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4C7

Aim

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

Experiment - 5

DATABASE MANAGEMENT SYSTEMS LAB

# **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),

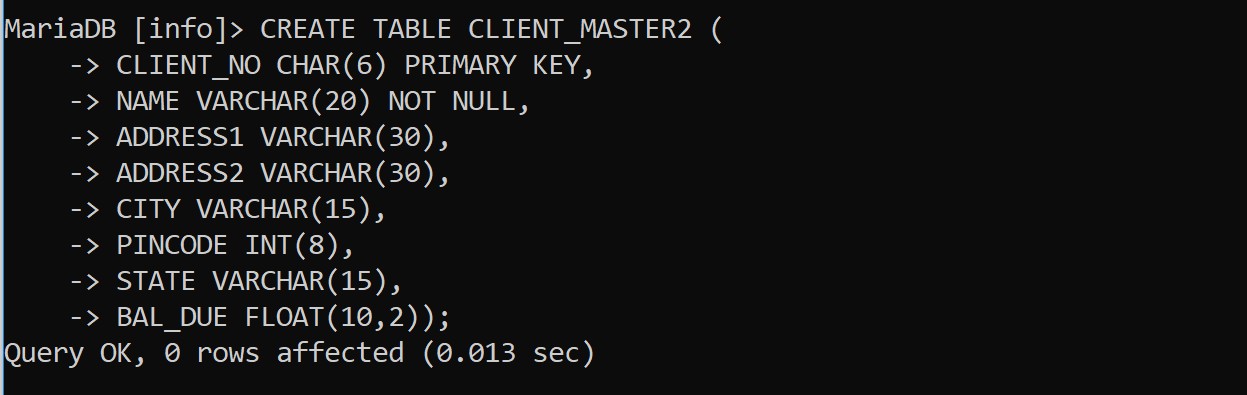
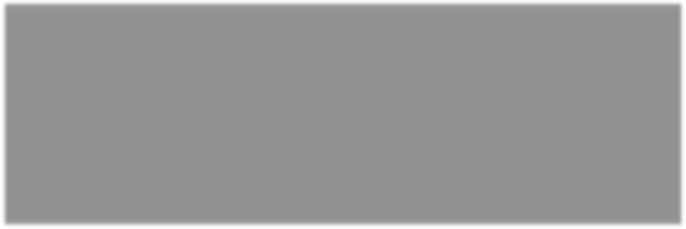
 ADDRESS2 VARCHAR(30),

 CITY VARCHAR(15),

 PINCODE INT(8),

 STATE VARCHAR(15),

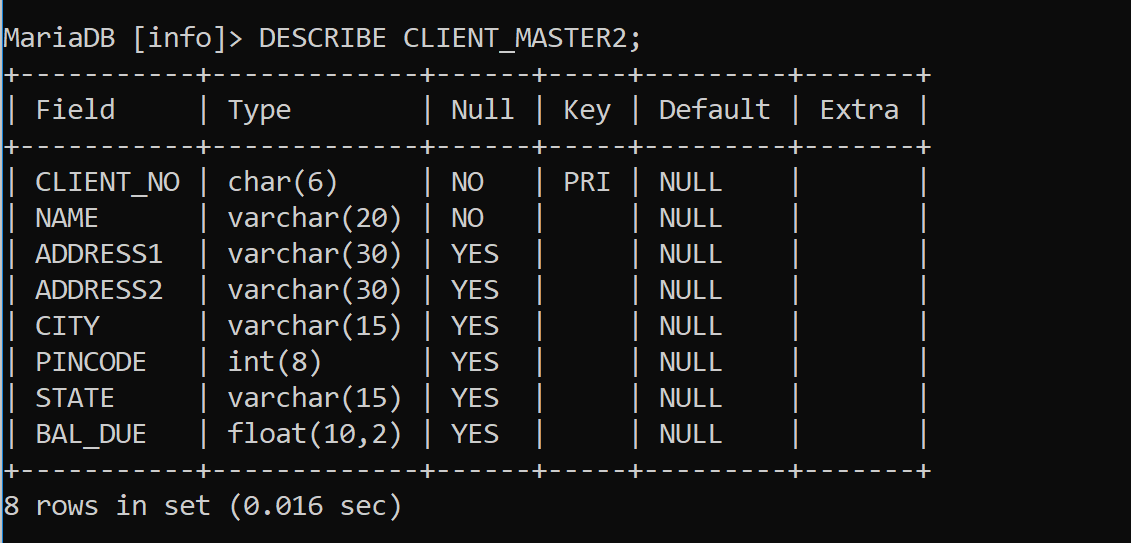
 BAL\_DUE FLOAT(10,2));



## Describing Schema of the Table:

### Commands used:

 DESCRIBE CLIENT\_MASTER2 or DESC CLIENT\_MASTER2;



### Inserting Data

insert into CLIENT\_MASTER values('C00001', 'Aman', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra', 30000);

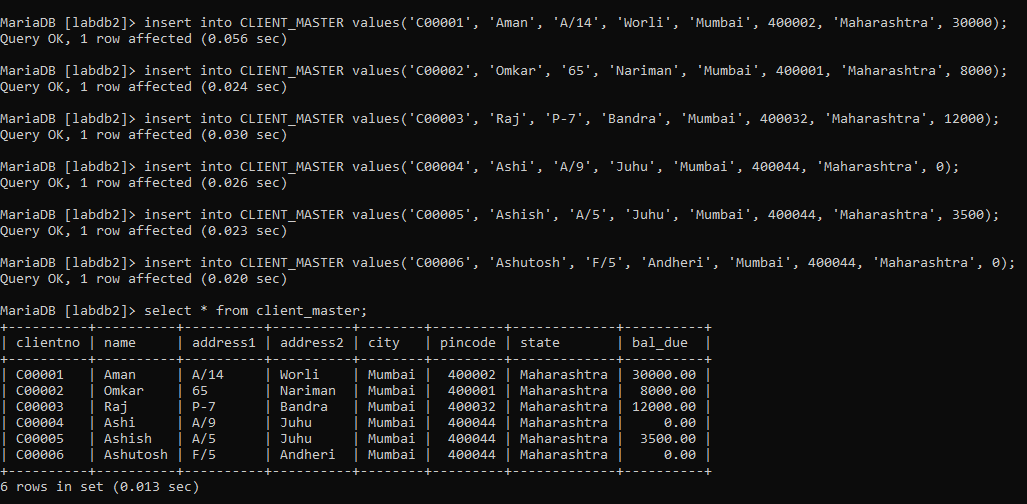
insert into CLIENT\_MASTER values('C00002', 'Omkar', '65', 'Nariman', 'Mumbai', 400001, 'Maharashtra', 8000);

insert into CLIENT\_MASTER values('C00003', 'Raj', 'P-7', 'Bandra', 'Mumbai', 400032, 'Maharashtra', 12000);

insert into CLIENT\_MASTER values('C00004', 'Ashi', 'A/9', 'Juhu', 'Mumbai', 400044, 'Maharashtra', 0);

insert into CLIENT\_MASTER values('C00005', 'Ashish', 'A/5', 'Juhu', 'Mumbai', 400044, 'Maharashtra', 3500);

insert into CLIENT\_MASTER values('C00006', 'Ashutosh', 'F/5', 'Andheri', 'Mumbai', 400044, 'Maharashtra', 0);



## 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,

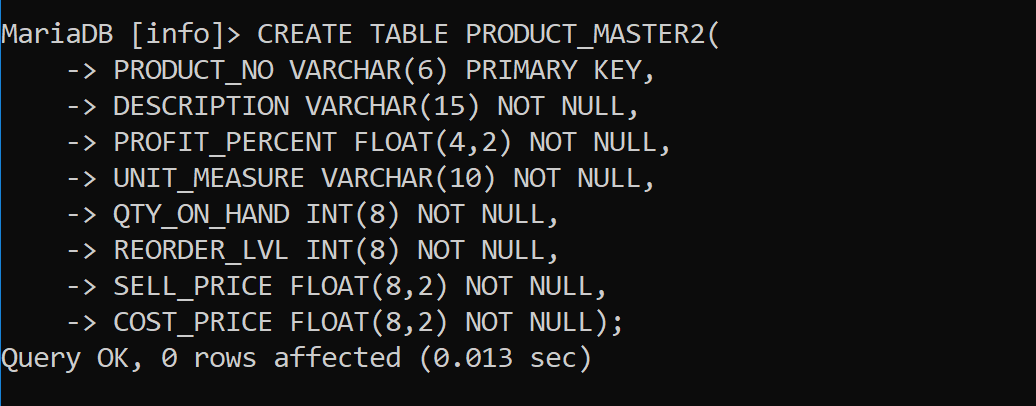
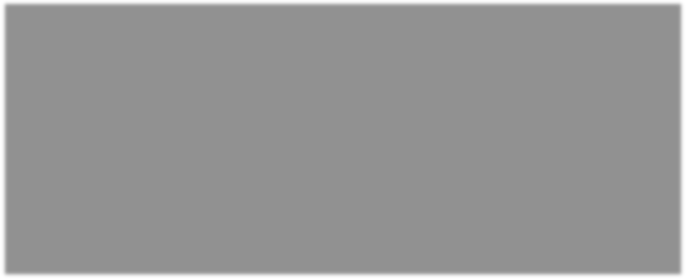
 UNIT\_MEASURE VARCHAR(10) NOT NULL,

 QTY\_ON\_HEAD INT(8) NOT NULL,

 REORDER\_LVL INT(8) NOT NULL,

 SELL\_PRICE FLOAT(8,2) NOT NULL,

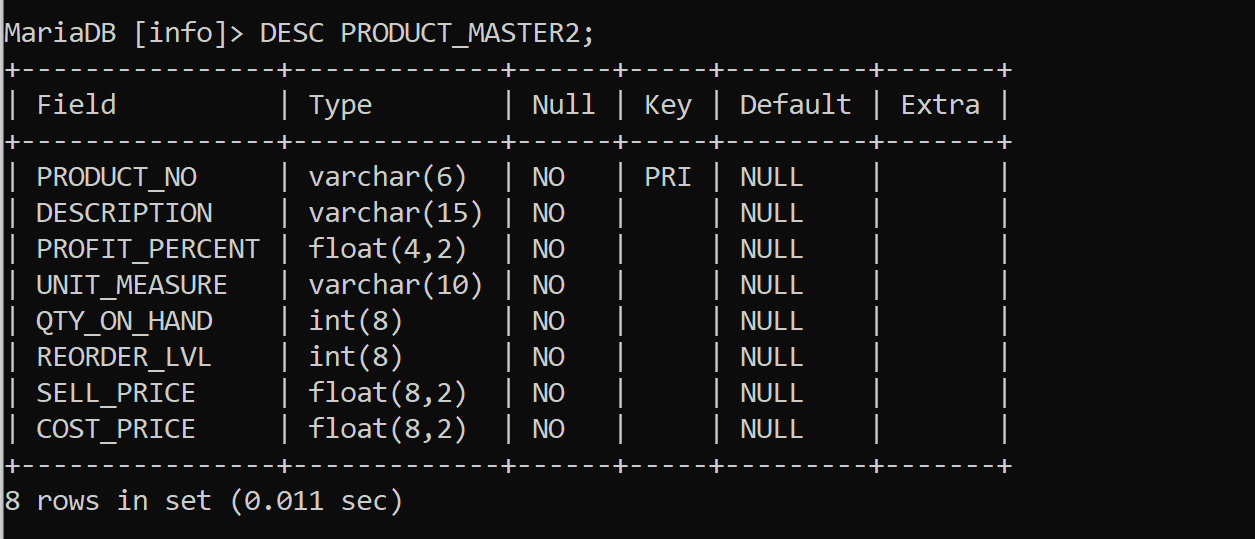
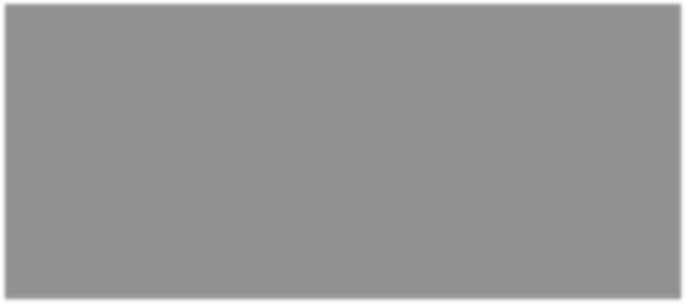
 COST\_PRICE FLOAT(8,2) NOT NULL);



## Describing Schema of the Table:

### Commands used:

 DESCRIBE PRODUCT\_MASTER2 or DESC PRODUCT\_MASTER2;



### Inserting Data

insert into product\_master values('P00001','T-Shirts',5,'Piece',200,50,5350,250);

insert into product\_master values('P0345','Shirts',6,'Piece',150,50,500,350);

insert into product\_master values('P07868','Trousers',2,'Piece',150,50,850,550);

insert into product\_master values('P07865','Jeans',5,'Piece',100,20,750,500);

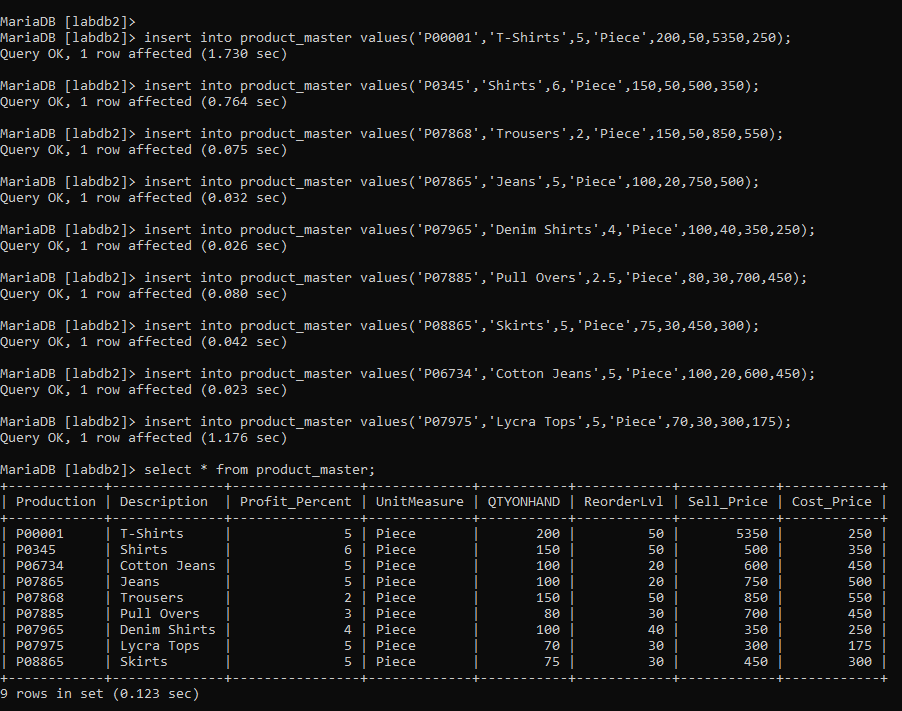
insert into product\_master values('P07965','Denim Shirts',4,'Piece',100,40,350,250);

insert into product\_master values('P07885','Pull Overs',2.5,'Piece',80,30,700,450);

insert into product\_master values('P08865','Skirts',5,'Piece',75,30,450,300);

insert into product\_master values('P06734','Cotton Jeans',5,'Piece',100,20,600,450);

insert into product\_master values('P07975','Lycra Tops',5,'Piece',70,30,300,175);



## 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,

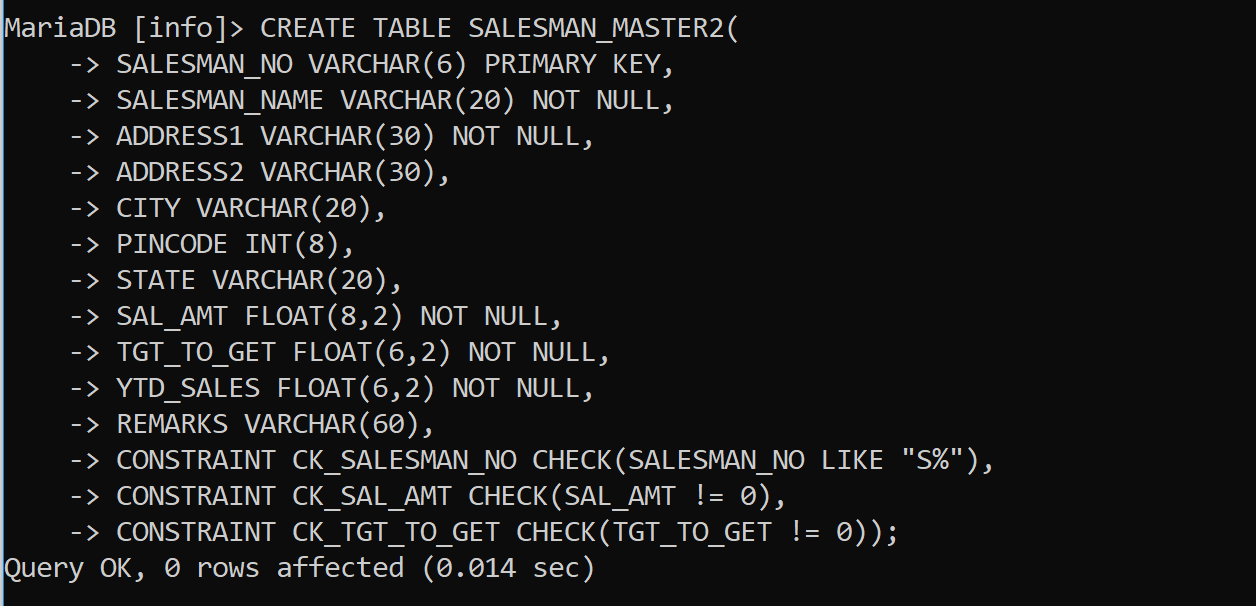
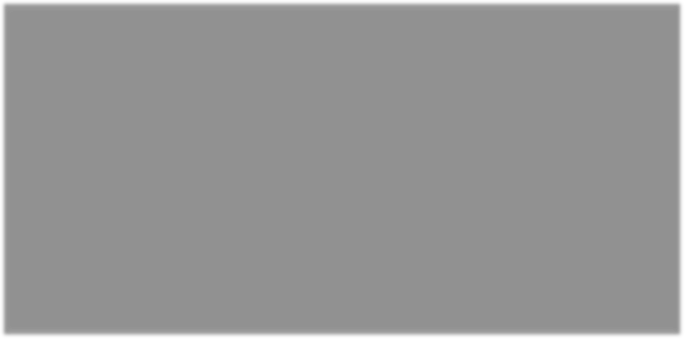
 YTD\_SALES FLOAT(6,2) NOT NULL,

 REMARKS VARCHAR(60),

 CONSTRAINT CK\_SALESMAN\_NO CHECK(SALESMAN\_NO LIKE "S%"),

 CONSTRAINT CK\_SAL\_AMT CHECK(SAL\_AMT != 0),

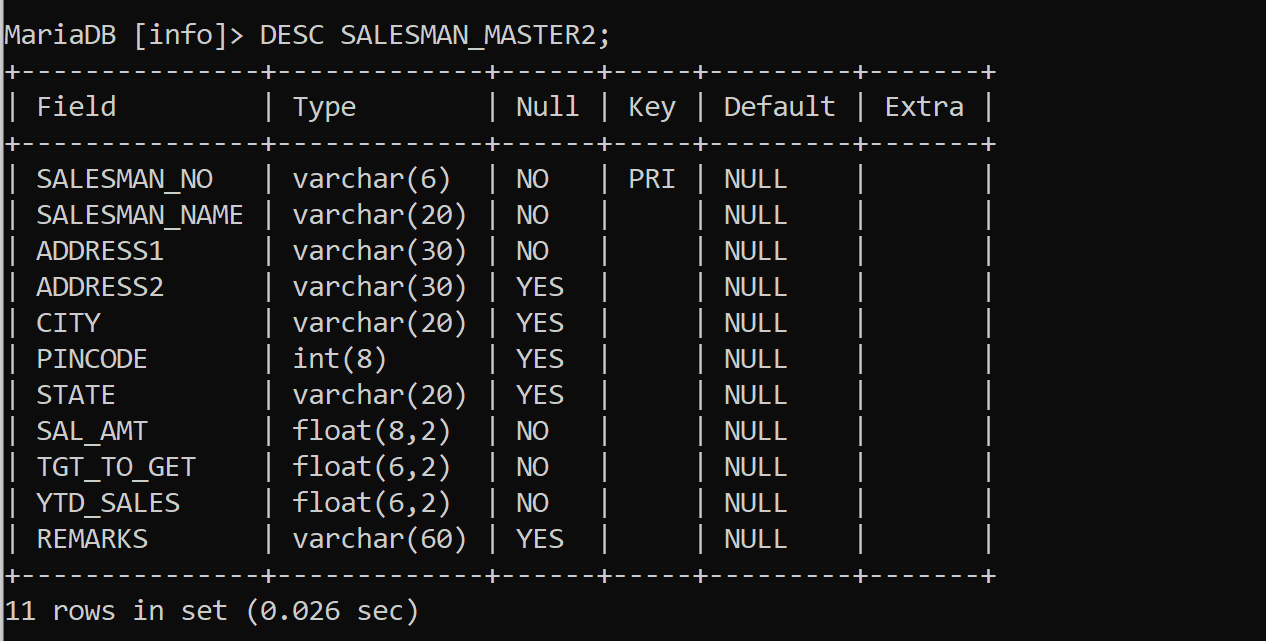
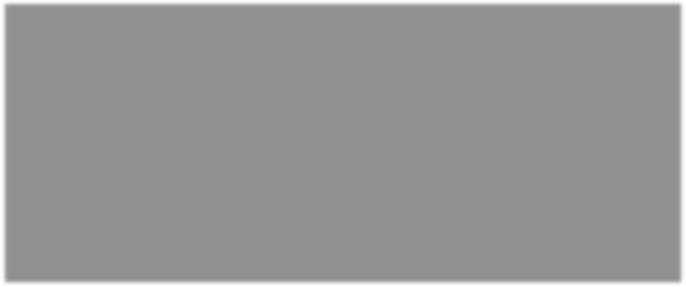
 CONSTRAINT CK\_TGT\_TO\_GET CHECK(TGT\_TO\_GET != 0));



## Schema of the Table:

### Commands used:

* DESCRIBE SALESMAN\_MASTER2 or DESC SALESMAN\_MASTER2;



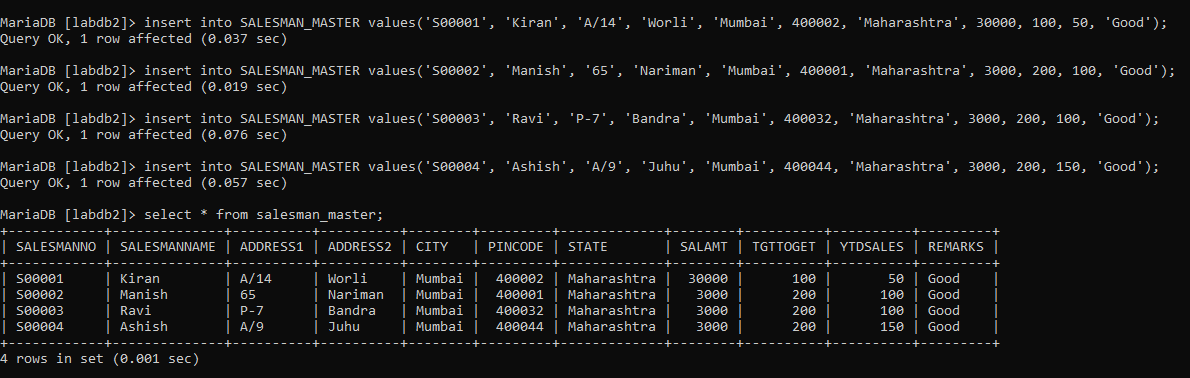
### Inserting Data

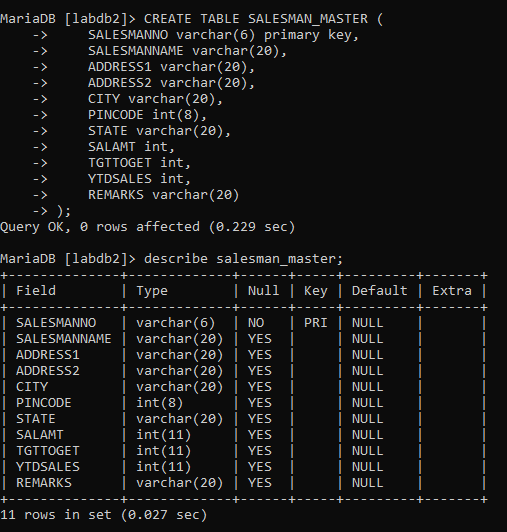
insert into SALESMAN\_MASTER values('S00001', 'Kiran', 'A/14', 'Worli', 'Mumbai', 400002, 'Maharashtra', 30000, 100, 50, 'Good');

insert into SALESMAN\_MASTER values('S00002', 'Manish', '65', 'Nariman', 'Mumbai', 400001, 'Maharashtra', 3000, 200, 100, 'Good');

insert into SALESMAN\_MASTER values('S00003', 'Ravi', 'P-7', 'Bandra', 'Mumbai', 400032, 'Maharashtra', 3000, 200, 100, 'Good');

insert into SALESMAN\_MASTER values('S00004', 'Ashish', 'A/9', 'Juhu', 'Mumbai', 400044, 'Maharashtra', 3000, 200, 150, 'Good');





## 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,

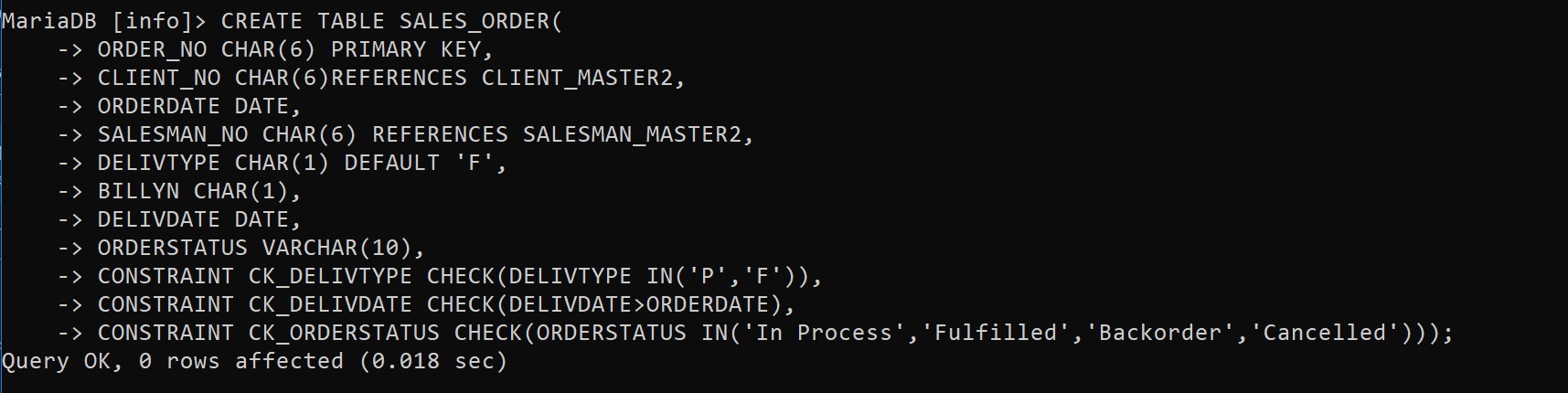
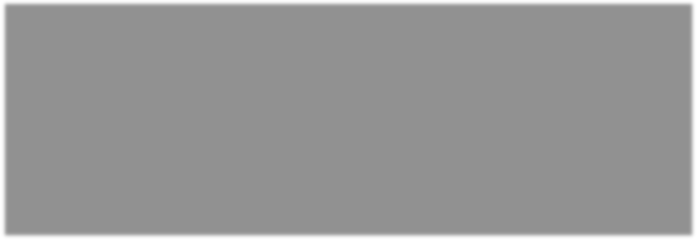
 ORDERSTATUS VARCHAR(10),

 CONSTRAINT CK\_DELIVTYPE CHECK(DELIVTYPE IN('P','F')),

 CONSTRAINT CK\_DELIVDATE CHECK(DELIVDATE>ORDERDATE),

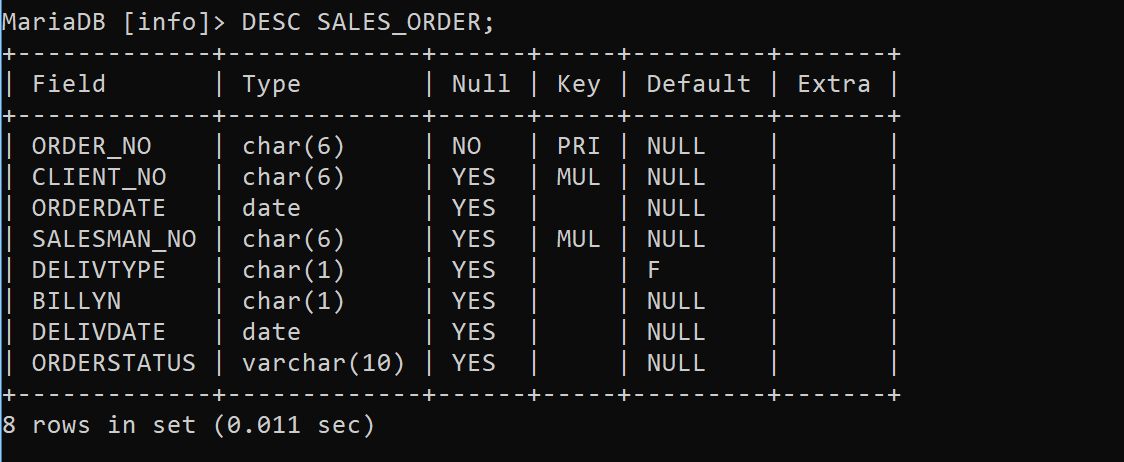
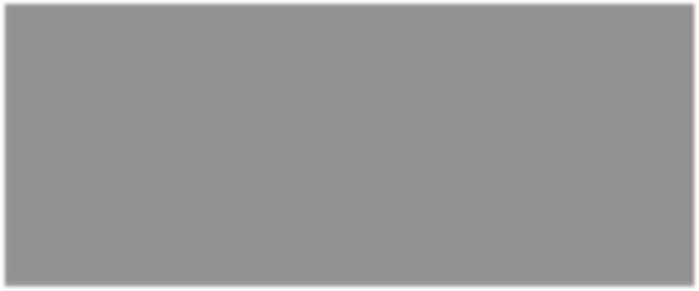
 CONSTRAINT CK\_ORDERSTATUS CHECK(ORDERSTATUS IN('In

Process','Fulfilled','Backorder','Cancelled')));



## Describing Schema of the Table:

 DESCRIBE SALES\_ORDER or DESC SALES\_ORDER;



### Inserting Data

insert into sales\_order values('O19001','C00001', '12-01-10', 'S00001', 'F', 'N', '20-01-10', 'In process');

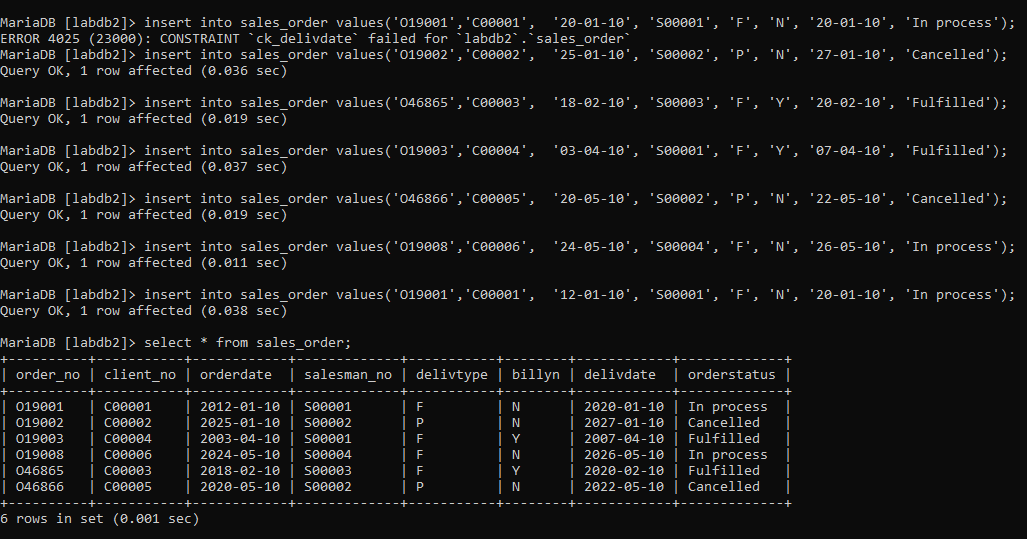
insert into sales\_order values('O19002','C00002', '25-01-10', 'S00002', 'P', 'N', '27-01-10', 'Cancelled');

insert into sales\_order values('O46865','C00003', '18-02-10', 'S00003', 'F', 'Y', '20-02-10', 'Fulfilled');

insert into sales\_order values('O19003','C00004', '03-04-10', 'S00001', 'F', 'Y', '07-04-10', 'Fulfilled');

insert into sales\_order values('O46866','C00005', '20-05-10', 'S00002', 'P', 'N', '22-05-10', 'Cancelled');

insert into sales\_order values('O19008','C00006', '24-05-10', 'S00004', 'F', 'N', '26-05-10', 'In process');



## 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(

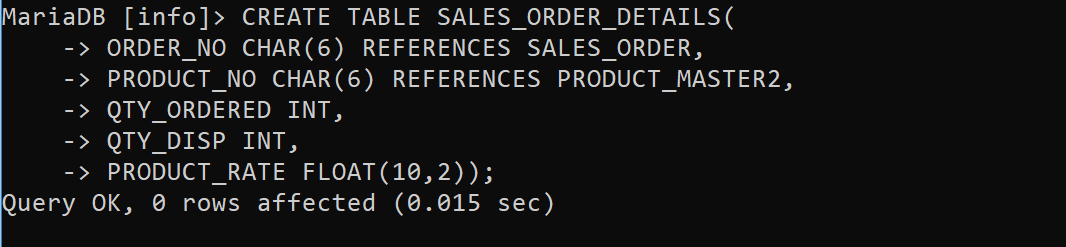
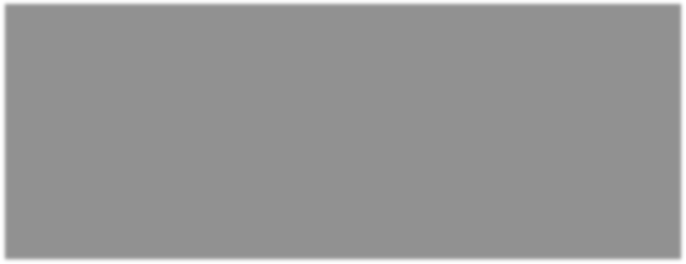
 ORDER\_NO CHAR(6) REFERENCES SALES\_ORDER,

 PRODUCT\_NO CHAR(6) REFERENCES PRODUCT\_MASTER2,

 QTY\_ORDERED INT,

 QTY\_DISP INT,

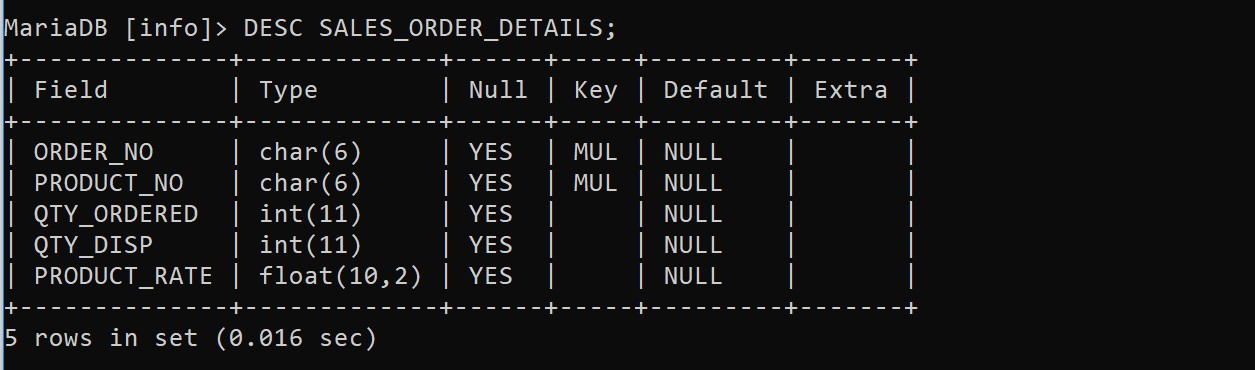
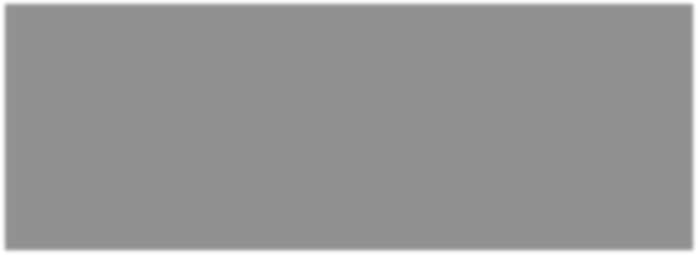
 PRODUCT\_RATE FLOAT(10,2));



## Describing Schema of the Table:

### Commands used:

 DESCRIBE SALES\_ORDER\_DETAILS or DESC SALES\_ORDER\_DETAILS;



### Inserting Data

insert into sales\_order\_details values('O19001','P00001', 4, 4, 525);

insert into sales\_order\_details values('O19001','P07965', 2, 1, 8400);

insert into sales\_order\_details values('O19001','P07885', 2, 1, 5250);

insert into sales\_order\_details values('O19002','P00001', 10, 0, 525);

insert into sales\_order\_details values('O46865','P07868', 3, 3, 3150);

insert into sales\_order\_details values('O46865','P07885', 3, 1, 5250);

insert into sales\_order\_details values('O46865','P00001', 10, 10, 525);

insert into sales\_order\_details values('O46865','P03453', 4, 4, 1050);

insert into sales\_order\_details values('O19003','P03453', 2, 2, 1050);

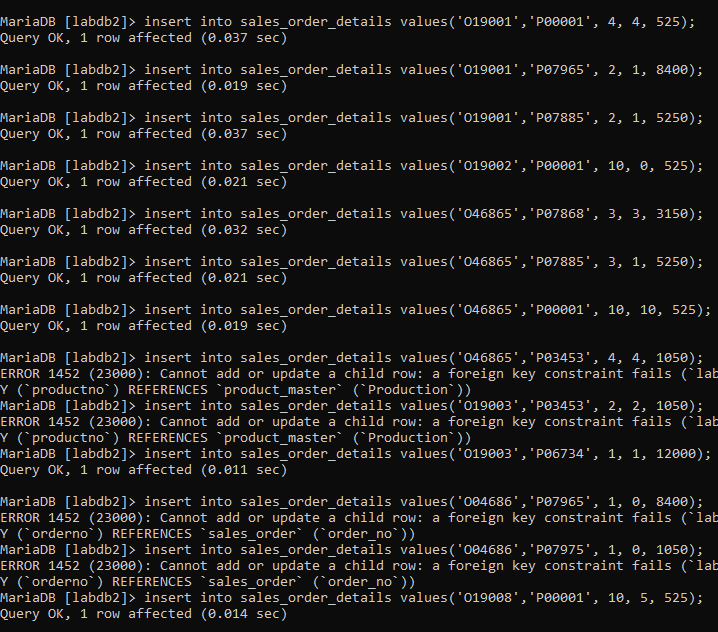
insert into sales\_order\_details values('O19003','P06734', 1, 1, 12000);

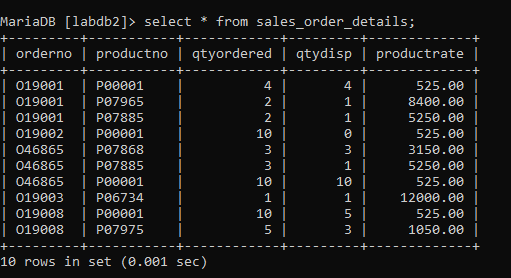
insert into sales\_order\_details values('O04686','P07965', 1, 0, 8400);

insert into sales\_order\_details values('O04686','P07975', 1, 0, 1050);

insert into sales\_order\_details values('O19008','P00001', 10, 5, 525);

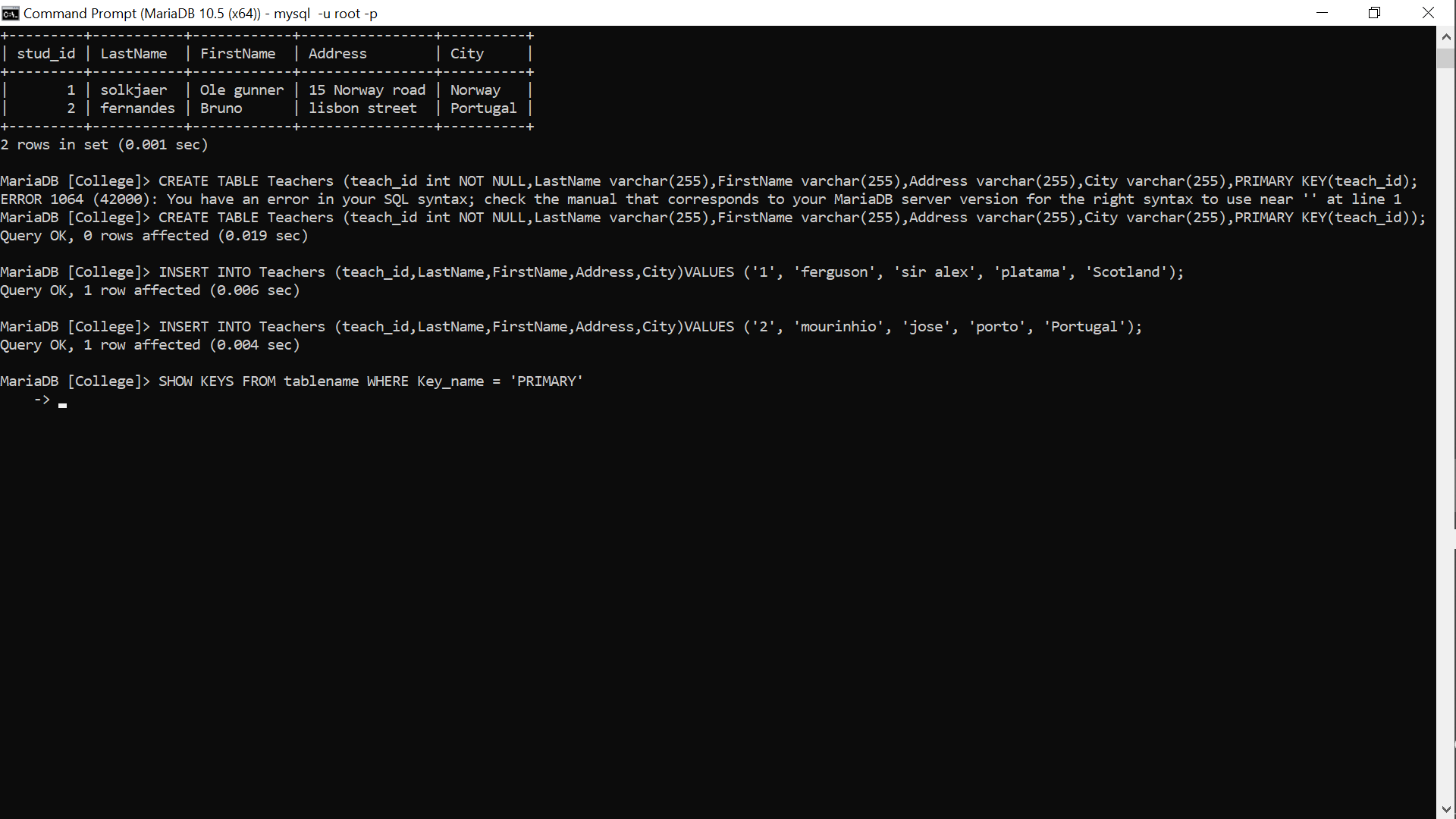
insert into sales\_order\_details values('O19008','P07975', 5, 3, 1050);



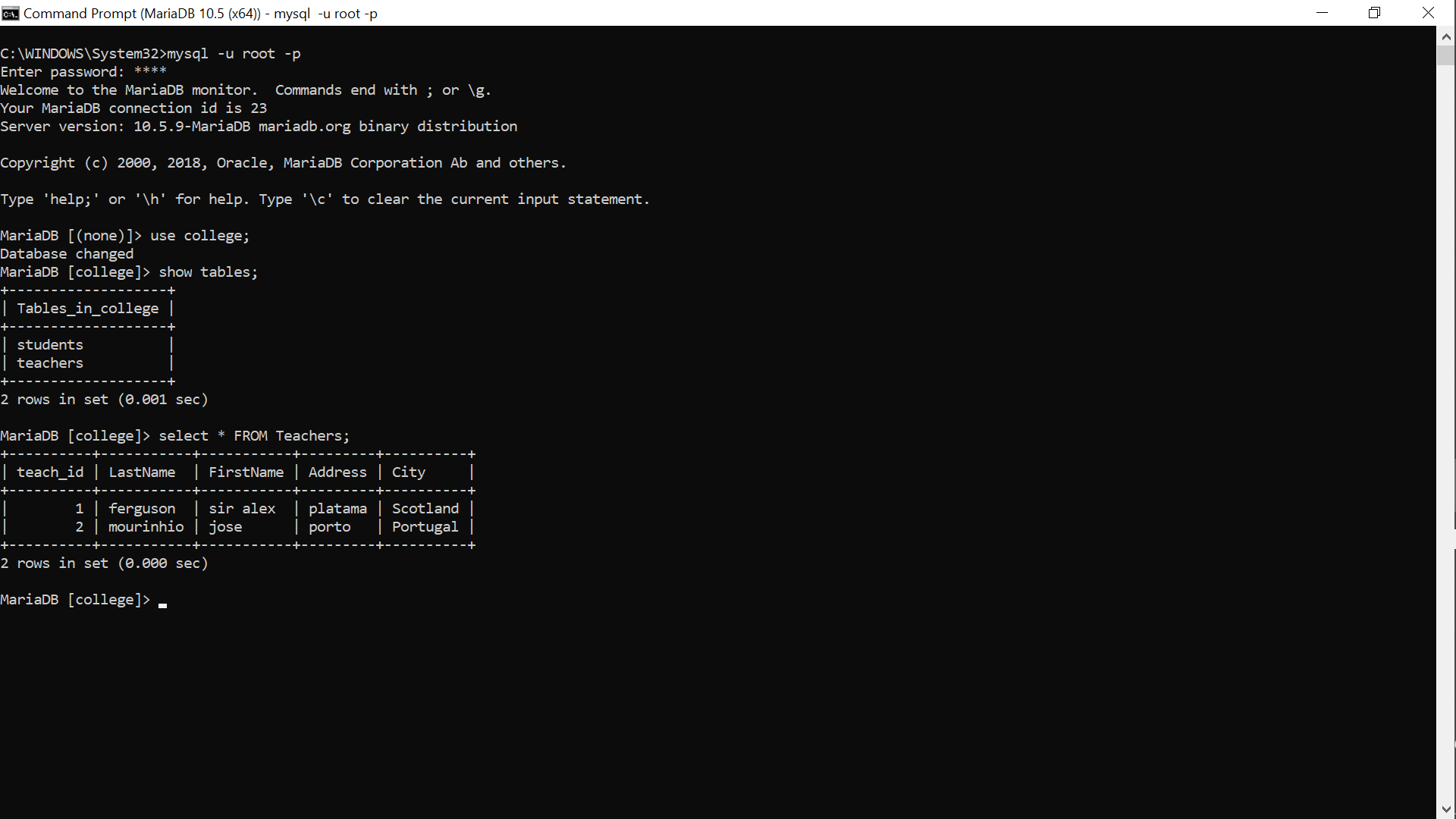


## Database already created named college;

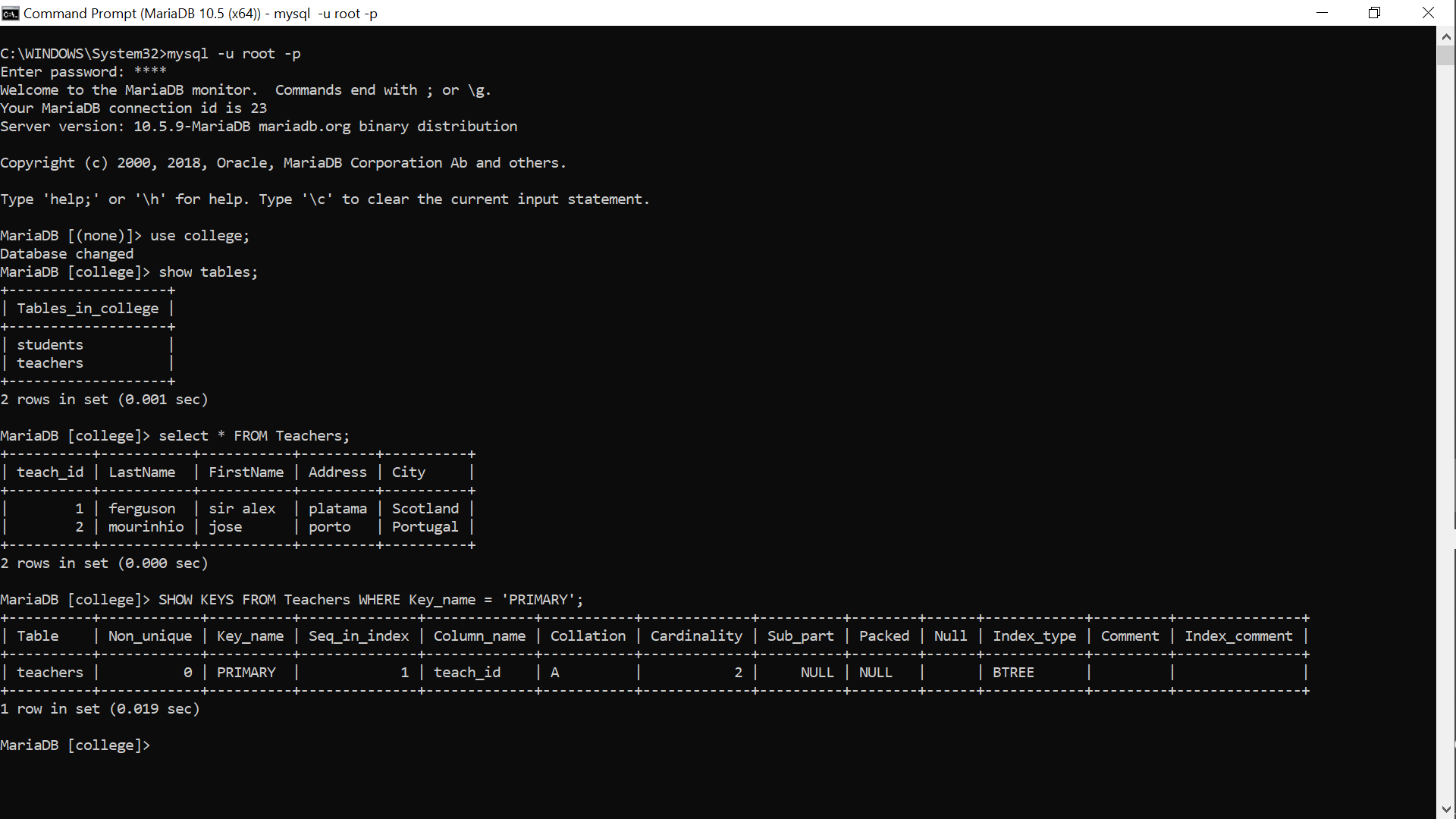
1. use College;
2. CREATE TABLE Teachers (teach\_id int NOT NULL,LastName varchar(255),FirstName varchar(255),Address varchar(255),City varchar(255),PRIMARY KEY(teach\_id);
3. INSERT INTO Teachers (teach\_id,LastName,FirstName,Address,City)VALUES ('1', 'ferguson', 'sir alex', 'platama', 'Scotland');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



1. show tables;
2. SELECT \* FROM TABLES;



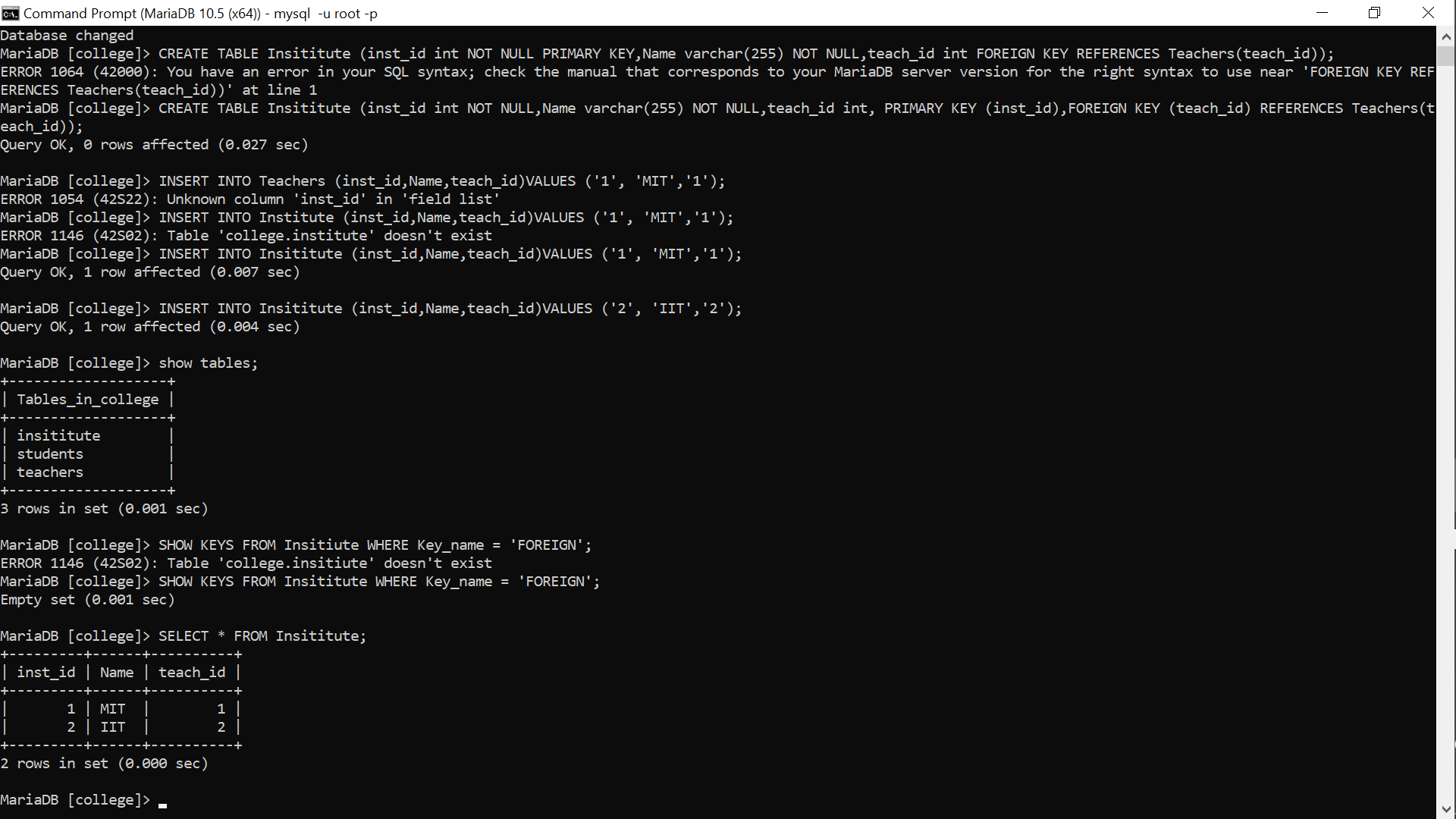
1. SHOW KEYS FROM Teachers WHERE Key\_name = 'PRIMARY';’



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

**Now For FOREIGN KEY**

1. 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));
2. INSERT INTO Teachers (inst\_id,Name,teach\_id)VALUES ('1', 'MIT','1');
3. INSERT INTO Insititute (inst\_id,Name,teach\_id)VALUES ('2', 'IIT','2');
4. SELECT \* FROM Insititute;



# VIVA QUESTIONS:

## Que1. What are different Constraints in SQL?

Ans.

-NOT NULL Constraint restricts a column from having a NULL value. Once NOT NULL

constraint is applied to a column, you cannot pass a null value to that column.

-UNIQUE Constraint ensures that a field or column will only have unique values. A

-UNIQUE constraint field will not have duplicate data.

-Primary key Constraint uniquely identifies each record in a database. A Primary Key

must contain unique value and it must not contain null value.

-Foreign key Constraint is also used to restrict actions that would destroy links between

tables. Foreign key is used to relate two tables.

-CHECK Constraint is used to restrict the value of a column between a range. It performs

check on the values, before storing them into the database.

-Default Constraint is used to assign a default value to a column when no value is

specified. Index Constraint is used to create and retrieve data from the database very quickly. An Index can be created by using a single or group of columns in a table.

## Que2. What is the purpose of Null Constraint?

Ans.

This implies that the column need not receive any value during insert or update

operations. a column can hold NULL values. The NULL constraint is logically equivalent to omitting the NOT NULL constraint from the column definition. Once NULL constraint is applied to a column, you can pass a null value to that column.

## Que 3. What is Index Constraint?

Ans.

Indexes are used to retrieve data from the database more quickly than otherwise. The users cannot see the indexes, they are just used to speed up searches/queries. When the index is created, it is assigned a ROWID for each row before it sorts out the data. Proper indexes are good for performance in large databases.

## Que 4. What is the purpose of Default Constraint?

Ans.

The DEFAULT constraint provides a default value to a column when the INSERT INTO statement does not provide a specific value. It is used to provide a default value for a column. The default value will be added to all new records IF no other value is specified.