EXPERIMENT - 2

DATABASE MANAGEMENT SYSTEMS LAB

Aim

Creating Database tables and performing the operation of table creations ,insert data and fetch data.

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EXPERIMENT – 2

Aim:

Creating Database tables and performing the operation of table creations, insert data and fetch data.

Tools Used:

MariaDB

Procedure:

Creation of Table:

1. **Table Name:** CLIENT_MASTER
2. **Description:** Used to store Client Information

Commands used for Creating Table:

```
→ CREATE TABLE CLIENT_MASTER (
→ CLIENT_NO CHAR(6),
→ NAME VARCHAR(20),
→ ADDRESS1 VARCHAR(30),
→ ADDRESS2 VARCHAR(30),
→ CITY VARCHAR(15),
→ PINCODE INT(8),
→ STATE VARCHAR(15),
→ BAL_DUE FLOAT(10,2));
```

```
MariaDB [(none)]> use info
Database changed
MariaDB [info]> CREATE TABLE CLIENT_MASTER (
    -> CLIENT_NO CHAR(6),
    -> NAME VARCHAR(20),
    -> ADDRESS1 VARCHAR(30),
    -> ADDRESS2 VARCHAR(30),
    -> CITY VARCHAR(15),
    -> PINCODE INT(8),
    -> STATE VARCHAR(15),
    -> BAL_DUE FLOAT(10,2));
Query OK, 0 rows affected (0.021 sec)
```

Describing Schema of the Table:

Commands used:

→ DESCRIBE `CLIENT_MASTER` or `DESC CLIENT_MASTER`;

```
MariaDB [info]> DESC CLIENT_MASTER;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| CLIENT_NO | char(6)     | YES  |     | NULL    |       |
| NAME      | varchar(20) | YES  |     | NULL    |       |
| ADDRESS1  | varchar(30) | YES  |     | NULL    |       |
| ADDRESS2  | varchar(30) | YES  |     | NULL    |       |
| CITY      | varchar(15) | YES  |     | NULL    |       |
| PINCODE   | int(8)      | YES  |     | NULL    |       |
| STATE     | varchar(15) | YES  |     | NULL    |       |
| BAL_DUE   | float(10,2) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
8 rows in set (0.034 sec)
```

Creation of Table:

1. **Table Name:** PRODUCT_MASTER
2. **Description:** Used to store Product Information of the Client

Commands used for Creating Table:

```
→ CREATE TABLE PRODUCT_MASTER (
→  PRODUCT_NO VARCHAR(6),
→  DESCRIPTION VARCHAR(15),
→ PROFIT_PERCENT FLOAT(4,2),
→ UNIT_MEASURE VARCHAR(10),
→ QTY_ON_HEAD INT(8),
→ REORDER_LVL INT(8),
→ SELL_PRICE FLOAT(8,2),
→ COST_PRICE FLOAT(8,2));
```

```
MariaDB [info]> CREATE TABLE PRODUCT_MASTER (
    -> PRODUCT_NO VARCHAR(6),
    -> DESCRIPTION VARCHAR(15),
    -> PROFIT_PERCENT FLOAT(4,2),
    -> UNIT_MEASURE VARCHAR(10),
    -> QTY_ON_HEAD INT(8),
    -> REORDER_LVL INT(8),
    -> SELL_PRICE FLOAT(8,2),
    -> COST_PRICE FLOAT(8,2));
Query OK, 0 rows affected (0.011 sec)
```

Describing Schema of the Table:

Commands used:

➔ DESCRIBE PRODUCT_MASTER or DESC PRODUCT_MASTER;

```
MariaDB [info]> DESCRIBE PRODUCT_MASTER;
+---------------+------------+------+-----+---------+-------+
| Field         | Type       | Null | Key | Default | Extra |
+---------------+------------+------+-----+---------+-------+
| PRODUCT_NO    | varchar(6) | YES  |     | NULL    |       |
| DESCRIPTION   | varchar(15)| YES  |     | NULL    |       |
| PROFIT_PERCENT| float(4,2) | YES  |     | NULL    |       |
| UNIT_MEASURE  | varchar(10)| YES  |     | NULL    |       |
| QTY_ON_HEAD   | int(8)     | YES  |     | NULL    |       |
| REORDER_LVL   | int(8)     | YES  |     | NULL    |       |
| SELL_PRICE    | float(8,2) | YES  |     | NULL    |       |
| COST_PRICE    | float(8,2) | YES  |     | NULL    |       |
+---------------+------------+------+-----+---------+-------+
8 rows in set (0.029 sec)
```

Creation of Table:

1. **Table Name:** SALESMAN_MASTER
2. **Description:** Used to store Salesman Working Information

Commands for Creating Table:

→ CREATE TABLE SALESMAN_MASTER (

→ SALESMAN_NO VARCHAR(6),

→ SALESMAN_NAME VARCHAR(20),

→ ADDRESS1 VARCHAR(30),

→ ADDRESS2 VARCHAR(30),

→ CITY VARCHAR(20),

→ PINCODE INT(8),

→ STATE VARCHAR(20),

→ SAL_AMT FLOAT(8,2),

→ TGT_TO_GET FLOAT(6,2),

→ YTD_SALES FLOAT(6,2),

→ REMARKS VARCHAR(60));

```
MariaDB [info]> CREATE TABLE SALESMAN_MASTER (
    -> SALESMAN_NO VARCHAR(6),
    -> SALESMAN_NAME VARCHAR(20),
    -> ADDRESS1 VARCHAR(30),
    -> ADDRESS2 VARCHAR(30),
    -> CITY VARCHAR(20),
    -> PINCODE INT(8),
    -> STATE VARCHAR(20),
    -> SAL_AMT FLOAT(8,2),
    -> TGT_TO_GET FLOAT(6,2),
    -> YTD_SALES FLOAT(6,2),
    -> REMARKS VARCHAR(60));
Query OK, 0 rows affected (0.011 sec)
```

Describing Schema of the Table:

Commands used:

➔ DESCRIBE SALESMAN_MASTER or DESC SALESMAN_MASTER;

```
MariaDB [info]> DESCRIBE SALESMAN_MASTER;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| SALESMAN_NO   | varchar(6)  | YES  |     | NULL    |       |
| SALESMAN_NAME | varchar(20) | YES  |     | NULL    |       |
| ADDRESS1      | varchar(30) | YES  |     | NULL    |       |
| ADDRESS2      | varchar(30) | YES  |     | NULL    |       |
| CITY          | varchar(20) | YES  |     | NULL    |       |
| PINCODE       | int(8)      | YES  |     | NULL    |       |
| STATE         | varchar(20) | YES  |     | NULL    |       |
| SAL_AMT       | float(8,2)  | YES  |     | NULL    |       |
| TGT_TO_GET    | float(6,2)  | YES  |     | NULL    |       |
| YTD_SALES     | float(6,2)  | YES  |     | NULL    |       |
| REMARKS       | varchar(60) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
11 rows in set (0.027 sec)
```

Inserting Data in the Tables:

Table Name: CLIENT_MASTER

Commands used:

→ INSERT INTO CLIENT_MASTER VALUES ('C00001', 'Ivan','','', 'Mumbai', '400054', 'Maharashtra','15000');

→ INSERT INTO CLIENT_MASTER VALUES ('C00002', 'Mamta Muzumdar','','','Madras', '780001', 'TamilNadu', '0');

→ INSERT INTO CLIENT_MASTER VALUES ('C00003', 'Chhaya Bankar','','', 'Mumbai', '400057', 'Maharashtra', '5000');

→ INSERT INTO CLIENT_MASTER VALUES ('C00004', 'Ashwini Joshi','','', 'Banglore', '560001', 'Karnataka','0');

→ INSERT INTO CLIENT_MASTER VALUES ('C00005', 'Hansel Colaco','','','Mumbai', '400060', 'Maharashtra','2000');

→ INSERT INTO CLIENT_MASTER VALUES ('C00006', 'Deepak Sharma','','', 'Mangalore', '560050', 'Karnataka', '0');

```
MariaDB [info]> INSERT INTO CLIENT_MASTER VALUES ('C00001', 'Ivan','','', 'Mumbai', '400054', 'Maharashtra', '15000');
Query OK, 1 row affected (0.004 sec)

MariaDB [info]> INSERT INTO CLIENT_MASTER VALUES ('C00002', 'Mamta Muzumdar','','','Madras', '780001', 'Tamil Nadu', '0');
Query OK, 1 row affected (0.003 sec)

MariaDB [info]> INSERT INTO CLIENT_MASTER VALUES ('C00003', 'Chhaya Bankar','','', 'Mumbai', '400057', 'Maharashtra', '5000');

Query OK, 1 row affected (0.001 sec)

MariaDB [info]> INSERT INTO CLIENT_MASTER VALUES ('C00004', 'Ashwini Joshi','','', 'Banglore', '560001', 'Karnataka','0');
Query OK, 1 row affected (0.001 sec)

MariaDB [info]> INSERT INTO CLIENT_MASTER VALUES ('C00005', 'Hansel Colaco','','','Mumbai', '400060', 'Maharashtra','2000');
Query OK, 1 row affected (0.001 sec)

MariaDB [info]> INSERT INTO CLIENT_MASTER VALUES ('C00006', 'Deepak Sharma','','', 'Mangalore', '560050', 'Karnataka', '0');
Query OK, 1 row affected (0.003 sec)
```

Display Table:

SELECT * FROM CLIENT_MASTER;

```
MariaDB [info]> SELECT * FROM CLIENT_MASTER;
+----------+---------------+----------+----------+-----------+---------+------------+----------+
| CLIENT_NO | NAME          | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE      | BAL_DUE  |
+----------+---------------+----------+----------+-----------+---------+------------+----------+
| C00001    | Ivan          |          |          | 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 |          |          | Banglore  |  560001 | Karnataka  |     0.00 |
| C00005    | Hansel Colaco |          |          | Mumbai    |  400060 | Maharashtra |  2000.00 |
| C00006    | Deepak Sharma |          |          | Mangalore |  560050 | Karnataka  |     0.00 |
+----------+---------------+----------+----------+-----------+---------+------------+----------+
6 rows in set (0.001 sec)
```

Table Name:

PRODUCT_MASTER

→ INSERT INTO product_master VALUES('P00001','T-shirts',5,'Piece',200,50,5350,250);

→ INSERT INTO product_master VALUES('P00345','Shirts',6,'Piece',150,50,500,350);

→ INSERT INTO product_master VALUES('P06734','CottonJeans',5,'Piece',100,20,600,450);

→ INSERT INTO product_master VALUES('P07865','Jeans',5,'Piece',100,20,750,500);

→ INSERT INTO product_master VALUES('P07868','Trousers',2,'Piece',150,50,850,550);

→ INSERT INTO product_master VALUES('P07885','PullOvers',2.5,'Piece',80,30,700,450);

→ INSERT INTO product_master VALUES('P07965','DenimShirts',4,'Piece',100,40,350,250);

→ INSERT INTO product_master VALUES('P07975','LycraTops',5,'Piece',70,30,300,175);

→ INSERT INTO product_master VALUES('P08865','Skirts',5,'piece',75,30,450,300);

```
MariaDB [info]> INSERT INTO product_master VALUES('P00001','T-shirts',5,'Piece',200,50,5350,250);
Query OK, 1 row affected (0.004 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P00345','Shirts',6,'Piece',150,50,500,350);
Query OK, 1 row affected (0.002 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P06734','CottonJeans',5,'Piece',100,20,600,450);
Query OK, 1 row affected (0.002 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P07865','Jeans',5,'Piece',100,20,750,500);
Query OK, 1 row affected (0.002 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P07868','Trousers',2,'Piece',150,50,850,550);
Query OK, 1 row affected (0.001 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P07885','PullOvers',2.5,'Piece',80,30,700,450);
Query OK, 1 row affected (0.003 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P07965','DenimShirts',4,'Piece',100,40,350,250);
Query OK, 1 row affected (0.002 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P07975','LycraTops',5,'Piece',70,30,300,175);
Query OK, 1 row affected (0.001 sec)

MariaDB [info]> INSERT INTO product_master VALUES('P08865','Skirts',5,'piece',75,30,450,300);
Query OK, 1 row affected (0.002 sec)
```

Display Table:

SELECT * FROM PRDOUCT_MASTER;

```
MariaDB [info]> SELECT * FROM PRODUCT_MASTER;
+------------+-------------+---------------+-------------+------------+------------+------------+------------+
| PRODUCT_NO | DESCRIPTION | PROFIT_PERCENT | UNIT_MEASURE | QTY_ON_HEAD | REORDER_LVL | SELL_PRICE | COST_PRICE |
+------------+-------------+---------------+-------------+------------+------------+------------+------------+
| P00001     | T-shirts    |          5.00 | Piece       |        200 |          50 |    5350.00 |     250.00 |
| P00345     | Shirts      |          6.00 | Piece       |        150 |          50 |     500.00 |     350.00 |
| P06734     | CottonJeans |          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     | PullOvers   |          2.50 | Piece       |         80 |          30 |     700.00 |     450.00 |
| P07965     | DenimShirts |          4.00 | Piece       |        100 |          40 |     350.00 |     250.00 |
| P07975     | LycraTops   |          5.00 | Piece       |         70 |          30 |     300.00 |     175.00 |
| P08865     | Skirts      |          5.00 | piece       |         75 |          30 |     450.00 |     300.00 |
+------------+-------------+---------------+-------------+------------+------------+------------+------------+
9 rows in set (0.000 sec)
```

Table Name:

SALESMAN_MASTER

→ INSERT INTO SALESMAN_MASTER VALUES ('S00001','Aman','A/14','Worli',
'Mumbai','400002','Maharashtra','3000','100','50','Good');

→ INSERT INTO SALESMAN_MASTER
VALUES('S00002','Omkar','65','Nariman','Mumbai','400002','Maharashtra','3000','0','
100','Good');

→ INSERT INTO SALESMAN_MASTER VALUES ('S00003','Raj','P/7','Bandra',
'Mumbai','400002','Maharashtra','3000','200','100','Good');

→ INSERT INTO SALESMAN_MASTER VALUES ('S00004','Ashish','A/5','Juhu',
'Mumbai','400044','Maharashtra','3500','200','150','Good');

```
MariaDB [info]> INSERT INTO SALESMAN_MASTER VALUES ('S00001','Aman','A/14','Worli', 'Mumbai','400002','Maharashtra','3000','100','50','Good');
Query OK, 1 row affected (0.003 sec)

MariaDB [info]> INSERT INTO SALESMAN_MASTER VALUES('S00002','Omkar','65','Nariman','Mumbai','400002','Maharashtra','3000','0','100','Good');
Query OK, 1 row affected (0.004 sec)

MariaDB [info]> INSERT INTO SALESMAN_MASTER VALUES ('S00003','Raj','P/7','Bandra', 'Mumbai','400002','Maharashtra','3000','200','100','Good');
Query OK, 1 row affected (0.001 sec)

MariaDB [info]> INSERT INTO SALESMAN_MASTER VALUES ('S00004','Ashish','A/5','Juhu', 'Mumbai','400044','Maharashtra','3500','200','150','Good');
Query OK, 1 row affected (0.001 sec)
```

Display Table:

SELECT * FROM SALESMAN_MASTER;

```
MariaDB [info]> SELECT * FROM SALESMAN_MASTER;
+------------+--------------+----------+----------+--------+---------+-------------+---------+-----------+-----------+---------+
| SALESMAN_NO | SALESMAN_NAME | ADDRESS1 | ADDRESS2 | CITY   | PINCODE | STATE       | SAL_AMT | TGT_TO_GET | YTD_SALES | REMARKS |
+------------+--------------+----------+----------+--------+---------+-------------+---------+-----------+-----------+---------+
| S00001     | Aman         | A/14     | Worli    | Mumbai | 400002  | Maharashtra | 3000.00 |    100.00 |     50.00 | Good    |
| S00002     | Omkar        | 65       | Nariman  | Mumbai | 400002  | Maharashtra | 3000.00 |      0.00 |    100.00 | Good    |
| S00003     | Raj          | P/7      | Bandra   | Mumbai | 400002  | Maharashtra | 3000.00 |    200.00 |    100.00 | Good    |
| S00004     | Ashish       | A/5      | Juhu     | Mumbai | 400044  | Maharashtra | 3500.00 |    200.00 |    150.00 | Good    |
+------------+--------------+----------+----------+--------+---------+-------------+---------+-----------+-----------+---------+
4 rows in set (0.000 sec)
```

College:

1) CREATE DATABASE COLLEGE;
2) USE COLLEGE;

```
C:\WINDOWS\System32>mysql -u root -p
Enter password: ****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 20
Server version: 10.5.9-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use college
Database changed
```

3) CREATE TABLE Students (stud_id int,LastName varchar(255),FirstName varchar(255),Address varchar(255),City varchar(255));
4) SHOW TABLES;

```
Database changed
MariaDB [College]> CREATE TABLE Students (stud_id int,LastName varchar(255),FirstName varchar(255),Address varchar(255),City varchar(255));
Query OK, 0 rows affected (0.019 sec)

MariaDB [College]> show tables;
+------------------+
| Tables_in_college |
+------------------+
| students         |
+------------------+
1 row in set (0.003 sec)
```

5) INSERT INTO Students (stud_id,LastName,FirstName,Address,City)VALUES ('1', 'solkjaer', 'Ole gunner', '15 Norway road', 'Norway');
6) INSERT INTO Students (stud_id,LastName,FirstName,Address,City)VALUES ('2', 'fernandes', 'Bruno', 'lisbon street', 'Portugal');
7) SELECT * FROM Students;

```
MariaDB [College]> INSERT INTO Students (stud_id,LastName,FirstName,Address,City)VALUES ('1', 'solkjaer', 'Ole gunner', '15 Norway road', 'Norway');
Query OK, 1 row affected (0.012 sec)

MariaDB [College]> INSERT INTO Students (stud_id,LastName,FirstName,Address,City)VALUES ('2', 'fernandes', 'Bruno', 'lisbon street', 'Portugal');
Query OK, 1 row affected (0.004 sec)

MariaDB [College]> select * from students;
+---------+----------+-----------+---------------+----------+
| stud_id | LastName | FirstName | Address       | City     |
+---------+----------+-----------+---------------+----------+
|       1 | solkjaer | Ole gunner | 15 Norway road | Norway   |
|       2 | fernandes | Bruno     | lisbon street  | Portugal |
+---------+----------+-----------+---------------+----------+
2 rows in set (0.001 sec)

MariaDB [College]>
```

VIVA QUESTIONS:

Que1. What is a NULL value and how does it differ from a zero value?

Ans.

Zero is a number value. It is a definite with precise mathematical properties. (You can do arithmetic on it .

NULL means the absence of any value. You can't do anything with it except test for it.

Que2. What are SQL Constraints?

Ans.

SQL constraints are used to specify rules for the data in a table. Constraints are used to limit the type of data that can go into a table. This ensures the accuracy and reliability of the data in the table. If there is any violation between the constraint and the data action, the action is aborted.

The following constraints are commonly used in SQL:

• NOT NULL- Ensures that a column cannot have a NULL value
• UNIQUE- Ensures that all values in a column are different
• PRIMARY KEY- A combination of a NOT NULL and UNIQUE. Uniquely identifies each row in a table
• FOREIGN KEY- Uniquely identifies a row/record in another table
• CHECK- Ensures that all values in a column satisfies a specific condition
• DEFAULT- Sets a default value for a column when no value is specified
• INDEX- Ued to create and retrieve data from the database very quickly

Que3. What is the difference between CHAR and VARCHAR?

Ans.

CHAR is fixed length and VARCHAR is variable length. CHAR always uses the same amount of storage space per entry, while VARCHAR only uses the amount necessary to store the actual text
Varchar cuts off trailing spaces if the entered characters is shorter than the declared length. Char will pad spaces and will always be the length of the declared length. In in terms of efficiency, varchar is more adept .

Que 4. What is Difference between NUMBER, INTEGER and INT DataTypes?

Ans.

Number allows a decimal component Integer doesn't. If we try to store 3.43 in an

Integer, it will just store 3.Number allows for much larger values than Integer does.