

## ***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.

```
mysql> CREATE DATABASE client;
Query OK, 1 row affected (0.01 sec)

mysql> USE client;CREATE TABLE CLIENT_MASTER (
Database changed
-> CLIENTNO VARCHAR(6) PRIMARY KEY CHECK (CLIENTNO LIKE 'C%'),
-> NAME VARCHAR(20) NOT NULL,
-> ADDRESS1 VARCHAR(30),
-> ADDRESS2 VARCHAR(30),
-> CITY VARCHAR(15),
-> PINCODE INTEGER CHECK (PINCODE >= 0),
-> STATE VARCHAR(15),
-> BALDUE DECIMAL(10, 2) DEFAULT 0.00
-> );CREATE TABLE PRODUCT_MASTER (
Query OK, 0 rows affected (0.03 sec)
```

```
-> PRODUCTNO VARCHAR(6),
-> CHECK (PRODUCTNO LIKE 'P%'),
-> DESCRIPTION VARCHAR(15) NOT NULL,
-> PROFITPERCENT DECIMAL(4,2) NOT NULL,
-> UNIT_MEASURE VARCHAR(10) NOT NULL,
-> QTYONHAND INTEGER(8) NOT NULL,
-> REORDERLVL INTEGER(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> CREATE TABLE SALESMAN_MASTER (
-> 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 INTEGER(8),
-> STATE VARCHAR(20),
-> SALAMT REAL(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, 3 warnings (0.02 sec)
```

```
mysql> -- Inserting elements into tables
mysql>
mysql> INSERT INTO CLIENT_MASTER (CLIENTNO, NAME, CITY, PINCODE, STATE, BALDUE) VALUES
-> ('C00001', 'Ivan bayross', 'Mumbai', 400054, 'Maharashtra', 15.000),
-> ('C00002', 'Mamta muzumdar', 'Madras', 780001, 'Tamil Nadu', 0.0),
-> ('C00003', 'Chhaya bankar', 'Mumbai', 400057, 'Maharashtra', 50.00),
-> ('C00004', 'Ashwini joshi', 'Bangalore', 560001, 'Karnataka', 0.0),
-> ('C00005', 'Hansel colaco', 'Mumbai', 400060, 'Maharashtra', 200.0),
-> ('C00006', 'Deepak sharma', 'Mangalore', 560050, 'Karnataka', 0.0);
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	NULL	Mumbai	400054	Maharashtra	15.00
C00002	Mamta muzumdar	NULL	NULL	Madras	780001	Tamil Nadu	0.00
C00003	Chhaya bankar	NULL	NULL	Mumbai	400057	Maharashtra	50.00
C00004	Ashwini joshi	NULL	NULL	Bangalore	560001	Karnataka	0.00
C00005	Hansel colaco	NULL	NULL	Mumbai	400060	Maharashtra	200.00
C00006	Deepak sharma	NULL	NULL	Mangalore	560050	Karnataka	0.00

```
6 rows in set (0.00 sec)

mysql> INSERT INTO SALESMAN_MASTER (SALESMANNO, SALESMANNAME, ADDRESS1, ADDRESS2, CITY, PINCODE, STATE, SALAMT, TGTTOGET, YTDSALES) VALUES
-> ('S00001', 'Aman', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra', 8,5,5),
-> ('S00002', 'Omkar', '65', 'Nariman', 'Mumbai', 400001, 'Maharashtra', 7,5,5),
-> ('S00003', 'Raj', 'P-7', 'Bandra', 'Mumbai', 400032, 'Maharashtra', 9,5,5),
-> ('S00004', 'Ashish', 'A/5', 'Juhu', 'Mumbai', 400044, 'Maharashtra', 6,5,5);
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM SALESMAN_MASTER;INSERT INTO PRODUCT_MASTER (PRODUCTNO, DESCRIPTION, PROFITPERCENT, UNIT_MEASURE, QTYONHAND,
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| SALESMANNO | SALESMANNAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE | SALAMT | TGTOGET | YTDSALES | REMARKS |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| S00001 | Aman | A/14 | Worli | Mumbai | 400002 | Maharashtra | 8.00 | 5.00 | 5.00 | NULL |
| S00002 | Omkar | 65 | Nariman | Mumbai | 400001 | Maharashtra | 7.00 | 5.00 | 5.00 | NULL |
| S00003 | Raj | P-7 | Bandra | Mumbai | 400032 | Maharashtra | 9.00 | 5.00 | 5.00 | NULL |
| S00004 | Ashish | A/5 | Juhu | Mumbai | 400044 | Maharashtra | 6.00 | 5.00 | 5.00 | NULL |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

```

-> REORDERLVL, 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 (0.01 sec)
Records: 9 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM PRODUCT_MASTER;
+-----+-----+-----+-----+-----+-----+-----+-----+
| PRODUCTNO | DESCRIPTION | PROFITPERCENT | UNIT_MEASURE | QTYONHAND | REORDERLVL | 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> -- Queries
mysql> -- Exercise on retrieving records from a table.
mysql>
mysql> -- Find names of all clients
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)
```

```
mysql> -- Retrieve entire contents of CLIENT_MASTER
mysql> SELECT * FROM CLIENT_MASTER;
```

CLIENTNO	NAME	ADDRESS1	ADDRESS2	CITY	PINCODE	STATE	BALDUE
C00001	Ivan bayross	NULL	NULL	Mumbai	400054	Maharashtra	15.00
C00002	Mamta muzumdar	NULL	NULL	Madras	780001	Tamil Nadu	0.00
C00003	Chhaya bankar	NULL	NULL	Mumbai	400057	Maharashtra	50.00
C00004	Ashwini joshi	NULL	NULL	Bangalore	560001	Karnataka	0.00
C00005	Hansel colaco	NULL	NULL	Mumbai	400060	Maharashtra	200.00
C00006	Deepak sharma	NULL	NULL	Mangalore	560050	Karnataka	0.00

```
6 rows in set (0.00 sec)
```

```
mysql> -- List all products available
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)
```

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

- Find out the names of all the clients.
- Retrieve the entire contents of the Client\_Master table.
- Retrieve the list of names, city and the state of all the clients.
- List the various products available from the Product\_Master table.
- List all the clients who are located in Mumbai.
- Find the names of salesman who have a salary equal to Rs.3000.

## 3. Exercise on updating records in a table

- Change the city of ClientNo 'C00005' to 'Bangalore'.
- Change the BalDue of ClientNo 'C00001' to Rs.1000.
- Change the cost price of 'Trousers' to rs.950.00.
- Change the city of the salesman to Pune.

## 4. Exercise on deleting records in a table

- Delete all salesman from the Salesman\_Master whose salaries are equal to Rs.3500.

```
mysql> -- Find names of salesmen with a salary equal to Rs. 3000
mysql> SELECT SALESMANNAME FROM SALESMAN_MASTER WHERE SALAMT = 3000;
Empty set (0.00 sec)
```

```
mysql> -- Update commands
mysql> -- Exercise on updating records in a table
mysql>
mysql> -- Change the city of ClientNo 'C00005' to 'Bangalore'
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> -- Change BalDue of ClientNo 'C00001' to Rs. 1000
mysql> UPDATE CLIENT_MASTER SET BALDUE = 1000 WHERE CLIENTNO = 'C00001';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> -- Change the cost price of 'Trousers' to Rs. 950.00
mysql> UPDATE PRODUCT_MASTER SET COSTPRICE = 950 WHERE PRODUCTNO = 'P07868';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1 Changed: 1 Warnings: 0
```

```
mysql> -- Change the city of salesmen to 'Pune'
mysql> UPDATE SALESMAN_MASTER SET CITY = 'Pune';-- Delete all salesmen from Salesman_Master whose salaries are equal to Rs.3500.
Query OK, 4 rows affected (0.01 sec)
Rows matched: 4 Changed: 4 Warnings: 0
```

```
mysql> DELETE FROM Salesman_Master
-> WHERE SALAMT = 3500;
```

- b. Delete all products from Product\_Master where the quantity on hand is equal to 100.
- c. Delete from Client\_Master where the column state holds the value 'Tamil Nadu'.

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

- a. Add a column called 'Telephone' of data type integer to the Client\_Master table.
- b. Change the size of SellPrice column in Product\_Master to 10, 2.

**6. Exercise on deleting the table structure along with the data**

- a. Destroy the table Client\_Master along with its data.

```
mysql>
mysql> -- 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 (0.00 sec)

mysql>
mysql> -- 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 (0.00 sec)

mysql>
mysql> -- 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 (0.02 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql>
mysql> -- Change the size of SellPrice column in Product_Master to 10, 2.
mysql> ALTER TABLE Product_Master
    -> MODIFY COLUMN SellPrice DECIMAL(10, 2);
Query OK, 6 rows affected (0.04 sec)
Records: 6 Duplicates: 0 Warnings: 0

mysql>
mysql> -- Destroy the table Client_Master along with its data.
mysql> DROP TABLE Client_Master;
Query OK, 0 rows affected (0.02 sec)
```

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