Experiment 1

TITLE: DDL (Data Definition Language) commands
Objective: To understand the concept of designing issue related to the database with creating, populating the tables.

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

Table name: CLIENT_MASTER
Description:used to store client information.

Column name	data type	Size
CLIENTNO	Varchar	6
NAME	Varchar	20
ADDRESS 1	Varchar	30
ADDRESS 2	Varchar	30
CITY	Varchar	15
PINCODE	Integer	
STATE	Varchar	15
BALDUE	decimal	10,2

Output:

```
mysql> CREATE TABLE CLIENT_MASTER (
    ->     CLIENTNO VARCHAR(6),
    ->     NAME VARCHAR(20),
    ->     ADDRESS1 VARCHAR(30),
    ->     ADDRESS2 VARCHAR(30),
    ->     CITY VARCHAR(15),
    ->     PINCODE INTEGER,
    ->     STATE VARCHAR(15),
    ->     BALDUE DECIMAL(10,2)
    -> );
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM CLIENT_MASTER;
Empty set (0.01 sec)

mysql>
```

Table Name: PRODUCT_MASTER
Description:used to store product informatio

Column name	data type	Size
PRODUCTNO	Varchar	6
DESCRIPTION	Varchar	15
PROFITPERCENT	Decimal	4,2
UNIT MEASURE	Varchar	10
QTYONHAND	Integer	
REORDERL VL	Integer	
SELLPRICE	Decimal	8,2
COSTPRICE	Decimal	8,2

Output:

```
mysql> CREATE TABLE PRODUCT_MASTER (
    ->     ProductNo VARCHAR(6),
    ->     Description VARCHAR(50),
    ->     ProfitPercent DECIMAL(5,2),
    ->     UnitMeasure VARCHAR(10),
    ->     QtyOnHand INT,
    ->     RecorderLvl INT,
    ->     SellPrice DECIMAL(10,2),
    ->     CostPrice DECIMAL(10,2)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql> SELECT * FROM PRODUCT_MASTER;
Empty set (0.00 sec)

mysql>
```

Table Name: SALESMAN_MASTER

Description: Used to store salesman information working for the company.

Column name	data type	Size
SALESMANNO	Varchar	6
SALESMANNAME	Varchar	20
ADDRESS 1	Varchar	30
ADDRESS 2	Varchar	30
CITY	Varchar	20
PINCODE	Integer	
STATE	Varchar	20
SALAMT	Real	

TGTTOGET	Decimal	
YTDSALES	Double	6,2
REMARKS	Varchar	60

Output:

```
mysql> CREATE TABLE SALESMAN_MASTER (
    ->     SALESMANNO VARCHAR(6),
    ->     SALESMANNAME VARCHAR(20),
    ->     ADDRESS1 VARCHAR(30),
    ->     ADDRESS2 VARCHAR(30),
    ->     CITY VARCHAR(20),
    ->     PINCODE INTEGER,
    ->     STATE VARCHAR(20),
    ->     SALAMT REAL,
    ->     TGTTOGET DECIMAL,
    ->     YTDSALES DOUBLE,
    ->     REMARKS VARCHAR(60)
    -> );
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM SALESMAN_MASTER;
Empty set (0.00 sec)

mysql>
```

2. **Insert the following data into their respective tables:**

   a. Data for **CLIENT_MASTER** table:

Client no	Name	city	Pincode	state	BalDue
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

Output:

```
mysql> INSERT INTO CLIENT_MASTER (CLIENTNO, NAME, ADDRESS1, 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 (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM CLIENT_MASTER;
+----------+---------------+----------+----------+-----------+---------+-------------+----------+
| CLIENTNO | NAME          | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE   |
+----------+---------------+----------+----------+-----------+---------+-------------+----------+
| C00001   | Ivan bayross  |          | NULL     | Mumbai    |  400054 | Maharashtra | 15000.00 |
| C00002   | Mamta muzumdar|          | NULL     | Madras    |  780001 | Tamil nadu  |     0.00 |
| C00003   | Chhaya bankar |          | NULL     | Mumbai    |  400057 | Maharashtra |  5000.00 |
| C00004   | Ashwini joshi |          | NULL     | Bangalore |  560001 | Karnataka   |     0.00 |
| C00005   | Hansel colaco |          | NULL     | Mumbai    |  400060 | Maharashtra |  2000.00 |
| C00006   | Deepak sharma |          | NULL     | Mangalore |  560050 | Karnataka   |     0.00 |
+----------+---------------+----------+----------+-----------+---------+-------------+----------+
6 rows in set (0.00 sec)

mysql>
```

b. Data for **PRODUCT_MASTER** table:

ProductNo	Description	Profit percent	Unit measure	Qtyonhand	RecorderLvl	SellPrice	CostPrice
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

Output:

```
mysql> INSERT INTO PRODUCT_MASTER (ProductNo, Description, ProfitPercent, UnitMeasure, QtyOnHand, RecorderLvl, SellPrice, CostPrice) VALUES
    -> ('P00001', 'T-Shirt', 5, 'Piece', 200, 50, 350.00, 250.00),
    -> ('P0345', 'Shirts', 6, 'Piece', 150, 50, 500.00, 350.00),
    -> ('P06734', 'Cotton jeans', 5, 'Piece', 100, 20, 600.00, 450.00),
    -> ('P07865', 'Jeans', 5, 'Piece', 100, 20, 750.00, 500.00),
    -> ('P07868', 'Trousers', 2, 'Piece', 150, 50, 850.00, 550.00),
    -> ('P07885', 'Pull Overs', 2.5, 'Piece', 80, 30, 700.00, 450.00),
    -> ('P07965', 'Denim jeans', 4, 'Piece', 100, 40, 350.00, 250.00),
    -> ('P07975', 'Lycra tops', 5, 'Piece', 70, 30, 300.00, 175.00),
    -> ('P08865', 'Skirts', 5, 'Piece', 75, 30, 450.00, 300.00);
Query OK, 9 rows affected (0.01 sec)
Records: 9  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM PRODUCT_MASTER;
+-----------+-------------+--------------+------------+-----------+-------------+-----------+-----------+
| ProductNo | Description | ProfitPercent | UnitMeasure | QtyOnHand | RecorderLvl | SellPrice | CostPrice |
+-----------+-------------+--------------+------------+-----------+-------------+-----------+-----------+
| P00001    | T-Shirt     |         5.00 | Piece      |       200 |          50 |    350.00 |    250.00 |
| P0345     | Shirts      |         6.00 | Piece      |       150 |          50 |    500.00 |    350.00 |
| P06734    | Cotton jeans |         5.00 | Piece      |       100 |          20 |    600.00 |    450.00 |
| P07865    | Jeans       |         5.00 | Piece      |       100 |          20 |    750.00 |    500.00 |
| P07868    | Trousers    |         2.00 | Piece      |       150 |          50 |    850.00 |    550.00 |
| P07885    | Pull Overs  |         2.50 | Piece      |        80 |          30 |    700.00 |    450.00 |
| P07965    | Denim jeans |         4.00 | Piece      |       100 |          40 |    350.00 |    250.00 |
| P07975    | Lycra tops  |         5.00 | Piece      |        70 |          30 |    300.00 |    175.00 |
| P08865    | Skirts      |         5.00 | Piece      |        75 |          30 |    450.00 |    300.00 |
+-----------+-------------+--------------+------------+-----------+-------------+-----------+-----------+
9 rows in set (0.00 sec)

mysql>
```

c. Data for **SALESMAN_MASTER** table:

SalesmanNo	Name	Address1	Address2	City	PinCode	State
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

SalesmanNo	SalAmt	TgtToGet	YtdSales	Remarks
S00001	3000	100	50	Good
S00002	3000	200	100	Good
S00003	3000	200	100	Good
S00004	3500	200	150	Good

Output:

```
mysql> INSERT INTO SALESMAN_MASTER (SALESMANNO, SALESMANNAME, ADDRESS1, ADDRESS2, CITY, PINCODE, STATE, SALAMT, TGTTOGET, YTDSALES, REMARKS) VALUES
    -> ('S00001', 'Aman', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra', 3000, 100, 50, 'Good'),
    -> ('S00002', 'Omkar', '65', 'Nariman', 'Mumbai', 400001, 'Maharashtra', 3000, 200, 100, 'Good'),
    -> ('S00003', 'Raj', 'P-7', 'Bandra', 'Mumbai', 400032, 'Maharashtra', 3000, 200, 100, 'Good'),
    -> ('S00004', 'Ashish', 'A/5', 'Juhu', 'Mumbai', 400044, 'Maharashtra', 3500, 200, 150, 'Good');
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM SALESMAN_MASTER;
+------------+-------------+----------+----------+--------+---------+-------------+--------+----------+----------+---------+
| SALESMANNO | SALESMANNAME | ADDRESS1 | ADDRESS2 | CITY   | PINCODE | STATE       | SALAMT | TGTTOGET | YTDSALES | REMARKS |
+------------+-------------+----------+----------+--------+---------+-------------+--------+----------+----------+---------+
| S00001     | Aman        | A/14     | Worli    | Mumbai |  400002 | Maharashtra |   3000 |      100 |       50 | Good    |
| S00002     | Omkar       | 65       | Nariman  | Mumbai |  400001 | Maharashtra |   3000 |      200 |      100 | Good    |
| S00003     | Raj         | P-7      | Bandra   | Mumbai |  400032 | Maharashtra |   3000 |      200 |      100 | Good    |
| S00004     | Ashish      | A/5      | Juhu     | Mumbai |  400044 | Maharashtra |   3500 |      200 |      150 | Good    |
+------------+-------------+----------+----------+--------+---------+-------------+--------+----------+----------+---------+
4 rows in set (0.00 sec)

mysql>
```

Experiment 2

TITLE: DML commands with constraints

Objective: - To understand the concept of different DML commands.

1. Exercise on retrieving records from a table.

   a. Find out the names of all the clients.

Output:

```
mysql> SELECT NAME FROM CLIENT_MASTER;
+----------------+
| NAME           |
+----------------+
| Ivan bayross   |
| Mamta muzumdar |
| Chhaya bankar  |
| Ashwini joshi  |
| Hansel colaco  |
| Deepak sharma  |
+----------------+
6 rows in set (0.00 sec)
```

   b. Retrieve the entire contents of the Client_Master table.

Output:

```
mysql> SELECT * FROM CLIENT_MASTER;
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
| CLIENTNO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE   |
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
| C00001   | Ivan bayross   |          | NULL     | Mumbai    |  400054 | Maharashtra | 15000.00 |
| C00002   | Mamta muzumdar |          | NULL     | Madras    |  780001 | Tamil nadu  |     0.00 |
| C00003   | Chhaya bankar  |          | NULL     | Mumbai    |  400057 | Maharashtra |  5000.00 |
| C00004   | Ashwini joshi  |          | NULL     | Bangalore |  560001 | Karnataka   |     0.00 |
| C00005   | Hansel colaco  |          | NULL     | Mumbai    |  400060 | Maharashtra |  2000.00 |
| C00006   | Deepak sharma  |          | NULL     | Mangalore |  560050 | Karnataka   |     0.00 |
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
6 rows in set (0.00 sec)
```

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

Output:

```
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 (0.00 sec)
```

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

Output:

```
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 (0.00 sec)
```

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

Output:

```
mysql> SELECT * FROM CLIENT_MASTER WHERE CITY = 'Mumbai';
+----------+---------------+----------+----------+--------+---------+-------------+----------+
| CLIENTNO | NAME          | ADDRESS1 | ADDRESS2 | CITY   | PINCODE | STATE       | BALDUE   |
+----------+---------------+----------+----------+--------+---------+-------------+----------+
| C00001   | Ivan bayross  |          | NULL     | Mumbai |  400054 | Maharashtra | 15000.00 |
| C00003   | Chhaya bankar |          | NULL     | Mumbai |  400057 | Maharashtra |  5000.00 |
| C00005   | Hansel colaco |          | NULL     | Mumbai |  400060 | Maharashtra |  2000.00 |
+----------+---------------+----------+----------+--------+---------+-------------+----------+
3 rows in set (0.00 sec)
```

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

Output:

```
mysql> SELECT SALESMANNAME FROM SALESMAN_MASTER WHERE SALAMT = 3000;
+--------------+
| SALESMANNAME |
+--------------+
| Aman         |
| Omkar        |
| Raj          |
+--------------+
3 rows in set (0.00 sec)
```

2. Exercise on updating records in a table

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

Output:

```
mysql> UPDATE CLIENT_MASTER
    -> SET CITY = 'Bangalore'
    -> WHERE CLIENTNO = 'C00005';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM CLIENT_MASTER;
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
| CLIENTNO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE   |
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
| C00001   | Ivan bayross   |          | NULL     | Mumbai    |  400054 | Maharashtra | 15000.00 |
| C00002   | Mamta muzumdar |          | NULL     | Madras    |  780001 | Tamil nadu  |     0.00 |
| C00003   | Chhaya bankar  |          | NULL     | Mumbai    |  400057 | Maharashtra |  5000.00 |
| C00004   | Ashwini joshi  |          | NULL     | Bangalore |  560001 | Karnataka   |     0.00 |
| C00005   | Hansel colaco  |          | NULL     | Bangalore |  400060 | Maharashtra |  2000.00 |
| C00006   | Deepak sharma  |          | NULL     | Mangalore |  560050 | Karnataka   |     0.00 |
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
6 rows in set (0.00 sec)
```

   b. Change the BalDue of ClientNo ‘C00001’ to Rs.1000.

Output:

```
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 * FROM CLIENT_MASTER;
+----------+----------------+----------+----------+-----------+---------+-------------+---------+
| CLIENTNO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE  |
+----------+----------------+----------+----------+-----------+---------+-------------+---------+
| C00001   | Ivan bayross   |          | NULL     | Mumbai    |  400054 | Maharashtra | 1000.00 |
| C00002   | Mamta muzumdar |          | NULL     | Madras    |  780001 | Tamil nadu  |    0.00 |
| C00003   | Chhaya bankar  |          | NULL     | Mumbai    |  400057 | Maharashtra | 5000.00 |
| C00004   | Ashwini joshi  |          | NULL     | Bangalore |  560001 | Karnataka   |    0.00 |
| C00005   | Hansel colaco  |          | NULL     | Bangalore |  400060 | Maharashtra | 2000.00 |
| C00006   | Deepak sharma  |          | NULL     | Mangalore |  560050 | Karnataka   |    0.00 |
+----------+----------------+----------+----------+-----------+---------+-------------+---------+
6 rows in set (0.00 sec)
```

c. Change the cost price of ‘Trousers’ to rs.950.00.

Output:

```
mysql> UPDATE PRODUCT_MASTER
    -> SET CostPrice = 950.00
    -> WHERE Description = 'Trousers';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM PRODUCT_MASTER
    -> ;
+-----------+--------------+---------------+-------------+-----------+-------------+-----------+-----------+
| ProductNo | Description  | ProfitPercent | UnitMeasure | QtyOnHand | RecorderLvl | SellPrice | CostPrice |
+-----------+--------------+---------------+-------------+-----------+-------------+-----------+-----------+
| P00001    | T-Shirt      |          5.00 | Piece       |       200 |          50 |    350.00 |    250.00 |
| P0345     | Shirts       |          6.00 | Piece       |       150 |          50 |    500.00 |    350.00 |
| P06734    | Cotton jeans |          5.00 | Piece       |       100 |          20 |    600.00 |    450.00 |
| P07865    | Jeans        |          5.00 | Piece       |       100 |          20 |    750.00 |    500.00 |
| P07868    | Trousers     |          2.00 | Piece       |       150 |          50 |    850.00 |    950.00 |
| P07885    | Pull Overs   |          2.50 | Piece       |        80 |          30 |    700.00 |    450.00 |
| P07965    | Denim jeans  |          4.00 | Piece       |       100 |          40 |    350.00 |    250.00 |
| P07975    | Lycra tops   |          5.00 | Piece       |        70 |          30 |    300.00 |    175.00 |
| P08865    | Skirts       |          5.00 | Piece       |        75 |          30 |    450.00 |    300.00 |
+-----------+--------------+---------------+-------------+-----------+-------------+-----------+-----------+
9 rows in set (0.00 sec)
```

d. Change the city of the salesman to Pune.

Output:

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

mysql> SELECT * FROM _SALESMAN_MASTER;
ERROR 1146 (42S02): Table 'database1._SALESMAN_MASTER' doesn't exist
mysql> SELECT * FROM SALESMAN_MASTER;
+------------+-------------+----------+----------+------+---------+-------------+--------+----------+----------+---------+
| SALESMANNO | SALESMANNAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE       | SALAMT | TGTTOGET | YTDSALES | REMARKS |
+------------+-------------+----------+----------+------+---------+-------------+--------+----------+----------+---------+
| S00001     | Aman         | A/14     | Worli    | Pune |  400002 | Maharashtra |   3000 |      100 |       50 | Good    |
| S00002     | Omkar        | 65       | Nariman  | Pune |  400001 | Maharashtra |   3000 |      200 |      100 | Good    |
| S00003     | Raj          | P-7      | Bandra   | Pune |  400032 | Maharashtra |   3000 |      200 |      100 | Good    |
| S00004     | Ashish       | A/5      | Juhu     | Pune |  400044 | Maharashtra |   3500 |      200 |      150 | Good    |
+------------+-------------+----------+----------+------+---------+-------------+--------+----------+----------+---------+
4 rows in set (0.00 sec)
```

3. Exercise on deleting records in a table

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

Output:

```
mysql> DELETE FROM SALESMAN_MASTER
    -> WHERE SALAMT = 3500;
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM SALESMAN_MASTER;
+-----------+-------------+----------+----------+------+---------+-------------+--------+----------+----------+---------+
| SALESMANNO | SALESMANNAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE       | SALAMT | TGTTOGET | YTDSALES | REMARKS |
+-----------+-------------+----------+----------+------+---------+-------------+--------+----------+----------+---------+
| S00001     | Aman         | A/14     | Worli    | Pune |  400002 | Maharashtra |   3000 |      100 |       50 | Good    |
| S00002     | Omkar        | 65       | Nariman  | Pune |  400001 | Maharashtra |   3000 |      200 |      100 | Good    |
| S00003     | Raj          | P-7      | Bandra   | Pune |  400032 | Maharashtra |   3000 |      200 |      100 | Good    |
+-----------+-------------+----------+----------+------+---------+-------------+--------+----------+----------+---------+
3 rows in set (0.00 sec)
```

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

Output:

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

mysql> SELECT * FROM PRODUCT_MASTER;
+-----------+-------------+--------------+-------------+-----------+-------------+-----------+-----------+
| ProductNo | Description | ProfitPercent | UnitMeasure | QtyOnHand | RecorderLvl | SellPrice | CostPrice |
+-----------+-------------+--------------+-------------+-----------+-------------+-----------+-----------+
| P00001    | T-Shirt     |         5.00 | Piece       |       200 |          50 |    350.00 |    250.00 |
| P0345     | Shirts      |         6.00 | Piece       |       150 |          50 |    500.00 |    350.00 |
| P07868    | Trousers    |         2.00 | Piece       |       150 |          50 |    850.00 |    950.00 |
| P07885    | Pull Overs  |         2.50 | Piece       |        80 |          30 |    700.00 |    450.00 |
| P07975    | Lycra tops  |         5.00 | Piece       |        70 |          30 |    300.00 |    175.00 |
| P08865    | Skirts      |         5.00 | Piece       |        75 |          30 |    450.00 |    300.00 |
+-----------+-------------+--------------+-------------+-----------+-------------+-----------+-----------+
6 rows in set (0.00 sec)
```

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

Output:

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

mysql> SELECT * FROM CLIENT_MASTER;
+----------+--------------+----------+----------+-----------+---------+-------------+----------+
| CLIENTNO | NAME         | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE   |
+----------+--------------+----------+----------+-----------+---------+-------------+----------+
| C00001   | Ivan bayross |          | NULL     | Mumbai    |  400054 | Maharashtra | 1000.00 |
| C00003   | Chhaya bankar |          | NULL     | Mumbai    |  400057 | Maharashtra | 5000.00 |
| C00004   | Ashwini joshi |          | NULL     | Bangalore |  560001 | Karnataka   |    0.00 |
| C00005   | Hansel colaco |          | NULL     | Bangalore |  400060 | Maharashtra | 2000.00 |
| C00006   | Deepak sharma |          | NULL     | Mangalore |  560050 | Karnataka   |    0.00 |
+----------+--------------+----------+----------+-----------+---------+-------------+----------+
5 rows in set (0.00 sec)
```

4. Exercise on altering the table structure

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

Output:

```
mysql> ALTER TABLE CLIENT_MASTER
    -> ADD Telephone INTEGER;
Query OK, 0 rows affected (0.02 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM CLIENT_MASTER;
+----------+--------------+----------+----------+-----------+---------+-------------+---------+-----------+
| CLIENTNO | NAME         | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE  | Telephone |
+----------+--------------+----------+----------+-----------+---------+-------------+---------+-----------+
| C00001   | Ivan bayross |          | NULL     | Mumbai    |  400054 | Maharashtra | 1000.00 |      NULL |
| C00003   | Chhaya bankar|          | NULL     | Mumbai    |  400057 | Maharashtra | 5000.00 |      NULL |
| C00004   | Ashwini joshi|          | NULL     | Bangalore |  560001 | Karnataka   |    0.00 |      NULL |
| C00005   | Hansel colaco|          | NULL     | Bangalore |  400060 | Maharashtra | 2000.00 |      NULL |
| C00006   | Deepak sharma|          | NULL     | Mangalore |  560050 | Karnataka   |    0.00 |      NULL |
+----------+--------------+----------+----------+-----------+---------+-------------+---------+-----------+
5 rows in set (0.00 sec)
```

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

Output:

```
mysql> ALTER TABLE PRODUCT_MASTER
    -> MODIFY COLUMN SellPrice DECIMAL(10,2);
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM PRODUCT_MASTER;
+-----------+-------------+--------------+-------------+-----------+-------------+-----------+-----------+
| ProductNo | Description | ProfitPercent | UnitMeasure | QtyOnHand | RecorderLvl | SellPrice | CostPrice |
+-----------+-------------+--------------+-------------+-----------+-------------+-----------+-----------+
| P00001    | T-Shirt     |         5.00 | Piece       |       200 |          50 |    350.00 |    250.00 |
| P0345     | Shirts      |         6.00 | Piece       |       150 |          50 |    500.00 |    350.00 |
| P07868    | Trousers    |         2.00 | Piece       |       150 |          50 |    850.00 |    950.00 |
| P07885    | Pull Overs  |         2.50 | Piece       |        80 |          30 |    700.00 |    450.00 |
| P07975    | Lycra tops  |         5.00 | Piece       |        70 |          30 |    300.00 |    175.00 |
| P08865    | Skirts      |         5.00 | Piece       |        75 |          30 |    450.00 |    300.00 |
+-----------+-------------+--------------+-------------+-----------+-------------+-----------+-----------+
6 rows in set (0.00 sec)
```

5. Exercise on deleting the table structure along with the data

a. Destroy the table Client_Master along with its data.

Output:

```
mysql> DROP TABLE CLIENT_MASTER;
Query OK, 0 rows affected (0.02 sec)

mysql> SHOW TABLES;
+---------------------+
| Tables_in_database1 |
+---------------------+
| PRODUCT_MASTER      |
| SALESMAN_MASTER     |
+---------------------+
2 rows in set (0.01 sec)
```

6. Exercise on renaming the table

a. Change the name of the Salesman_Master to sman_mast.

Output:

```
mysql> RENAME TABLE PRODUCT_MASTER TO prod_mast;
Query OK, 0 rows affected (0.02 sec)

mysql> SHOW TABLES;
+---------------------+
| Tables_in_database1 |
+---------------------+
| SALESMAN_MASTER     |
| prod_mast           |
+---------------------+
2 rows in set (0.00 sec)
```

EXPERIMENT-3

TITLE: DDL (Data Definition Language) commands with Data 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

Create the tables described below:
Table name: CLIENT_MASTER_1
Description: used to store client information.

Column name	data type	Size	Constraints
CLIENTNO	Varchar	6	Primary key / first letter must start with 'C'
NAME	Varchar	20	Not Null
ADDRESS 1	Varchar	30	
ADDRESS 2	Varchar	30	
CITY	Varchar	15	
PINCODE	Integer	8	
STATE	Varchar	15	
BALDUE	Decimal	10,2	

Output:

```
mysql> CREATE TABLE CLIENT_MASTER_1 (
    ->     CLIENTNO VARCHAR(6) PRIMARY KEY CHECK (CLIENTNO LIKE 'C%'),
    ->     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 (0.02 sec)

mysql> SELECT * FROM CLIENT_MASTER_1;
Empty set (0.00 sec)
```

Table Name: PRODUCT_MASTER_1
Description: used to store product information

Column name	data type	Size	Attributes
PRODUCTNO	Varchar	6	Primary Key/ first letter must start with 'P'
DESCRIPTION	Varchar	15	Not Null

PROFITPERCENT	Decimal	4,2	Not Null
UNIT MEASURE	Varchar	10	Not Null
QTYONHAND	Integer	8	Not Null
REORDERL VL	Integer	8	Not Null
SELLPRICE	Decimal	8,2	Not Null
COSTPRICE	Decimal	8,2	Not Null

Output:

```
mysql> CREATE TABLE PRODUCT_MASTER_1 (
    ->     PRODUCTNO VARCHAR(6) PRIMARY KEY CHECK (PRODUCTNO LIKE 'P%'),
    ->     DESCRIPTION VARCHAR(15) NOT NULL,
    ->     PROFITPERCENT DECIMAL(4,2) NOT NULL,
    ->     UNIT_MEASURE 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 (0.02 sec)

mysql> SELECT * FROM PRODUCT_MASTER_1
    -> ;
Empty set (0.00 sec)
```

Name: SALESMAN_MASTER _1

Description: used to shoe salesman information working for the company.

Column name	**data type**	**Size**	**Attributes**
SALESMANNO	Varchar	6	Primary Key/ first letter must start with ‘S’
SALESMANNAME	Varchar	20	Not Null
ADDRESS 1	Varchar	30	Not Null
ADDRESS 2	Varchar	30	
CITY	Varchar	20	
PINCODE	Integer	8	
STATE	Varchar	20	
SALAMT	Real	8,2	Not Null , Cannot be 0
TGTTOGET	Decimal	6,2	Not Null , Cannot be 0
YTDSALES	Double	6,2	Not Null
REMARKS	Varchar	60	

Output:

```
mysql> CREATE TABLE SALESMAN_MASTER_1 (
    ->     SALESMANNO VARCHAR(6) PRIMARY KEY CHECK (SALESMANNO LIKE 'S%'),
    ->     SALESMANNAME VARCHAR(20) NOT NULL,
    ->     ADDRESS1 VARCHAR(30) NOT NULL,
    ->     ADDRESS2 VARCHAR(30),
    ->     CITY VARCHAR(20),
    ->     PINCODE INT(8),
    ->     STATE VARCHAR(20),
    ->     SALAMT DECIMAL(8,2) NOT NULL CHECK (SALAMT <> 0),
    ->     TGTTOGET DECIMAL(6,2) NOT NULL CHECK (TGTTOGET <> 0),
    ->     YTDSALES DOUBLE(6,2) NOT NULL,
    ->     REMARKS VARCHAR(60)
    -> );
Query OK, 0 rows affected, 2 warnings (0.02 sec)

mysql> SELECT * FROM SALESMAN_MASTER_1;
Empty set (0.01 sec)
```

1. **Reinsert the data in these two tables based upon Lab 2.**

Output:

```
mysql> INSERT INTO CLIENT_MASTER_1 (CLIENTNO, NAME, ADDRESS1, ADDRESS2, 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 (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM CLIENT_MASTER_1;
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
| CLIENTNO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BALDUE   |
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
| C00001   | Ivan bayross   |          |          | Mumbai    |  400054 | Maharashtra | 15000.00 |
| C00002   | Mamta muzumdar |          |          | Madras    |  780001 | Tamil Nadu  |     0.00 |
| C00003   | Chhaya bankar  |          |          | Mumbai    |  400057 | Maharashtra |  5000.00 |
| C00004   | Ashwini joshi  |          |          | Bangalore |  560001 | Karnataka   |     0.00 |
| C00005   | Hansel colaco  |          |          | Mumbai    |  400060 | Maharashtra |  2000.00 |
| C00006   | Deepak sharma  |          |          | Mangalore |  560050 | Karnataka   |     0.00 |
+----------+----------------+----------+----------+-----------+---------+-------------+----------+
6 rows in set (0.00 sec)
```

2. **Display the contents of each table.**

Output:

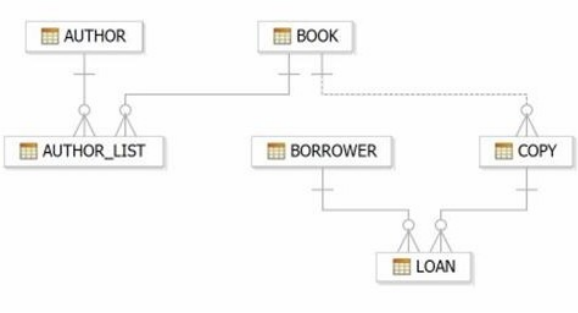
```
mysql> INSERT INTO SALESMAN_MASTER_1 (SALESMANNO, SALESMANNAME, ADDRESS1, ADDRESS2, CITY, PINCODE, STATE, SALAMT, TGTTOGET, YTDSALES, REMARKS) VALUES
    -> ('S00001', 'Aman', 'A/14', '', 'Worli', 400002, 'Maharashtra', 3000, 100, 50, 'Good'),
    -> ('S00002', 'Omkar', '65', '', 'Nariman', 400001, 'Maharashtra', 3000, 200, 100, 'Good'),
    -> ('S00003', 'Raj', 'P-7', '', 'Bandra', 400032, 'Maharashtra', 3000, 200, 100, 'Good'),
    -> ('S00004', 'Ashish', 'A/5', '', 'Juhu', 400044, 'Maharashtra', 3500, 200, 150, 'Good');
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM SALESMAN_MASTER_1;
+------------+-------------+----------+----------+--------+--------+-------------+---------+----------+----------+---------+
| SALESMANNO | SALESMANNAME | ADDRESS1 | ADDRESS2 | CITY   | PINCODE | STATE       | SALAMT  | TGTTOGET | YTDSALES | REMARKS |
+------------+-------------+----------+----------+--------+--------+-------------+---------+----------+----------+---------+
| S00001     | Aman        | A/14     |          | Worli  | 400002 | Maharashtra | 3000.00 |   100.00 |    50.00 | Good    |
| S00002     | Omkar       | 65       |          | Nariman| 400001 | Maharashtra | 3000.00 |   200.00 |   100.00 | Good    |
| S00003     | Raj         | P-7      |          | Bandra | 400032 | Maharashtra | 3000.00 |   200.00 |   100.00 | Good    |
| S00004     | Ashish      | A/5      |          | Juhu   | 400044 | Maharashtra | 3500.00 |   200.00 |   150.00 | Good    |
+------------+-------------+----------+----------+--------+--------+-------------+---------+----------+----------+---------+
4 rows in set (0.00 sec)
```

EXPERIMENT-4

TITLE: DDL (Data Definition Language) commands with Data Constraints

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

Review this diagram



1. Create table AUTHOR = {Author_ID , Lastname, Firstname, Email, City, Country}
Where:
Author_ID – text data type, 5 characters, primary key
Lastname – text data type, 15 characters, not null
Firstname – text data type, 15 characters, not null
Email – text data type, 40 characters,
City – text data type, 15 characters,
Country – text data type, 15 characters,

Output:

```
mysql> CREATE TABLE AUTHOR (
    ->     Author_ID VARCHAR(5) PRIMARY KEY,
    ->     Lastname VARCHAR(15) NOT NULL,
    ->     Firstname VARCHAR(15) NOT NULL,
    ->     Email VARCHAR(40),
    ->     City VARCHAR(15),
    ->     Country VARCHAR(15)
    -> );
Query OK, 0 rows affected (0.02 sec)
```

2. Create Table BOOK={ Book_ID, Book_Title, Copies)
Where :
Book_ID – text data type, 5 characters Primary Key Start
With Character B
Book_Title - Text data Type Not Null
Copies- No.of copies Data Type int always greater the 2

Output:

```
mysql> CREATE TABLE BOOK (
    ->     Book_ID VARCHAR(5) PRIMARY KEY CHECK (Book_ID LIKE 'B%'),
    ->     Book_Title TEXT NOT NULL,
    ->     Copies INT CHECK (Copies > 2)
    -> );
Query OK, 0 rows affected (0.02 sec)
```

3. Create table AUTHOR_LIST = {Author_ID , Book_ID , Role}

Where:

Author_ID – text data type, 5 characters, referenced by Author_ID from AUTHOR table

Book_ID – text data type, 5 characters

Role – text data type, 15 characters

and primary key is: Author_ID, Book_ID

Output:

```
mysql> CREATE TABLE AUTHOR_LIST (
    ->     Author_ID VARCHAR(5),
    ->     Book_ID VARCHAR(5),
    ->     Role VARCHAR(15),
    ->     Publisher VARCHAR(30),
    ->     PRIMARY KEY (Author_ID, Book_ID),
    ->     FOREIGN KEY (Author_ID) REFERENCES AUTHOR(Author_ID),
    ->     FOREIGN KEY (Book_ID) REFERENCES BOOK(Book_ID)
    -> );
Query OK, 0 rows affected (0.02 sec)
```

4. Add four records in each tables AUTHOR, BOOK, BOOK_LIST.

Output:

```
mysql> INSERT INTO AUTHOR (Author_ID, Lastname, Firstname, Email, City, Country) VALUES
    -> ('A0001', 'Doe', 'John', 'john@example.com', 'New York', 'USA'),
    -> ('A0002', 'Smith', 'Jane', 'jane@example.com', 'Los Angeles', 'USA'),
    -> ('A0003', 'Johnson', 'Michael', 'michael@example.com', 'Chicago', 'USA'),
    -> ('A0004', 'Brown', 'Emily', 'emily@example.com', 'Houston', 'USA');
Query OK, 4 rows affected (0.00 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM AUTHOR;
+-----------+----------+-----------+---------------------+-------------+---------+
| Author_ID | Lastname | Firstname | Email               | City        | Country |
+-----------+----------+-----------+---------------------+-------------+---------+
| A0001     | Doe      | John      | john@example.com    | New York    | USA     |
| A0002     | Smith    | Jane      | jane@example.com    | Los Angeles | USA     |
| A0003     | Johnson  | Michael   | michael@example.com | Chicago     | USA     |
| A0004     | Brown    | Emily     | emily@example.com   | Houston     | USA     |
+-----------+----------+-----------+---------------------+-------------+---------+
4 rows in set (0.00 sec)
```

```
mysql> INSERT INTO BOOK (Book_ID, Book_Title, Copies) VALUES
    -> ('B0001', 'Introduction to SQL', 10),
    -> ('B0002', 'Python Programming', 15),
    -> ('B0003', 'Data Structures and Algorithms', 20),
    -> ('B0004', 'Web Development with JavaScript', 25);
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM BOOK;
+---------+---------------------------------+--------+
| Book_ID | Book_Title                      | Copies |
+---------+---------------------------------+--------+
| B0001   | Introduction to SQL             |     10 |
| B0002   | Python Programming              |     15 |
| B0003   | Data Structures and Algorithms  |     20 |
| B0004   | Web Development with JavaScript |     25 |
+---------+---------------------------------+--------+
4 rows in set (0.01 sec)
```

```
mysql> INSERT INTO AUTHOR_LIST (Author_ID, Book_ID, Role, Publisher) VALUES
    -> ('A0001', 'B0001', 'Author', 'ABC Publications'),
    -> ('A0002', 'B0002', 'Author', 'XYZ Publishing'),
    -> ('A0003', 'B0003', 'Contributor', 'DEF Books'),
    -> ('A0004', 'B0004', 'Author', 'GHI Publishing');
Query OK, 4 rows affected (0.01 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM AUTHOR_LIST;
+-----------+---------+-------------+------------------+
| Author_ID | Book_ID | Role        | Publisher        |
+-----------+---------+-------------+------------------+
| A0001     | B0001   | Author      | ABC Publications |
| A0002     | B0002   | Author      | XYZ Publishing   |
| A0003     | B0003   | Contributor | DEF Books        |
| A0004     | B0004   | Author      | GHI Publishing   |
+-----------+---------+-------------+------------------+
4 rows in set (0.00 sec)
```

5. Alter structure of table AUTHOR_LIST add the field Publisher data type of 30 Character.

Output:

```
mysql> ALTER TABLE AUTHOR_LIST
    -> ADD Publisher VARCHAR(30);
ERROR 1060 (42S21): Duplicate column name 'Publisher'
mysql> SELECT * FROM AUTHOR_LIST;
+-----------+---------+-------------+------------------+
| Author_ID | Book_ID | Role        | Publisher        |
+-----------+---------+-------------+------------------+
| A0001     | B0001   | Author      | ABC Publications |
| A0002     | B0002   | Author      | XYZ Publishing   |
| A0003     | B0003   | Contributor | DEF Books        |
| A0004     | B0004   | Author      | GHI Publishing   |
+-----------+---------+-------------+------------------+
4 rows in set (0.00 sec)
```