DATA BASE MANAGEMENT SYSTEM

DBMS LAB

ETCS-256

Faculty: **Prerna Sharma**

Name: **Syeda Reeha Quasar**

Roll No.: **14114802719**

Semester: **4 (4C7)**

Maharaja Agrasen Institute of Technology, PSP Area,

Sector – 22, Rohini, New Delhi – 110085

INDEX

S.No.	Program Name	Date	Marks	Signature	Remarks
1.	To Draw an E-R Diagram to represent different entities, attributes and relations in a university.	24-03-2021			
2.	Creating Database tables and performing the operation of table creations, insert data and fetch data.	07-04-2021			
3.	Write queries for retrieving records from table using SELECT command and WHERE clause.	14-04-2021			
4.	Write SQL commands for implementing ALTER, UPDATE and DELETE.	21-04-2021			
5.	Write the queries to implement the concept of Integrity Constraints like Primary Key, Foreign Key, NOT NULL to the tables.	19-05-2021			

EXPERIMENT - 1

DATABASE MANAGEMENT SYSTEMS LAB

Aim

To Draw an E-R Diagram to represent different entities, attributes and relations in a university.

Syeda Reeha Quasar

14114802719

4C7

EXPERIMENT – 1

Aim:

To Draw an E-R Diagram to represent different entities, attributes and relations in a university.

Theory:

ER Diagram stands for Entity Relationship Diagram, also known as ERD is a diagram that displays the relationship of entity sets stored in a database. In other words, ER diagrams help to explain the logical structure of databases. ER diagrams are created based on three basic concepts: entities, attributes and relationships.

ER Diagrams contain different symbols that use rectangles to represent entities, ovals to define attributes and diamond shapes to represent relationships.

At first look, an ER diagram looks very similar to the flowchart. However, ER Diagram includes many specialized symbols, and its meanings make this model unique. The purpose of ER Diagram is to represent the entity framework infrastructure.

Why use ER Diagrams?

Here, are prime reasons for using the ER Diagram

- Helps you to define terms related to entity relationship modeling

- Provide a preview of how all your tables should connect, what fields are going to be on each table

- Helps to describe entities, attributes, relationships

- ER diagrams are translatable into relational tables which allows you to build databases quickly

- ER diagrams can be used by database designers as a blueprint for implementing data in specific software applications

- The database designer gains a better understanding of the information to be contained in the database with the help of ERP diagram

- ERD Diagram allows you to communicate with the logical structure of the database to users

E-R Diagram
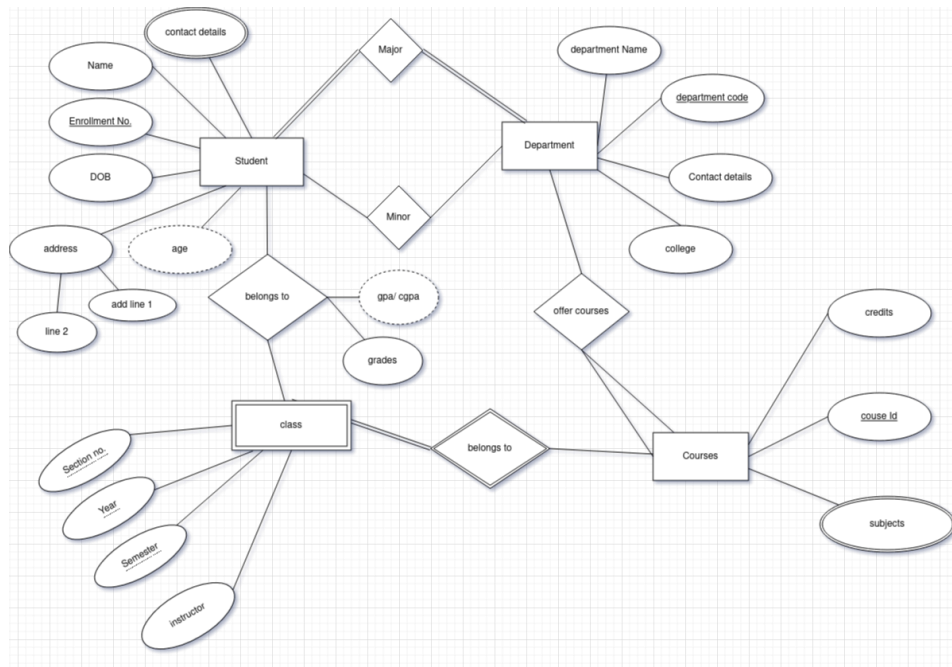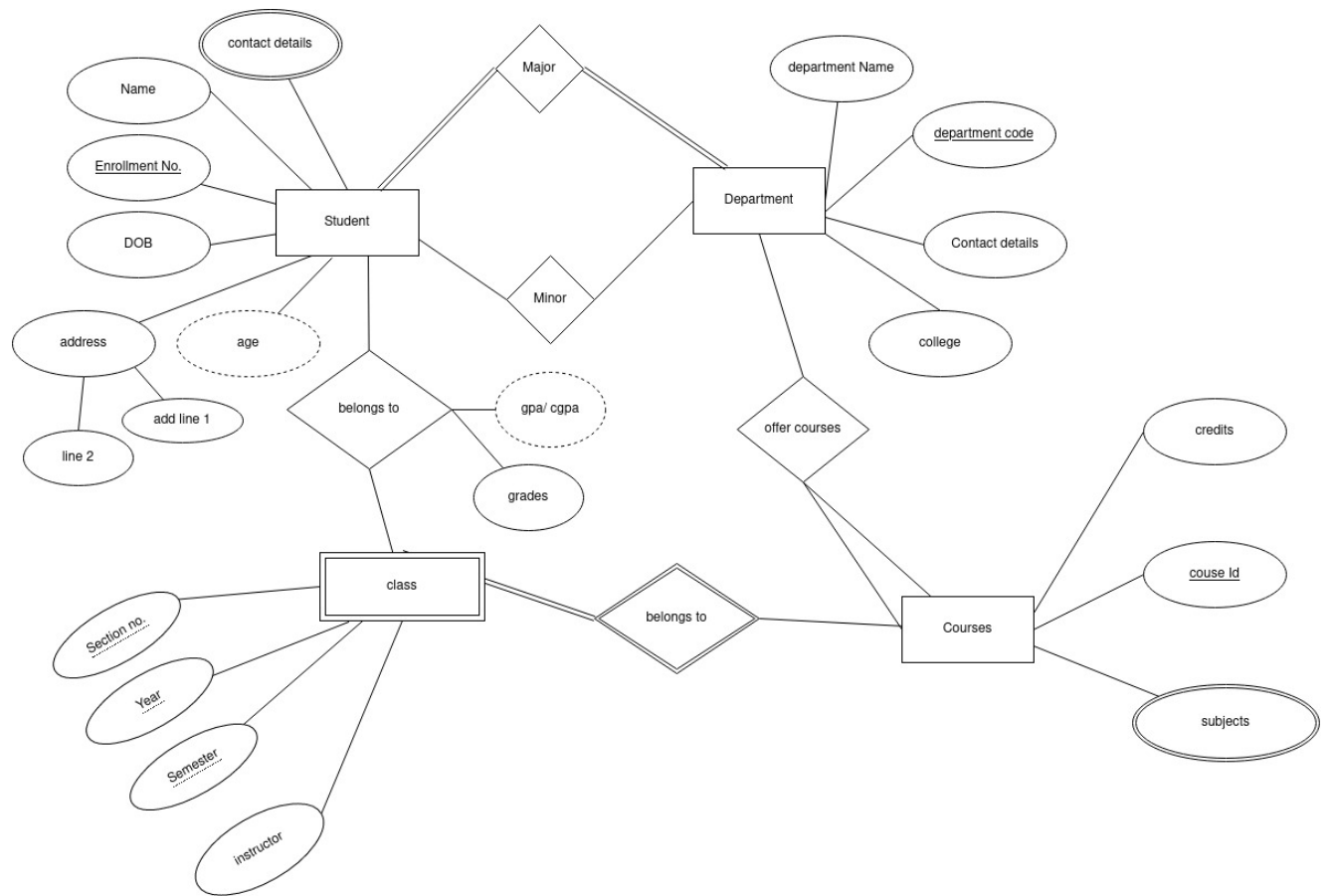
EXPERIMENT - 2

DATABASE MANAGEMENT SYSTEMS LAB

Aim

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

Syeda Reeha Quasar

14114802719

4C7

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]>
```

EXPERIMENT - 3

DATABASE MANAGEMENT SYSTEMS LAB

Aim
Write queries for retrieving records from table using SELECT command and WHERE clause.

Syeda Reeha Quasar
14114802719
4C7

EXPERIMENT – 3

Aim:
Write queries for retrieving records from table using SELECT command and WHERE clause.

Tools Used:
MariaDB

Procedure:

Find out the names of all the Clients

→ SELECT NAME FROM CLIENT_MASTER;

```
MariaDB [info]> SELECT NAME FROM CLIENT_MASTER;
+----------------+
| NAME           |
+----------------+
| Ivan           |
| Mamta Muzumdar |
| Chhaya Bankar  |
| Ashwini Joshi  |
| Hansel Colaco  |
| Deepak Sharma  |
+----------------+
6 rows in set (0.002 sec)
```

Retrieve the entire contents of the Client_Master 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 (0.000 sec)
```

Retrieve the list of names, cities and the states of all the clients

→ SELECT NAME, CITY, STATE FROM CLIENT_MASTER;

```
MariaDB [info]> SELECT NAME, CITY, STATE FROM CLIENT_MASTER;
+----------------+-----------+-------------+
| NAME           | CITY      | STATE       |
+----------------+-----------+-------------+
| Ivan           | Mumbai    | Maharashtra |
| Mamta Muzumdar | Madras    | Tamil Nadu  |
| Chhaya Bankar  | Mumbai    | Maharashtra |
| Ashwini Joshi  | Banglore  | Karnataka   |
| Hansel Colaco  | Mumbai    | Maharashtra |
| Deepak Sharma  | Mangalore | Karnataka   |
+----------------+-----------+-------------+
6 rows in set (0.000 sec)
```

Find names of clients from Client_Master whose Bal_Due is Rs.0

→ SELECT NAME FROM CLIENT_MASTER where BAL_DUE = '0';

```
MariaDB [info]> SELECT NAME FROM CLIENT_MASTER where BAL_DUE = '0';
+----------------+
| NAME           |
+----------------+
| Mamta Muzumdar |
| Ashwini Joshi  |
| Deepak Sharma  |
+----------------+
3 rows in set (0.007 sec)
```

List all the clients who are located in Mumbai.

→ SELECT NAME FROM CLIENT_MASTER where CITY = 'Mumbai';

```
MariaDB [info]> SELECT NAME FROM CLIENT_MASTER where CITY = 'Mumbai';
+---------------+
| NAME          |
+---------------+
| Ivan          |
| Chhaya Bankar |
| Hansel Colaco |
+---------------+
3 rows in set (0.003 sec)
```

List the various products available from the Product_Mastertable

→ SELECT DESCRIPTION FROM PRODUCT_MASTER;

```
MariaDB [info]> SELECT DESCRIPTION FROM PRODUCT_MASTER;
+-------------+
| DESCRIPTION |
+-------------+
| T-shirts    |
| Shirts      |
| CottonJeans |
| Jeans       |
| Trousers    |
| PullOvers   |
| DenimShirts |
| LycraTops   |
| Skirts      |
+-------------+
9 rows in set (0.000 sec)
```

Find the names of salesman who have Sal_Amt = Rs.3000

→ SELECT SALESMAN_NAME FROM SALESMAN_MASTER where SAL_AMT = '3000';

```
MariaDB [info]> SELECT SALESMAN_NAME FROM SALESMAN_MASTER where SAL_AMT = '3000';
+---------------+
| SALESMAN_NAME |
+---------------+
| Aman          |
| Omkar         |
| Raj           |
+---------------+
3 rows in set (0.000 sec)
```

List all Salesman_No who live in city Mumbai

→ SELECT SALESMAN_NO FROM SALESMAN_MASTER where CITY = 'Mumbai';

```
MariaDB [info]> SELECT SALESMAN_NO FROM SALESMAN_MASTER where CITY = 'Mumbai';
+-------------+
| SALESMAN_NO |
+-------------+
| S00001      |
| S00002      |
| S00003      |
| S00004      |
+-------------+
4 rows in set (0.000 sec)
```

Find Product_No whose Price = Rs.150

→ SELECT DESCRIPTION FROM PRODUCT_MASTER WHERE COST_PRICE =
'150' or SELL_PRICE = '150';

```
MariaDB [info]> SELECT DESCRIPTION FROM PRODUCT_MASTER WHERE COST_PRICE = '150' or SELL_PRICE = '150';
Empty set (0.000 sec)
```

Find Product_No of T-Shirts in Product_Master table

→ SELECT PRODUCT_NO FROM PRODUCT_MASTER where DESCRIPTION = 'T-
Shirts';

```
MariaDB [info]> SELECT PRODUCT_NO FROM PRODUCT_MASTER where DESCRIPTION = 'T-Shirts';
+------------+
| PRODUCT_NO |
+------------+
| P00001     |
+------------+
1 row in set (0.000 sec)
```

EXPERIMENT - 4

DATABASE MANAGEMENT SYSTEMS LAB

Aim
Write SQL commands for implementing ALTER, UPDATE and DELETE.

Syeda Reeha Quasar
14114802719
4C7

EXPERIMENT – 4

Aim:
Write SQL commands for implementing ALTER, UPDATE and DELETE.

Tools Used:
MariaDB

Procedure:

Change the City of Client_No 'C00005' to 'Bangalore'

```
UPDATE CLIENT_MASTER

    → SET CITY = 'Bangalore'
    → WHERE CLIENT_NO = 'C00005';
```

```
MariaDB [info]> UPDATE CLIENT_MASTER
    -> SET CITY = 'Bangalore'
    -> WHERE CLIENT_NO = 'C00005';
Query OK, 1 row affected (0.004 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Altered Data is: -

```
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  |          |          | Bangalore | 560001  | Karnataka   | 0.00     |
| C00005    | Hansel Colaco  |          |          | Bangalore | 400060  | Maharashtra | 2000.00  |
| C00006    | Deepak Sharma  |          |          | Mangalore | 560050  | Karnataka   | 0.00     |
+-----------+----------------+----------+----------+-----------+---------+-------------+----------+
6 rows in set (0.000 sec)
```

Change the Bal_Due of Client_No 'C00001' to Rs.1000

→ UPDATE CLIENT_MASTER
→ SET BAL_DUE = '1000'
→ WHERE CLIENT_NO = 'C00001';

```
MariaDB [info]> UPDATE CLIENT_MASTER
    -> SET BAL_DUE = '1000'
    -> WHERE CLIENT_NO = 'C00001';
Query OK, 1 row affected (0.004 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

Altered Data is: -

```
MariaDB [info]> SELECT * FROM CLIENT_MASTER;
+-----------+----------------+----------+----------+-----------+---------+-------------+---------+
| CLIENT_NO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BAL_DUE |
+-----------+----------------+----------+----------+-----------+---------+-------------+---------+
| C00001    | Ivan           |          |          | Mumbai    | 400054  | Maharashtra | 1000.00 |
| 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  |          |          | Bangalore | 400060  | Maharashtra | 2000.00 |
| C00006    | Deepak Sharma  |          |          | Mangalore | 560050  | Karnataka   |    0.00 |
+-----------+----------------+----------+----------+-----------+---------+-------------+---------+
6 rows in set (0.000 sec)
```

Change the Cost_Price of 'Trousers' to Rs.950

→ UPDATE PRODUCT_MASTER
→ SET COST_PRICE = '950
→ WHERE DESCRIPTION = 'Trousers';

```
MariaDB [info]> UPDATE PRODUCT_MASTER
    -> SET COST_PRICE = '950'
    -> WHERE DESCRIPTION = 'Trousers';
Query OK, 1 row affected (0.003 sec)
Rows matched: 1  Changed: 1  Warnings: 0

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 |     950.00 |
| 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 (0.001 sec)
```

Change the City of the Salesman to 'Pune'

```
        UPDATE SALESMAN_MASTER
        ➔ SET CITY = 'Pune';
```

```
MariaDB [info]> UPDATE SALESMAN_MASTER
    -> SET CITY = 'Pune';
Query OK, 4 rows affected (0.003 sec)
Rows matched: 4  Changed: 4  Warnings: 0
```

Altered Data is: -

```
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    | Pune | 400002  | Maharashtra | 3000.00 |     100.00 |     50.00 | Good    |
| S00002      | Omkar         | 65       | Nariman  | Pune | 400002  | Maharashtra | 3000.00 |       0.00 |    100.00 | Good    |
| S00003      | Raj           | P/7      | Bandra   | Pune | 400002  | Maharashtra | 3000.00 |     200.00 |    100.00 | Good    |
| S00004      | Ashish        | A/5      | Juhu     | Pune | 400044  | Maharashtra | 3500.00 |     200.00 |    150.00 | Good    |
+------------+---------------+----------+----------+------+---------+-------------+---------+------------+-----------+---------+
4 rows in set (0.000 sec)
```

Delete all Salesman from the Salesman_Master whosesalaries are equal to Rs. 3500

➜ DELETE FROM SALESMAN_MASTER
➜ WHERE SAL_AMT = '3500';

```
MariaDB [info]> DELETE FROM SALESMAN_MASTER
    -> WHERE SAL_AMT = '3500';
Query OK, 1 row affected (0.003 sec)
```

Altered Data is: -

```
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    | Pune | 400002  | Maharashtra | 3000.00  | 100.00     | 50.00     | Good    |
| S00002     | Omkar        | 65       | Nariman  | Pune | 400002  | Maharashtra | 3000.00  | 0.00       | 100.00    | Good    |
| S00003     | Raj          | P/7      | Bandra   | Pune | 400002  | Maharashtra | 3000.00  | 200.00     | 100.00    | Good    |
+------------+--------------+----------+----------+------+---------+-------------+----------+----------+-----------+---------+
3 rows in set (0.001 sec)
```

Delete all Products from Product_Master where the QtyOnHand = 100

➜ DELETE FROM PRODUCT_MASTER
➜ WHERE QTY_ON_HAND = '100';

Altered Data is: -

```
MariaDB [info]> SELECT * FROM CLIENT_MASTER;
+-----------+----------------+----------+----------+-----------+---------+-------------+---------+
| CLIENT_NO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE | STATE       | BAL_DUE |
+-----------+----------------+----------+----------+-----------+---------+-------------+---------+
| C00001    | Ivan           |          |          | Mumbai    | 400054  | Maharashtra | 1000.00 |
| 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  |          |          | Bangalore | 400060  | Maharashtra | 2000.00 |
| C00006    | Deepak Sharma  |          |          | Mangalore | 560050  | Karnataka   | 0.00    |
+-----------+----------------+----------+----------+-----------+---------+-------------+---------+
6 rows in set (0.000 sec)
```

Delete from Client_Master where the column state holds the value 'Tamil Nadu'

➔ DELETE FROM CLIENT_MASTER
➔ WHERE STATE = 'Tamil Nadu';

```
MariaDB [info]> SELECT * FROM CLIENT_MASTER;
+-----------+----------------+----------+----------+-----------+----------+-------------+----------+
| CLIENT_NO | NAME           | ADDRESS1 | ADDRESS2 | CITY      | PINCODE  | STATE       | BAL_DUE  |
+-----------+----------------+----------+----------+-----------+----------+-------------+----------+
| C00001    | Ivan           |          |          | Mumbai    | 400054   | Maharashtra | 1000.00  |
| 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  |          |          | Bangalore | 400060   | Maharashtra | 2000.00  |
| C00006    | Deepak Sharma  |          |          | Mangalore | 560050   | Karnataka   | 0.00     |
+-----------+----------------+----------+----------+-----------+----------+-------------+----------+
6 rows in set (0.000 sec)

MariaDB [info]> DELETE FROM CLIENT_MASTER
    -> WHERE STATE = 'Tamil Nadu';
Query OK, 1 row affected (0.003 sec)

MariaDB [info]> SELECT * FROM CLIENT_MASTER;
+-----------+---------------+----------+----------+-----------+----------+-------------+----------+
| CLIENT_NO | NAME          | ADDRESS1 | ADDRESS2 | CITY      | PINCODE  | STATE       | BAL_DUE  |
+-----------+---------------+----------+----------+-----------+----------+-------------+----------+
| C00001    | Ivan          |          |          | Mumbai    | 400054   | Maharashtra | 1000.00  |
| C00003    | Chhaya Bankar |          |          | Mumbai    | 400057   | Maharashtra | 5000.00  |
| C00004    | Ashwini Joshi |          |          | Bangalore | 560001   | Karnataka   | 0.00     |
| C00005    | Hansel Colaco |          |          | Bangalore | 400060   | Maharashtra | 2000.00  |
| C00006    | Deepak Sharma |          |          | Mangalore | 560050   | Karnataka   | 0.00     |
+-----------+---------------+----------+----------+-----------+----------+-------------+----------+
5 rows in set (0.000 sec)
```

Add a column called 'Telephone' of data type 'Number' and size = '10' to the Client_Master Table

➔ ALTER TABLE CLIENT_MASTER
➔ ADD TELEPHONE INT(10);

```
MariaDB [info]> ALTER TABLE CLIENT_MASTER
    -> ADD TELEPHONE INT(10);
Query OK, 0 rows affected (0.007 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [info]> SELECT * FROM CLIENT_MASTER;
+-----------+---------------+----------+----------+-----------+----------+-------------+----------+-----------+
| CLIENT_NO | NAME          | ADDRESS1 | ADDRESS2 | CITY      | PINCODE  | STATE       | BAL_DUE  | TELEPHONE |
+-----------+---------------+----------+----------+-----------+----------+-------------+----------+-----------+
| C00001    | Ivan          |          |          | Mumbai    | 400054   | Maharashtra | 1000.00  | NULL      |
| C00003    | Chhaya Bankar |          |          | Mumbai    | 400057   | Maharashtra | 5000.00  | NULL      |
| C00004    | Ashwini Joshi |          |          | Bangalore | 560001   | Karnataka   | 0.00     | NULL      |
| C00005    | Hansel Colaco |          |          | Bangalore | 400060   | Maharashtra | 2000.00  | NULL      |
| C00006    | Deepak Sharma |          |          | Mangalore | 560050   | Karnataka   | 0.00     | NULL      |
+-----------+---------------+----------+----------+-----------+----------+-------------+----------+-----------+
5 rows in set (0.007 sec)
```

Change the size of Sell_Price column in Product_Master to '10.2'

➜ ALTER TABLE PRODUCT_MASTER
➜ MODIFY SELL_PRICE FLOAT(10,2);

```
MariaDB [info]> ALTER TABLE PRODUCT_MASTER
    -> MODIFY SELL_PRICE float(10,2);
Query OK, 0 rows affected (0.005 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [info]> SELECT * FROM PROSUCT_MASTER;
ERROR 1146 (42S02): Table 'info.prosuct_master' doesn't exist
MariaDB [info]> SELECT * FROM PRODUCT_MASTER;
+------------+-------------+----------------+--------------+-------------+-------------+------------+------------+
| PRODUCT_NO | DESCRIPTION | PROFIT_PERCENT | UNIT_MEASURE | QTY_ON_HAND | REORDER_LVL | SELL_PRICE | COST_PRICE |
+------------+-------------+----------------+--------------+-------------+-------------+------------+------------+
| P00001     | T-shirts    |           5.00 | Piece        |         200 |          50 |    5350.00 |     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     | PullOvers   |           2.50 | Piece        |          80 |          30 |     700.00 |     450.00 |
| P07975     | LycraTops   |           5.00 | Piece        |          70 |          30 |     300.00 |     175.00 |
| P08865     | Skirts      |           5.00 | piece        |          75 |          30 |     450.00 |     300.00 |
+------------+-------------+----------------+--------------+-------------+-------------+------------+------------+
6 rows in set (0.007 sec)
```

Destroy the table Client_Master along with its data

➜ DROP TABLE CLIENT_MASTER;

```
MariaDB [info]> DROP TABLE CLIENT_MASTER
    -> ;
Query OK, 0 rows affected (0.013 sec)

MariaDB [info]> DESCRIBE CLIENT_MASTER;
ERROR 1146 (42S02): Table 'info.client_master' doesn't exist
```

Change the name of the Salesman_Master table toSMAN_MAST

→ RENAME TABLE SALESMAN_MASTER TO SMAN_MAST;

```
MariaDB [info]> RENAME TABLE SALESMAN_MASTER TO SMAN_MAST;
Query OK, 0 rows affected (0.010 sec)

MariaDB [info]> SELECT * FROM SMAN_MAST;
+------------+--------------+----------+----------+------+---------+-------------+---------+------------+-----------+---------+
| SALESMAN_NO | SALESMAN_NAME | ADDRESS1 | ADDRESS2 | CITY | PINCODE | STATE       | SAL_AMT | TGT_TO_GET | YTD_SALES | REMARKS |
+------------+--------------+----------+----------+------+---------+-------------+---------+------------+-----------+---------+
| S00001      | Aman          | A/14     | Worli    | Pune | 400002  | Maharashtra | 3000.00 |     100.00 |     50.00 | Good    |
| S00002      | Omkar         | 65       | Nariman  | Pune | 400002  | Maharashtra | 3000.00 |       0.00 |    100.00 | Good    |
| S00003      | Raj           | P/7      | Bandra   | Pune | 400002  | Maharashtra | 3000.00 |     200.00 |    100.00 | Good    |
+------------+--------------+----------+----------+------+---------+-------------+---------+------------+-----------+---------+
3 rows in set (0.001 sec)
```

Office DB

1. CREATE DATABASE Office;
2. Use Office;
3. CREATE TABLE Employee(id int NOT NULL,Name varchar(255),Role varchar(255),PRIMARY KEY (id));
4. INSERT INTO Employee(id,Name,Role)VALUES ('1','Elliot alderson','Consulting Hacker');
5. INSERT INTO Employee(id,Name,Role)VALUES ('2','saksham pathak','Systems Arch');
6. Select * FROM Employee;

```
C:\WINDOWS\System32>mysql -u root -p
Enter password: ****
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 26
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)]> CREATE DATABASE Office;
Query OK, 1 row affected (0.002 sec)

MariaDB [(none)]> use Office;
Database changed
MariaDB [Office]> CREATE TABLE Employee(id int NOT NULL,Name varchar(255),Role varchar(255),PRIMARY KEY (id));
Query OK, 0 rows affected (0.019 sec)

MariaDB [Office]> INSERT INTO Employee(id,Name,Role)VALUES ('1','Elliot alderson','Consulting Hacker');
Query OK, 1 row affected (0.004 sec)

MariaDB [Office]> INSERT INTO Employee(id,Name,Role)VALUES ('1','saksham pathak','Systems Arch');
ERROR 1062 (23000): Duplicate entry '1' for key 'PRIMARY'
MariaDB [Office]> INSERT INTO Employee(id,Name,Role)VALUES ('2','saksham pathak','Systems Arch');
Query OK, 1 row affected (0.003 sec)

MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+
| id | Name           | Role             |
+----+----------------+------------------+
|  1 | Elliot alderson | Consulting Hacker |
|  2 | saksham pathak | Systems Arch     |
+----+----------------+------------------+
2 rows in set (0.001 sec)
```

7. ALTER TABLE Employee ADD COLUMN Salary int NOT NULL;
8. Select * FROM Employee;

```
MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+
| id | Name           | Role             |
+----+----------------+------------------+
|  1 | Elliot alderson | Consulting Hacker |
|  2 | saksham pathak  | Systems Arch     |
+----+----------------+------------------+
2 rows in set (0.001 sec)

MariaDB [Office]> ALTER TABLE Employee ADD COLUMN Salary int NOT NULL;
Query OK, 0 rows affected (0.007 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+--------+
| id | Name           | Role             | Salary |
+----+----------------+------------------+--------+
|  1 | Elliot alderson | Consulting Hacker |      0 |
|  2 | saksham pathak  | Systems Arch     |      0 |
+----+----------------+------------------+--------+
2 rows in set (0.002 sec)

MariaDB [Office]>
```

9. UPDATE Employee SET salary = '15000' WHERE id = '1';
10. UPDATE Employee SET salary = '10000' WHERE id = '2';
11. Select * FROM Employee;

```
MariaDB [Office]> UPDATE Employee SET salary = '15000' WHERE id = '1';
Query OK, 1 row affected (0.007 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [Office]> UPDATE Employee SET salary = '10000' WHERE id = '2';
Query OK, 1 row affected (0.002 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+--------+
| id | Name           | Role             | Salary |
+----+----------------+------------------+--------+
|  1 | Elliot alderson | Consulting Hacker |  15000 |
|  2 | saksham pathak  | Systems Arch     |  10000 |
+----+----------------+------------------+--------+
2 rows in set (0.000 sec)
```

12. DELETE FROM Employee WHERE Name = 'saksham pathak';
13. Select * FROM Employee;
14.

```
MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+--------+
| id | Name           | Role             | Salary |
+----+----------------+------------------+--------+
|  1 | Elliot alderson | Consulting Hacker |      0 |
|  2 | saksham pathak  | Systems Arch     |      0 |
+----+----------------+------------------+--------+
2 rows in set (0.002 sec)

MariaDB [Office]> UPDATE Employee SET salary = '15000' WHERE id = '1';
Query OK, 1 row affected (0.007 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [Office]> UPDATE Employee SET salary = '10000' WHERE id = '2';
Query OK, 1 row affected (0.002 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+--------+
| id | Name           | Role             | Salary |
+----+----------------+------------------+--------+
|  1 | Elliot alderson | Consulting Hacker |  15000 |
|  2 | saksham pathak  | Systems Arch     |  10000 |
+----+----------------+------------------+--------+
2 rows in set (0.000 sec)

MariaDB [Office]> DELETE FROM Emplyoee WHERE Name = 'saksham pathak';
ERROR 1146 (42S02): Table 'office.emplyoee' doesn't exist
MariaDB [Office]> DELETE FROM Employee WHERE Name = 'saksham pathak';
Query OK, 1 row affected (0.003 sec)

MariaDB [Office]> select * FROM Employee;
+----+----------------+------------------+--------+
| id | Name           | Role             | Salary |
+----+----------------+------------------+--------+
|  1 | Elliot alderson | Consulting Hacker |  15000 |
+----+----------------+------------------+--------+
1 row in set (0.000 sec)

MariaDB [Office]>
```

EXPERIMENT - 5

DATABASE MANAGEMENT SYSTEMS LAB

Aim

Write the queries to implement the concept of Integrity Constraints like Primary Key, Foreign Key, NOT NULL to the tables.

Syeda Reeha Quasar

14114802719

4C7

EXPERIMENT – 5

Aim:
Write the queries to implement the concept of Integrity Constraints like Primary Key, Foreign Key, NOT NULL to the tables.

Tools Used:
MariaDB

Procedure:

Creation of Table:

1. **Table Name:**   CLIENT_MASTER2
2. **Description:**   Used to store Client Information

Commands used for Creating Table:

→ CREATE TABLE CLIENT_MASTER2 (
→ CLIENT_NO CHAR(6) PRIMARY KEY,
→ NAME VARCHAR(20) NOT NULL,
→ ADDRESS1 VARCHAR(30),
→ ADDRESS2 VARCHAR(30),
→ CITY VARCHAR(15),
→ PINCODE INT(8),
→ STATE VARCHAR(15),
→ BAL_DUE FLOAT(10,2));

```
MariaDB [info]> CREATE TABLE CLIENT_MASTER2 (
    -> CLIENT_NO CHAR(6) PRIMARY KEY,
    -> NAME VARCHAR(20) NOT NULL,
    -> 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 (0.013 sec)
```

Describing Schema of the Table:

Commands used:
→ DESCRIBE CLIENT_MASTER2 or DESC CLIENT_MASTER2;

```
MariaDB [info]> DESCRIBE CLIENT_MASTER2;
+-----------+-------------+------+-----+---------+-------+
| Field     | Type        | Null | Key | Default | Extra |
+-----------+-------------+------+-----+---------+-------+
| CLIENT_NO | char(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(8)      | YES  |     | NULL    |       |
| STATE     | varchar(15) | YES  |     | NULL    |       |
| BAL_DUE   | float(10,2) | YES  |     | NULL    |       |
+-----------+-------------+------+-----+---------+-------+
8 rows in set (0.016 sec)
```

Creation of Table:

1. **Table Name:**   PRODUCT_MASTER2
2. **Description:**   Used to store Prdouct Information

Commands for Creating Table:

→ CREATE TABLE PRODUCT_MASTER2(
→ PRODUCT_NO VARCHAR(6) PRIMARY KEY,
→ DESCRIPTION VARCHAR(15) NOT NULL,
→ PROFIT_PERCENT FLOAT(4,2) NOT NULL,
→ UNIT_MEASURE VARCHAR(10) NOT NULL,
→ QTY_ON_HEAD INT(8) NOT NULL,
→ REORDER_LVL INT(8) NOT NULL,
→ SELL_PRICE FLOAT(8,2) NOT NULL,
→ COST_PRICE FLOAT(8,2) NOT NULL);

```
MariaDB [info]> CREATE TABLE PRODUCT_MASTER2(
    -> PRODUCT_NO VARCHAR(6) PRIMARY KEY,
    -> DESCRIPTION VARCHAR(15) NOT NULL,
    -> PROFIT_PERCENT FLOAT(4,2) NOT NULL,
    -> UNIT_MEASURE VARCHAR(10) NOT NULL,
    -> QTY_ON_HAND INT(8) NOT NULL,
    -> REORDER_LVL INT(8) NOT NULL,
    -> SELL_PRICE FLOAT(8,2) NOT NULL,
    -> COST_PRICE FLOAT(8,2) NOT NULL);
Query OK, 0 rows affected (0.013 sec)
```

Describing Schema of the Table:

Commands used:
→ DESCRIBE PRODUCT_MASTER2 or DESC PRODUCT_MASTER2;

```
MariaDB [info]> DESC PRODUCT_MASTER2;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| PRODUCT_NO     | varchar(6)  | NO   | PRI | NULL    |       |
| DESCRIPTION    | varchar(15) | NO   |     | NULL    |       |
| PROFIT_PERCENT | float(4,2)  | NO   |     | NULL    |       |
| UNIT_MEASURE   | varchar(10) | NO   |     | NULL    |       |
| QTY_ON_HAND    | int(8)      | NO   |     | NULL    |       |
| REORDER_LVL    | int(8)      | NO   |     | NULL    |       |
| SELL_PRICE     | float(8,2)  | NO   |     | NULL    |       |
| COST_PRICE     | float(8,2)  | NO   |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
8 rows in set (0.011 sec)
```

Creation of Table:

1) Table Name: SALESMAN_MASTER2

2) Description: Used to store Salesman Information

Commands for Creating Table:

```
→ CREATE TABLE SALESMAN_MASTER (
→ SALESMAN_NO VARCHAR(6) PRIMARY KEY,
→ SALESMAN_NAME VARCHAR(20) NOT NULL,
→ ADDRESS1 VARCHAR(30) NOT NULL,
→ ADDRESS2 VARCHAR(30),
→ CITY VARCHAR(20),
→ PINCODE INT(8),
→ STATE VARCHAR(20),
→ SAL_AMT FLOAT(8,2) NOT NULL,
→ TGT_TO_GET FLOAT(6,2) NOT NULL,
→ YTD_SALES FLOAT(6,2) NOT NULL,
→ REMARKS VARCHAR(60),
→ CONSTRAINT CK_SALESMAN_NO CHECK(SALESMAN_NO LIKE "S%"),
→ CONSTRAINT CK_SAL_AMT CHECK(SAL_AMT != 0),
→ CONSTRAINT CK_TGT_TO_GET CHECK(TGT_TO_GET != 0));
```

```
MariaDB [info]> CREATE TABLE SALESMAN_MASTER2(
    -> SALESMAN_NO VARCHAR(6) PRIMARY KEY,
    -> SALESMAN_NAME VARCHAR(20) NOT NULL,
    -> ADDRESS1 VARCHAR(30) NOT NULL,
    -> ADDRESS2 VARCHAR(30),
    -> CITY VARCHAR(20),
    -> PINCODE INT(8),
    -> STATE VARCHAR(20),
    -> SAL_AMT FLOAT(8,2) NOT NULL,
    -> TGT_TO_GET FLOAT(6,2) NOT NULL,
    -> YTD_SALES FLOAT(6,2) NOT NULL,
    -> REMARKS VARCHAR(60),
    -> CONSTRAINT CK_SALESMAN_NO CHECK(SALESMAN_NO LIKE "S%"),
    -> CONSTRAINT CK_SAL_AMT CHECK(SAL_AMT != 0),
    -> CONSTRAINT CK_TGT_TO_GET CHECK(TGT_TO_GET != 0));
Query OK, 0 rows affected (0.014 sec)
```

Schema of the Table:

Commands used:

→ DESCRIBE SALESMAN_MASTER2 or DESC SALESMAN_MASTER2;

```
MariaDB [info]> DESC SALESMAN_MASTER2;
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| SALESMAN_NO   | varchar(6)  | NO   | PRI | NULL    |       |
| SALESMAN_NAME | varchar(20) | NO   |     | NULL    |       |
| ADDRESS1      | varchar(30) | NO   |     | 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)  | NO   |     | NULL    |       |
| TGT_TO_GET    | float(6,2)  | NO   |     | NULL    |       |
| YTD_SALES     | float(6,2)  | NO   |     | NULL    |       |
| REMARKS       | varchar(60) | YES  |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
11 rows in set (0.026 sec)
```

Creation of Table:

1) **Table Name:** SALES_ORDER
2) **Description:** Used to store Sales Order Information

Commands for Creating Table:

→ CREATE TABLE SALES_ORDER(
→ ORDER_NO CHAR(6) PRIMARY KEY,
→ CLIENT_NO CHAR(6)REFERENCES CLIENT_MASTER2,
→ ORDERDATE DATE,

→ SALESMAN_NO CHAR(6) REFERENCES SALESMAN_MASTER2,

→ DELIVTYPE CHAR(1) DEFAULT 'F',

→ BILLYN CHAR(1),

→ DELIVDATE DATE,

→ ORDERSTATUS VARCHAR(10),

→ CONSTRAINT CK_DELIVTYPE CHECK(DELIVTYPE IN('P','F')),

→ CONSTRAINT CK_DELIVDATE CHECK(DELIVDATE>ORDERDATE),

→ CONSTRAINT CK_ORDERSTATUS CHECK(ORDERSTATUS IN('In
   Process','Fulfilled','Backorder','Cancelled')));

```
MariaDB [info]> CREATE TABLE SALES_ORDER(
    -> ORDER_NO CHAR(6) PRIMARY KEY,
    -> CLIENT_NO CHAR(6)REFERENCES CLIENT_MASTER2,
    -> ORDERDATE DATE,
    -> SALESMAN_NO CHAR(6) REFERENCES SALESMAN_MASTER2,
    -> DELIVTYPE CHAR(1) DEFAULT 'F',
    -> BILLYN CHAR(1),
    -> DELIVDATE DATE,
    -> ORDERSTATUS VARCHAR(10),
    -> CONSTRAINT CK_DELIVTYPE CHECK(DELIVTYPE IN('P','F')),
    -> CONSTRAINT CK_DELIVDATE CHECK(DELIVDATE>ORDERDATE),
    -> CONSTRAINT CK_ORDERSTATUS CHECK(ORDERSTATUS IN('In Process','Fulfilled','Backorder','Cancelled')));
Query OK, 0 rows affected (0.018 sec)
```

Describing Schema of the Table:

→ DESCRIBE SALES_ORDER or DESC SALES_ORDER;

```
MariaDB [info]> DESC SALES_ORDER;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| ORDER_NO    | char(6)     | NO   | PRI | NULL    |       |
| CLIENT_NO   | char(6)     | YES  | MUL | NULL    |       |
| ORDERDATE   | date        | YES  |     | NULL    |       |
| SALESMAN_NO | char(6)     | YES  | MUL | NULL    |       |
| DELIVTYPE   | char(1)     | YES  |     | F       |       |
| BILLYN      | char(1)     | YES  |     | NULL    |       |
| DELIVDATE   | date        | YES  |     | NULL    |       |
| ORDERSTATUS | varchar(10) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
8 rows in set (0.011 sec)
```

Creation of Table:

1) **Table Name:** SALES_ORDER_DETAILS
2) **Description:** Used to store Client's Orders with details of each product.

Commands for Creating Table:

→ CREATE TABLE SALES_ORDER_DETAILS(
→ ORDER_NO CHAR(6) REFERENCES SALES_ORDER,
→ PRODUCT_NO CHAR(6) REFERENCES PRODUCT_MASTER2,
→ QTY_ORDERED INT,
→ QTY_DISP INT,
→ PRODUCT_RATE FLOAT(10,2));

```
MariaDB [info]> CREATE TABLE SALES_ORDER_DETAILS(
    -> ORDER_NO CHAR(6) REFERENCES SALES_ORDER,
    -> PRODUCT_NO CHAR(6) REFERENCES PRODUCT_MASTER2,
    -> QTY_ORDERED INT,
    -> QTY_DISP INT,
    -> PRODUCT_RATE FLOAT(10,2));
Query OK, 0 rows affected (0.015 sec)
```

Describing Schema of the Table:

Commands used:

→ DESCRIBE SALES_ORDER_DETAILS or DESC SALES_ORDER_DETAILS;

```
MariaDB [info]> DESC SALES_ORDER_DETAILS;
+--------------+------------+------+-----+---------+-------+
| Field        | Type       | Null | Key | Default | Extra |
+--------------+------------+------+-----+---------+-------+
| ORDER_NO     | char(6)    | YES  | MUL | NULL    |       |
| PRODUCT_NO   | char(6)    | YES  | MUL | NULL    |       |
| QTY_ORDERED  | int(11)    | YES  |     | NULL    |       |
| QTY_DISP     | int(11)    | YES  |     | NULL    |       |
| PRODUCT_RATE | float(10,2)| YES  |     | NULL    |       |
+--------------+------------+------+-----+---------+-------+
5 rows in set (0.016 sec)
```

Database already created named college;

1) use College;
2) CREATE TABLE Teachers (teach_id int NOT NULL,LastName varchar(255),FirstName varchar(255),Address varchar(255),City varchar(255),PRIMARY KEY(teach_id);
3) INSERT INTO Teachers (teach_id,LastName,FirstName,Address,City)VALUES ('1', 'ferguson', 'sir alex', 'platama', 'Scotland');
4) INSERT INTO Teachers (teach_id,LastName,FirstName,Address,City)VALUES ('2', 'mourinhio', 'jose', 'porto', 'Portugal');

```
+---------+-----------+------------+----------------+----------+
| 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]> CREATE TABLE Teachers (teach_id int NOT NULL,LastName varchar(255),FirstName varchar(255),Address varchar(255),City varchar(255),PRIMARY KEY(teach_id);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near '' at line 1
MariaDB [College]> CREATE TABLE Teachers (teach_id int NOT NULL,LastName varchar(255),FirstName varchar(255),Address varchar(255),City varchar(255),PRIMARY KEY(teach_id));
Query OK, 0 rows affected (0.019 sec)

MariaDB [College]> INSERT INTO Teachers (teach_id,LastName,FirstName,Address,City)VALUES ('1', 'ferguson', 'sir alex', 'platama', 'Scotland');
Query OK, 1 row affected (0.006 sec)

MariaDB [College]> INSERT INTO Teachers (teach_id,LastName,FirstName,Address,City)VALUES ('2', 'mourinhio', 'jose', 'porto', 'Portugal');
Query OK, 1 row affected (0.004 sec)
```

5) show tables;
6) SELECT * FROM TABLES;

```
MariaDB [college]> show tables;
+-------------------+
| Tables_in_college |
+-------------------+
| students          |
| teachers          |
+-------------------+
2 rows in set (0.001 sec)

MariaDB [college]> select * FROM Teachers;
+----------+-----------+-----------+---------+----------+
| teach_id | LastName  | FirstName | Address | City     |
+----------+-----------+-----------+---------+----------+
|        1 | ferguson  | sir alex  | platama | Scotland |
|        2 | mourinhio | jose      | porto   | Portugal |
+----------+-----------+-----------+---------+----------+
2 rows in set (0.000 sec)
```

7) SHOW KEYS FROM Teachers WHERE Key_name = 'PRIMARY';'

```
MariaDB [college]> select * FROM Teachers;
+----------+----------+-----------+----------+----------+
| teach_id | LastName | FirstName | Address  | City     |
+----------+----------+-----------+----------+----------+
|        1 | ferguson | sir alex  | platama  | Scotland |
|        2 | mourinhio| jose      | porto    | Portugal |
+----------+----------+-----------+----------+----------+
2 rows in set (0.000 sec)

MariaDB [college]> SHOW KEYS FROM Teachers WHERE Key_name = 'PRIMARY';
+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
| Table    | Non_unique | Key_name | Seq_in_index | Column_name | Collation | Cardinality | Sub_part | Packed | Null | Index_type | Comment | Index_comment |
+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
| teachers |          0 | PRIMARY  |            1 | teach_id    | A         |           2 |     NULL | NULL   |      | BTREE      |         |               |
+----------+------------+----------+--------------+-------------+-----------+-------------+----------+--------+------+------------+---------+---------------+
1 row in set (0.019 sec)
```

Here we can see The implementation of PRIMARY KEY AND NOT NULL CONSTRAINS

Now For FOREIGN KEY

8) CREATE TABLE Insititute (inst_id int NOT NULL,Name varchar(255) NOT NULL,teach_id int, PRIMARY KEY (inst_id),FOREIGN KEY (teach_id) REFERENCES Teachers(teach_id));
9) INSERT INTO Teachers (inst_id,Name,teach_id)VALUES ('1', 'MIT','1');
10) INSERT INTO Insititute (inst_id,Name,teach_id)VALUES ('2', 'IIT','2');
11) SELECT * FROM Insititute;

```
Command Prompt (MariaDB 10.5 (x64)) - mysql -u root -p                                                    —   □   ×
Database changed
MariaDB [college]> CREATE TABLE Insititute (inst_id int NOT NULL PRIMARY KEY,Name varchar(255) NOT NULL,teach_id int FOREIGN KEY REFERENCES Teachers(teach_id));
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'FOREIGN KEY REF
ERENCES Teachers(teach_id))' at line 1
MariaDB [college]> CREATE TABLE Insititute (inst_id int NOT NULL,Name varchar(255) NOT NULL,teach_id int, PRIMARY KEY (inst_id),FOREIGN KEY (teach_id) REFERENCES Teachers(t
each_id));
Query OK, 0 rows affected (0.027 sec)

MariaDB [college]> INSERT INTO Teachers (inst_id,Name,teach_id)VALUES ('1', 'MIT','1');
ERROR 1054 (42S22): Unknown column 'inst_id' in 'field list'
MariaDB [college]> INSERT INTO Institute (inst_id,Name,teach_id)VALUES ('1', 'MIT','1');
ERROR 1146 (42S02): Table 'college.institute' doesn't exist
MariaDB [college]> INSERT INTO Insititute (inst_id,Name,teach_id)VALUES ('1', 'MIT','1');
Query OK, 1 row affected (0.007 sec)

MariaDB [college]> INSERT INTO Insititute (inst_id,Name,teach_id)VALUES ('2', 'IIT','2');
Query OK, 1 row affected (0.004 sec)

MariaDB [college]> show tables;
+-------------------+
| Tables_in_college |
+-------------------+
| insititute        |
| students          |
| teachers          |
+-------------------+
3 rows in set (0.001 sec)

MariaDB [college]> SHOW KEYS FROM Insitiute WHERE Key_name = 'FOREIGN';
ERROR 1146 (42S02): Table 'college.insitiute' doesn't exist
MariaDB [college]> SHOW KEYS FROM Insititute WHERE Key_name = 'FOREIGN';
Empty set (0.001 sec)

MariaDB [college]> SELECT * FROM Insititute;
+---------+------+----------+
| inst_id | Name | teach_id |
+---------+------+----------+
|       1 | MIT  |        1 |
|       2 | IIT  |        2 |
+---------+------+----------+
2 rows in set (0.000 sec)

MariaDB [college]> _
```