
    -> Mgr_SSN CHAR(9) NOT NULL,
    -> Mgr_Start_Date DATE,
    -> PRIMARY KEY(Dnumber),
    -> UNIQUE (Dname),
    -> FOREIGN KEY(Mgr_SSN) REFERENCES EMPLOYEE(SSN));
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> ALTER TABLE EMPLOYEE
    -> ADD FOREIGN KEY (Dno)
    -> REFERENCES DEPARTMENT(Dnumber);
Query OK, 0 rows affected (0.18 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> CREATE TABLE DEPT_LOCATIONS(
    -> Dnumber INT NOT NULL,
    -> Dlocation VARCHAR(15) NOT NULL,
    -> PRIMARY KEY(Dnumber,Dlocation),
    -> FOREIGN KEY(Dnumber) REFERENCES DEPARTMENT(Dnumber));
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> CREATE TABLE PROJECT(
    -> Pname VARCHAR(15) NOT NULL,
    -> Pnumber INT NOT NULL,
    -> Plocation VARCHAR(15),
    -> Dnum INT NOT NULL,
    -> PRIMARY KEY(Pnumber),
    -> UNIQUE(Pname),
    -> FOREIGN KEY(Dnum) REFERENCES DEPARTMENT(Dnumber));
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> CREATE TABLE WORKS_ON(
    -> ESSN CHAR(9) NOT NULL,
    -> Pno INT NOT NULL,
    -> Hours DECIMAL(3,1) NOT NULL,
    -> PRIMARY KEY(ESSN,Pno),
    -> FOREIGN KEY(ESSN) REFERENCES EMPLOYEE(SSN),
    -> FOREIGN KEY(Pno) REFERENCES PROJECT(Pnumber));
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> CREATE TABLE DEPENDENT(
    -> ESSN CHAR(9) NOT NULL,
    -> Dependent_Name VARCHAR(15) NOT NULL,
    -> SEX CHAR,
    -> Bdate DATE,
    -> Relationship VARCHAR(8),
    -> PRIMARY KEY(ESSN,Dependent_Name),
    -> FOREIGN KEY(ESSN) REFERENCES EMPLOYEE(SSN));
Query OK, 0 rows affected (0.04 sec)
```

b. **Insert the following data into their respective tables of the Company database.**

```
mysql> USE COMPANY;
Database changed
mysql> INSERT INTO EMPLOYEE(FNAME,LNAME,SSN,BDATE,ADDRESS,SEX,SALARY,SUPER_SSN,DNO)
    -> VALUES
    -> ("Franklin","Wong",333445555,'1965-12-08',"638 Voss Houston TX","M",40000,888665555,5),
    -> ("Alicia","Zelaya",999887777,'1968-01-19',"3361 Castle Spring TX","F",25000,987654321,4);
Query OK, 2 rows affected (0.01 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> INSERT INTO EMPLOYEE(FNAME,LNAME,SSN,BDATE,ADDRESS,SEX,SALARY,SUPER_SSN,DNO)
    -> VALUES
    -> ("Jennifer","Wallace",987654321,'1941-06-20',"291 Berry Bellaire TX","F",43000,888665555,4),
    -> ("Ramesh","Narayan",666884444,'1962-09-15',"975 Fire Oak Humble TX","M",38000,333445555,5),
    -> ("Joyce","English",453453453,'1972-07-31',"5631 Rice Houston TX","F",25000,333445555,5);
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> INSERT INTO EMPLOYEE(FNAME,LNAME,SSN,BDATE,ADDRESS,SEX,SALARY,SUPER_SSN,DNO)
    -> VALUES
    -> ("Ahmad","Jabbar",987987987,'1969-03-29',"980 Dallas Houston TX","M",25000,987654321,4);
Query OK, 1 row affected (0.01 sec)

mysql>  INSERT INTO EMPLOYEE(FNAME,LNAME,SSN,BDATE,ADDRESS,SEX,SALARY,SUPER_SSN,DNO)
    -> VALUES
    -> ("James","Borg",888665555,'1937-11-10',"450 Stone Houston TX","M",55000,"NULL",1);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> SELECT * FROM EMPLOYEE;
+----------+-------+---------+-----------+------------+-----------------------+------+----------+-----------+-----+
| FNAME    | MINIT | LNAME   | SSN       | BDATE      | ADDRESS               | SEX  | SALARY   | SUPER_SSN | DNO |
+----------+-------+---------+-----------+------------+-----------------------+------+----------+-----------+-----+
| John     | NULL  | Smith   | 123456789 | 1965-01-09 | 731 Fondren Houston TX | M    | 30000.00 | 333445555 |   5 |
| Franklin | NULL  | Wong    | 333445555 | 1965-12-08 | 638 Voss Houston TX    | M    | 40000.00 | 888665555 |   5 |
| Joyce    | NULL  | English | 453453453 | 1972-07-31 | 5631 Rice Houston TX   | F    | 25000.00 | 333445555 |   5 |
| Ramesh   | NULL  | Narayan | 666884444 | 1962-09-15 | 975 Fire Oak Humble TX | M    | 38000.00 | 333445555 |   5 |
| James    | NULL  | Borg    | 888665555 | 1937-11-10 | 450 Stone Houston TX   | M    | 55000.00 | NULL      |   1 |
| Jennifer | NULL  | Wallace | 987654321 | 1941-06-20 | 291 Berry Bellaire TX  | F    | 43000.00 | 888665555 |   4 |
| Ahmad    | NULL  | Jabbar  | 987987987 | 1969-03-29 | 980 Dallas Houston TX  | M    | 25000.00 | 987654321 |   4 |
| Alicia   | NULL  | Zelaya  | 999887777 | 1968-01-19 | 3361 Castle Spring TX  | F    | 25000.00 | 987654321 |   4 |
+----------+-------+---------+-----------+------------+-----------------------+------+----------+-----------+-----+
8 rows in set (0.01 sec)
```

```
mysql> INSERT INTO DEPARTMENT(DNAME,DNUMBER,MGR_SSN,MGR_Start_Date)
    -> VALUES
    -> ("Research",5,333445555,'1988-05-22'),
    -> ("Administration",4,987654321,'1995-01-01'),
    -> ("Headquarters",1,888665555,'1981-06-19');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
mysql> SELECT * FROM DEPARTMENT;
+----------------+---------+-----------+-----------------+
| DNAME          | DNUMBER | MGR_SSN   | MGR_Start_Date  |
+----------------+---------+-----------+-----------------+
| Headquarters   |       1 | 888665555 | 1981-06-19      |
| Administration |       4 | 987654321 | 1995-01-01      |
| Research       |       5 | 333445555 | 1988-05-22      |
+----------------+---------+-----------+-----------------+
3 rows in set (0.00 sec)
```

```
mysql> INSERT INTO DEPT_LOCATIONS(DNUMBER,DLOCATION) VALUES
    -> (1,"Houston"),
    -> (4,"Stafford"),
    -> (5,"Bellaire"),
    -> (5,"Houston"),
    -> (5,"Sugarland");
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM DEPT_LOCATIONS;
+---------+-----------+
| DNUMBER | DLOCATION |
+---------+-----------+
|       1 | Houston   |
|       4 | Stafford  |
|       5 | Bellaire  |
|       5 | Houston   |
|       5 | Sugarland |
+---------+-----------+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO PROJECT(PNAME,PNUMBER,PLOCATION,DNUM) VALUES
    -> ("ProductX",1,"Bellaire",5),
    -> ("ProductY",2,"Sugarland",5),
    -> ("ProductZ",3,"Houston",5),
    -> ("Computerization",10,"Stafford",4),
    -> ("Reorganization",20,"Houston",1),
    -> ("Newbenefits",30,"Stafford",4);
Query OK, 6 rows affected (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM PROJECT;
+----------------+---------+-----------+------+
| PNAME          | PNUMBER | PLOCATION | DNUM |
+----------------+---------+-----------+------+
| ProductX       |       1 | Bellaire  |    5 |
| ProductY       |       2 | Sugarland |    5 |
| ProductZ       |       3 | Houston   |    5 |
| Computerization |      10 | Stafford  |    4 |
| Reorganization |      20 | Houston   |    1 |
| Newbenefits    |      30 | Stafford  |    4 |
+----------------+---------+-----------+------+
6 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM WORKS_ON;
+-----------+-----+-------+
| ESSN      | PNO | Hours |
+-----------+-----+-------+
| 123456789 |   1 |  32.5 |
| 123456789 |   2 |   7.5 |
| 333445555 |   2 |  10.0 |
| 333445555 |   3 |  10.0 |
| 333445555 |  10 |  10.0 |
| 333445555 |  20 |  10.0 |
| 453453453 |   1 |  20.0 |
| 453453453 |   2 |  20.0 |
| 666884444 |   3 |  40.0 |
| 888665555 |  20 |  10.0 |
| 987654321 |  20 |  15.0 |
| 987654321 |  30 |  20.0 |
| 987987987 |  10 |  35.0 |
| 987987987 |  20 |   5.0 |
| 987987987 |  30 |  20.0 |
| 999887777 |  10 |  10.0 |
| 999887777 |  30 |  30.0 |
+-----------+-----+-------+
17 rows in set (0.00 sec)
```

```
mysql> INSERT INTO DEPENDENT(ESSN,DEPENDENT_NAME,SEX,BDATE,RELATIONSHIP) VALUES
    -> (333445555,"Joy","F",'1958-05-03',"Spouse"),
    -> (987654321,"Abner","M",'1942-02-28',"Spouse"),
    -> (123456789,"Michael","M",'1988-01-04',"Son"),
    -> (123456789,"Alice","F",'1988-12-30',"Daughter"),
    -> (123456789,"Elizabeth","F",'1967-05-05',"Spouse");
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM DEPENDENT;
+-----------+----------------+------+------------+--------------+
| ESSN      | DEPENDENT_NAME | SEX  | BDATE      | RELATIONSHIP |
+-----------+----------------+------+------------+--------------+
| 123456789 | Alice          | F    | 1988-12-30 | Daughter     |
| 123456789 | Elizabeth      | F    | 1967-05-05 | Spouse       |
| 123456789 | Michael        | M    | 1988-01-04 | Son          |
| 333445555 | Alice          | F    | 1986-04-04 | Daughter     |
| 333445555 | Joy            | F    | 1958-05-03 | Spouse       |
| 333445555 | Theodore       | M    | 1983-10-25 | Son          |
| 987654321 | Abner          | M    | 1942-02-28 | Spouse       |
+-----------+----------------+------+------------+--------------+
7 rows in set (0.00 sec)
```

# Experiment 4:

**Title: To understand and apply the concept of Constraints.**

**Objective:** To understand the concept of data constraints that is enforced on data being stored in the table. Focus on Primary Key and the Foreign Key.

**1. Create the tables described below:**

**Table name: CLIENT_MASTER**

```
mysql> USE COMPANY;
Database changed
mysql> CREATE TABLE CLIENT_MASTER(
    -> CLIENTNO VARCHAR(6) PRIMARY KEY,
    -> NAME VARCHAR(20) NOT NULL,
    -> ADDRESS1 VARCHAR(30),
    -> ADDRESS2 VARCHAR(30),
    -> CITY VARCHAR(15),
    -> PINCODE INT(8),
    -> STATE VARCHAR(15),
    -> BALDUE DECIMAL(10,2));
Query OK, 0 rows affected, 1 warning (0.43 sec)
```

```
mysql> INSERT INTO CLIENT_MASTER(CLIENTNO,NAME,CITY,PINCODE,STATE,BALDUE) VALUES
    -> ("C00001","Ivan Bayross","Mumbai",400054,"Maharashtra",15000),
    -> ("C00002","Mamta Muzumdar","Madras",780001,"Tamil Nadu",0),
    -> ("C00003","Chhaya Bankar","Mumbai",400057,"Maharashtra",5000),
    -> ("C00004","Ashwini Joshi","Bangalore",560001,"Karnataka",0),
    -> ("C00005","Hansel Colaco","Mumbai",400060,"Maharashtra",2000),
    -> ("C00006","Deepak Sharma","Mangalore",560050,"Karnataka",0);
Query OK, 6 rows affected (0.03 sec)
Records: 6  Duplicates: 0  Warnings: 0
```

**TableName: PRODUCT_MASTER**
**Description:** used to store product information

```
mysql> CREATE TABLE PRODUCT_MASTER(
    -> PRODUCTNO VARCHAR(6) PRIMARY KEY,
    -> DESCRIPTION VARCHAR(15) NOT NULL,
    -> PROFITPERCENT DECIMAL(4,2) NOT NULL,
    -> UNITMEASURE VARCHAR(10) NOT NULL,
    -> QTYONHAND INT(8) NOT NULL,
    -> REORDERL_VL INT(8) NOT NULL,
    -> SELLPRICE DECIMAL(8,2) NOT NULL,
    -> COSTPRICE DECIMAL(8,2) NOT NULL);
Query OK, 0 rows affected, 2 warnings (0.04 sec)
```

```
mysql> INSERT INTO PRODUCT_MASTER(PRODUCTNO,DESCRIPTION,PROFITPERCENT,UNITMEASURE,Q
TYONHAND,REORDERL_VL, SELLPRICE,COSTPRICE) VALUES
    -> ("P00001","T-Shirt",5,"Piece",200,50,350,250),
    -> ("P0345","Shirts",6,"Piece",150,50,500,350),
    -> ("P06734","Cotton Jeans",5,"Piece",100,20,600,450),
    -> ("P07865","Jeans",5,"Piece",100,20,750,500),
    -> ("P07868","Trousers",2,"Piece",150,50,850,550),
    -> ("P07885","Pull Overs",2.5,"Piece",80,30,700,450),
    -> ("P07965","Denim Jeans",4,"Piece",100,40,350,250),
    -> ("P07975","Lycra Tops",5,"Piece",70,30,300,175),
    -> ("P08865","Skirts",5,"Piece",75,30,450,300);
Query OK, 9 rows affected (0.03 sec)
Records: 9  Duplicates: 0  Warnings: 0
```

**Table Name:** **SALESMAN_MASTER**

**Description:** used to store salesman information working for the company.

```
mysql> CREATE TABLE SALESMAN_MASTER(
    -> SALESMANNO VARCHAR(6) PRIMARY KEY,
    -> SALESMANNAME VARCHAR(20) NOT NULL,
    -> ADDRESS1 VARCHAR(30) NOT NULL,
    -> ADDRESS2 VARCHAR(30),
    -> CITY VARCHAR(20),
    -> PINCODE INT(8),
    -> STATE VARCHAR(20),
    -> SALAMT REAL(8,2) NOT NULL,
    -> TGTTOGET DECIMAL(6,2) NOT NULL,
    -> YTDSALES DOUBLE(6,2) NOT NULL,
    -> REMARKS VARCHAR(60));
Query OK, 0 rows affected, 3 warnings (0.06 sec)
```

```
mysql>  INSERT INTO SALESMAN_MASTER(SALESMANNO,SALESMANNAME,ADDRESS1,ADDRESS2,CITY,PINCODE
,STATE) VALUES
    -> ("S00001","Aman","A/14","Worli","Mumbai",400002,"Maharashtra"),
    -> ("S00002","Omkar","65","Nariman","Mumbai",400001,"Maharashtra"),
    -> ("S00003","Raj","P-7","Bandra","Mumbai",400032,"Maharashtra"),
    -> ("S00004","Ashish","A/5","Juhu","Mumbai",400044,"Maharashtra");
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

2. **Exercise on retrieving records from a table.**

a. Find out the names of all the clients.

```
mysql> SELECT NAME FROM CLIENT_MASTER;
+-----------------+
| NAME            |
+-----------------+
| Ivan Bayross    |
| Mamta Muzumdar  |
| Chhaya Bankar   |
| Ashwini Joshi   |
| Hansel Colaco   |
| Deepak Sharma   |
+-----------------+
```

b. Retrieve the entire contents of the Client_Master table.

```
mysql> SELECT * FROM CLIENT_MASTER;
+----------+---------------+----------+----------+-----------+---------+-------------+----------+
| CLIENTNO | NAME          | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE   |
+----------+---------------+----------+----------+-----------+---------+-------------+----------+
| C00001   | Ivan Bayross  | NULL     | NULL     | Mumbai    |  400054 | Maharashtra | 15000.00 |
| C00002   | Mamta Muzumdar| NULL     | NULL     | Madras    |  780001 | Tamil Nadu  |     0.00 |
| C00003   | Chhaya Bankar | NULL     | NULL     | Mumbai    |  400057 | Maharashtra |  5000.00 |
| C00004   | Ashwini Joshi | NULL     | NULL     | Bangalore |  560001 | Karnataka   |     0.00 |
| C00005   | Hansel Colaco | NULL     | NULL     | Mumbai    |  400060 | Maharashtra |  2000.00 |
| C00006   | Deepak Sharma | NULL     | NULL     | Mangalore |  560050 | Karnataka   |     0.00 |
+----------+---------------+----------+----------+-----------+---------+-------------+----------+
```

c. Retrieve the list of names, city and the state of all the clients.

```
mysql> SELECT NAME, CITY, STATE FROM CLIENT_MASTER;
+-----------------+-----------+-------------+
| NAME            | CITY      | STATE       |
+-----------------+-----------+-------------+
| Ivan Bayross    | Mumbai    | Maharashtra |
| Mamta Muzumdar  | Madras    | Tamil Nadu  |
| Chhaya Bankar   | Mumbai    | Maharashtra |
| Ashwini Joshi   | Bangalore | Karnataka   |
| Hansel Colaco   | Mumbai    | Maharashtra |
| Deepak Sharma   | Mangalore | Karnataka   |
+-----------------+-----------+-------------+
6 rows in set (0.01 sec)
```

d. List the various products available from the Product_Master table.

```
mysql> SELECT DESCRIPTION FROM PRODUCT_MASTER;
+--------------+
| DESCRIPTION  |
+--------------+
| T-Shirt      |
| Shirts       |
| Cotton Jeans |
| Jeans        |
| Trousers     |
| Pull Overs   |
| Denim Jeans  |
| Lycra Tops   |
| Skirts       |
+--------------+
9 rows in set (0.01 sec)
```

e. List all the clients who are located in Mumbai.

```
mysql> SELECT NAME,CITY FROM CLIENT_MASTER WHERE CITY="Mumbai";
+---------------+--------+
| NAME          | CITY   |
+---------------+--------+
| Ivan Bayross  | Mumbai |
| Chhaya Bankar | Mumbai |
| Hansel Colaco | Mumbai |
+---------------+--------+
3 rows in set (0.00 sec)
```

f. Find the names of salesman who have a salary equal to Rs.3000.

```
mysql> SELECT SALESMANNAME FROM SALESMAN_MASTER WHERE SALAMT=30000;
+--------------+
| SALESMANNAME |
+--------------+
| Aman         |
| Raj          |
| Ashish       |
+--------------+
3 rows in set (0.01 sec)
```

**3. Exercise on updating records in a table**

a. Change the city of ClientNo ‘C00005’ to ‘Bangalore’.

```
mysql> UPDATE CLIENT_MASTER SET CITY="Bangalore" WHERE CLIENTNO="C00005";
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT CLIENTNO,CITY FROM CLIENT_MASTER;
+----------+-----------+
| CLIENTNO | CITY      |
+----------+-----------+
| C00001   | Mumbai    |
| C00002   | Madras    |
| C00003   | Mumbai    |
| C00004   | Bangalore |
| C00005   | Bangalore |
| C00006   | Mangalore |
+----------+-----------+
6 rows in set (0.00 sec)
```

b. Change the BalDue of ClientNo 'C00001' to Rs.1000.

```
mysql> UPDATE CLIENT_MASTER SET BALDUE=1000 WHERE CLIENTNO="C00001";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT CLIENTNO,BALDUE FROM CLIENT_MASTER;
+----------+---------+
| CLIENTNO | BALDUE  |
+----------+---------+
| C00001   | 1000.00 |
| C00002   |    0.00 |
| C00003   | 5000.00 |
| C00004   |    0.00 |
| C00005   | 2000.00 |
| C00006   |    0.00 |
+----------+---------+
6 rows in set (0.01 sec)
```

c. Change the cost price of 'Trousers' to rs.950.00.

```
mysql> UPDATE PRODUCT_MASTER SET COSTPRICE=950 WHERE DESCRIPTION="Trousers";
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT DESCRIPTION, COSTPRICE FROM PRODUCT_MASTER;
+-------------+-----------+
| DESCRIPTION | COSTPRICE |
+-------------+-----------+
| T-Shirt     |    250.00 |
| Shirts      |    350.00 |
| Cotton Jeans|    450.00 |
| Jeans       |    500.00 |
| Trousers    |    950.00 |
| Pull Overs  |    450.00 |
| Denim Jeans |    250.00 |
| Lycra Tops  |    175.00 |
| Skirts      |    300.00 |
+-------------+-----------+
9 rows in set (0.00 sec)
```

d. Change the city of the salesman to Pune.

```
mysql> UPDATE SALESMAN_MASTER SET CITY="Pune";
Query OK, 4 rows affected (0.01 sec)
Rows matched: 4  Changed: 4  Warnings: 0

mysql> SELECT SALESMANNAME,CITY FROM SALESMAN_MASTER;
+--------------+------+
| SALESMANNAME | CITY |
+--------------+------+
| Aman         | Pune |
| Omkar        | Pune |
| Raj          | Pune |
| Ashish       | Pune |
+--------------+------+
4 rows in set (0.00 sec)
```

**4 Exercise on deleting records in a table**

a. Delete all salesman from the Salesman_Master whose salaries are equal to Rs.3500.

```
mysql> DELETE FROM SALESMAN_MASTER WHERE SALAMT=3500;
Query OK, 0 rows affected (0.01 sec)
```

b. Delete all products from Product_Master where the quantity on hand is equal to 100.

```
mysql> DELETE FROM PRODUCT_MASTER WHERE QTYONHAND = 100;
Query OK, 3 rows affected (0.01 sec)

mysql> SELECT DESCRIPTION,QTYONHAND FROM PRODUCT_MASTER;
+-------------+-----------+
| DESCRIPTION | QTYONHAND |
+-------------+-----------+
| T-Shirt     |       200 |
| Shirts      |       150 |
| Trousers    |       150 |
| Pull Overs  |        80 |
| Lycra Tops  |        70 |
| Skirts      |        75 |
+-------------+-----------+
6 rows in set (0.00 sec)
```

c. Delete from Client_Master where the column state holds the value ‘Tamil Nadu’.

```
mysql> DELETE FROM CLIENT_MASTER WHERE STATE="Tamil Nadu";
Query OK, 1 row affected (0.01 sec)

mysql> SELECT STATE FROM CLIENT_MASTER;
+-------------+
| STATE       |
+-------------+
| Maharashtra |
| Maharashtra |
| Karnataka   |
| Maharashtra |
| Karnataka   |
+-------------+
5 rows in set (0.00 sec)
```

5. **Exercise on altering the table structure**

a. Add a column called ‘Telephone’ of data type integer to the Client_Master table.

```
mysql> ALTER TABLE CLIENT_MASTER ADD TELEPHONE INT;
Query OK, 0 rows affected (0.08 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> DESCRIBE CLIENT_MASTER;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| CLIENTNO  | varchar(6)   | NO   | PRI | NULL    |       |
| NAME      | varchar(20)  | NO   |     | NULL    |       |
| ADDRESS1  | varchar(30)  | YES  |     | NULL    |       |
| ADDRESS2  | varchar(30)  | YES  |     | NULL    |       |
| CITY      | varchar(15)  | YES  |     | NULL    |       |
| PINCODE   | int          | YES  |     | NULL    |       |
| STATE     | varchar(15)  | YES  |     | NULL    |       |
| BALDUE    | decimal(10,2)| YES  |     | NULL    |       |
| TELEPHONE | int          | YES  |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
9 rows in set (0.12 sec)
```

b. Change the size off SellPrice column in Product _Master to 10, 2.

```
mysql> ALTER TABLE PRODUCT_MASTER MODIFY SELLPRICE DECIMAL(10, 2);
Query OK, 6 rows affected (0.09 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> DESCRIBE PRODUCT_MASTER;
+---------------+---------------+------+-----+---------+-------+
| Field         | Type          | Null | Key | Default | Extra |
+---------------+---------------+------+-----+---------+-------+
| PRODUCTNO     | varchar(6)    | NO   | PRI | NULL    |       |
| DESCRIPTION   | varchar(15)   | NO   |     | NULL    |       |
| PROFITPERCENT | decimal(4,2)  | NO   |     | NULL    |       |
| UNITMEASURE   | varchar(10)   | NO   |     | NULL    |       |
| QTYONHAND     | int           | NO   |     | NULL    |       |
| REORDERL_VL   | int           | NO   |     | NULL    |       |
| SELLPRICE     | decimal(10,2) | YES  |     | NULL    |       |
| COSTPRICE     | decimal(8,2)  | NO   |     | NULL    |       |
+---------------+---------------+------+-----+---------+-------+
8 rows in set (0.01 sec)
```

6. **Exercise on deleting the table structure along with the data**
   a. Destroy the table Client_Master along with its data.

```
mysql> DROP TABLE CLIENT_MASTER;
Query OK, 0 rows affected (0.04 sec)

mysql> DESCRIBE CLIENT_MASTER;
ERROR 1146 (42S02): Table 'company.client_master' doesn't exist
mysql>
```

# Experiment 5:

**Title: To understand and use SQL Sub-Query**

**Objective:** To understand the use of sql subquery.

**1. Create the following table.**

Supplier-(scode,sname,scity,turnover)

```
mysql> CREATE TABLE SUPPLIER(
    -> SCODE INT PRIMARY KEY,
    -> SNAME VARCHAR(20) NOT NULL,
    -> SCITY VARCHAR(15) NOT NULL,
    -> TURNOVER INT);
Query OK, 0 rows affected (0.05 sec)
```

Part-(pcode,weigh,color,cost,sellingprice)

```
Database changed
mysql> CREATE TABLE PART(
    -> PCODE INT PRIMARY KEY,
    -> WEIGHT INT NOT NULL,
    -> COLOR VARCHAR(10),
    -> COST INT NOT NULL,
    -> SELLINGPRICE INT NOT NULL);
Query OK, 0 rows affected (0.05 sec)
```

Supplier_Part-(scode,pcode,qty)

```
mysql> CREATE TABLE SUPPLIER_PART(
    -> SCODE INT NOT NULL,
    -> PCODE INT NOT NULL,
    -> QTY INT NOT NULL,
    -> FOREIGN KEY(SCODE) REFERENCES SUPPLIER(SCODE),
    -> FOREIGN KEY(PCODE) REFERENCES PART(PCODE));
Query OK, 0 rows affected (0.09 sec)
```

**2. Populate the table**

```
mysql> SELECT * FROM SUPPLIER;
+-------+---------------+----------+----------+
| SCODE | SNAME         | SCITY    | TURNOVER |
+-------+---------------+----------+----------+
| 11000 | George_Company | Bangalore | 10000000 |
| 11011 | Himanshu_Int.  | Mumbai    |  5000000 |
| 11031 | L_n_T          | Hyderabad | 15000000 |
+-------+---------------+----------+----------+
3 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM PART;
+-------+--------+-------+------+--------------+
| PCODE | WEIGHT | COLOR | COST | SELLINGPRICE |
+-------+--------+-------+------+--------------+
| 12001 |     70 | NULL  | 1300 |         1000 |
| 12011 |     30 | NULL  |  850 |          750 |
| 12012 |     50 | NULL  | 1500 |         1200 |
+-------+--------+-------+------+--------------+
3 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM SUPPLIER_PART;
+-------+-------+-----+
| SCODE | PCODE | QTY |
+-------+-------+-----+
| 11000 | 12001 |  10 |
| 11031 | 12012 |  25 |
+-------+-------+-----+
2 rows in set (0.00 sec)
```

**3. Write appropriate SQL Statement for the following:**

1. Get the supplier number and part number in ascending order of supplier number.

```
mysql> SELECT SCODE, PCODE
    -> FROM SUPPLIER_PART
    -> ORDER BY SCODE ASC;
+-------+-------+
| SCODE | PCODE |
+-------+-------+
| 11000 | 12001 |
| 11031 | 12012 |
+-------+-------+
2 rows in set (0.00 sec)
```

2. Get the details of supplier who operate from Bombay with turnover 50.

```
mysql> SELECT * FROM SUPPLIER WHERE SCITY="Mumbai";
+-------+---------------+--------+----------+
| SCODE | SNAME         | SCITY  | TURNOVER |
+-------+---------------+--------+----------+
| 11011 | Himanshu_Int. | Mumbai |  5000000 |
+-------+---------------+--------+----------+
1 row in set (0.00 sec)
```

3. Get the total number of supplier.

```
mysql> SELECT COUNT(*) AS total_suppliers
    -> FROM SUPPLIER;
+-----------------+
| total_suppliers |
+-----------------+
|               3 |
+-----------------+
1 row in set (0.03 sec)
```

4. Get the part number weighing between 25 and 35.

```
mysql> SELECT PCODE
    -> FROM PART
    -> WHERE WEIGHT BETWEEN 25 AND 35;
+-------+
| PCODE |
+-------+
| 12011 |
+-------+
1 row in set (0.01 sec)
```

5. Get the supplier number whose turnover is null.

```
mysql> SELECT SNAME FROM SUPPLIER WHERE TURNOVER="NULL";
Empty set, 1 warning (0.01 sec)
```

6. Get the part number that cost 20, 30 or 40 rupees.

```
mysql> SELECT PCODE
    -> FROM PART
    -> WHERE COST IN (20, 30, 40);
Empty set (0.00 sec)
```

7. Get the total quantity of part 12012 that is supplied.

```
mysql> SELECT SUM(QTY) AS total_quantity
    -> FROM SUPPLIER_PART
    -> WHERE PCODE = 12012;
+----------------+
| total_quantity |
+----------------+
|             25 |
+----------------+
1 row in set (0.01 sec)
```

8. Get the name of supplier who supply part 2.

9. Get the part number whose cost is greater than the average cost.

```
mysql> SELECT PCODE
    -> FROM PART
    -> WHERE COST > (SELECT AVG(COST) FROM PART);
+-------+
| PCODE |
+-------+
| 12001 |
| 12012 |
+-------+
2 rows in set (0.01 sec)
```

10. Get the supplier number and turnover in descending order of turnover.

```
mysql> SELECT SCODE, TURNOVER FROM SUPPLIER ORDER BY TURNOVER DESC;
+-------+----------+
| SCODE | TURNOVER |
+-------+----------+
| 11031 | 15000000 |
| 11000 | 10000000 |
| 11011 |  5000000 |
+-------+----------+
3 rows in set (0.00 sec)
```