

DBMS – LAB -03

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SECTION: C

TASK: (LAB EXERCISES)

SQL COMMANDS

1. PRIMARY KEYS

2. FOREIGN KEYS

CREATING TABLE CUSTOMER:

```
create table customers(  
CustomerID Int,  
Dateofbirth date,  
Gender varchar(5),  
CustomerName varchar(30),  
City varchar(20),  
country varchar(10)  
);
```

CREATING TABLE PRODUCTS:

```
create table products(  
CustomerID Int,  
ProductID int,  
ProductName varchar(20),  
Availability varchar(20),  
Price int);
```

AND INSERTED THE VALUES GIVEN IN ASSIGNMENT AND ADDED SOME ROWS FOR THE REQUIREMENTS OF THE QUESTION.

1. Alter table and set CustomerID in Customers table as primary key

```
mysql> ALTER TABLE Customers ADD PRIMARY KEY (CustomerID);
Query OK, 0 rows affected (0.24 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> describe Customers;
```

Field	Type	Null	Key	Default	Extra
CustomerID	int	NO	PRI	NULL	
Dateofbirth	date	YES		NULL	
Gender	varchar(5)	YES		NULL	
CustomerName	varchar(30)	YES		NULL	
City	varchar(20)	YES		NULL	
country	varchar(10)	YES		NULL	

```
6 rows in set (0.03 sec)

mysql> _
```

2. Set ProductID in the products table as Foreignkey which references CustomerID in Customers table.

```
MySQL 8.0 Command Line Client

mysql> ALTER TABLE Products ADD FOREIGN KEY (ProductID) REFERENCES Customers(CustomerID);
Query OK, 9 rows affected (0.21 sec)
Records: 9  Duplicates: 0  Warnings: 0

mysql> DESCRIBE Products;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| CustomerID | int       | YES  |     | NULL    |       |
| ProductID  | int       | YES  | MUL | NULL    |       |
| ProductName | varchar(20) | YES  |     | NULL    |       |
| Availability | varchar(20) | YES  |     | NULL    |       |
| Price      | int       | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> _
```

3. Set a default value for Availability as "YES;

MySQL 8.0 Command Line Client

— □ ×

```
mysql> ALTER TABLE Products ALTER Availability SET DEFAULT 'yes';
```

```
Query OK, 0 rows affected (0.03 sec)
```

```
Records: 0 Duplicates: 0 Warnings: 0
```

```
mysql> DESCRIBE Products;
```

Field	Type	Null	Key	Default	Extra
CustomerID	int	YES		NULL	
ProductID	int	YES	MUL	NULL	
ProductName	varchar(20)	YES		NULL	
Availability	varchar(20)	YES		yes	
Price	int	YES		NULL	

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

```
mysql>
```

4. Selects all customers with a CustomerName that have "or" in any position

```
Select MySQL 8.0 Command Line Client

mysql> SELECT * FROM Customers WHERE CustomerName LIKE '%or%';
+-----+-----+-----+-----+-----+-----+
| CustomerID | Dateofbirth | Gender | CustomerName | City | country |
+-----+-----+-----+-----+-----+-----+
|          1233 | 1999-12-10 | m      | jorb         | Delhi | India    |
+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> SELECT * FROM Customers WHERE CustomerName LIKE '%oh%';
+-----+-----+-----+-----+-----+-----+
| CustomerID | Dateofbirth | Gender | CustomerName | City | country |
+-----+-----+-----+-----+-----+-----+
|          20 | 1966-03-29 | f      | johny        | paris | france   |
|         1000 | 1989-10-10 | m      | John         | Delhi | India    |
|         2004 | 1966-03-29 | f      | johny        | paris | france   |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> _
```

5. Insert CustomerID =2505 in Products table (Assume CustomerID=2505 is not there in Customers table)

```
MySQL 8.0 Command Line Client
mysql> insert into products(CustomerID) values(2505);
Query OK, 1 row affected (0.01 sec)

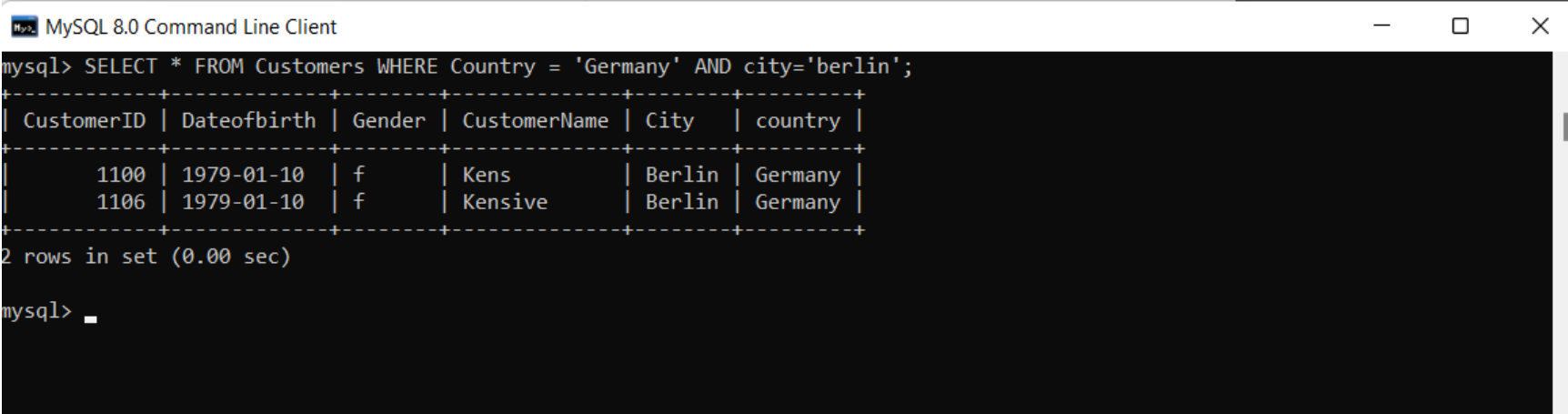
mysql> select * from products;
```

CustomerID	ProductID	ProductName	Availability	Price
1	1000	pen	yes	100
2	1100	toy	no	10
3	2505	pencil	yes	30
4	1205	duck	yes	50
5	1500	pearl	no	60
6	200	hat	yes	10
7	2505	pot	no	90
8	159	book	yes	100
9	1100	chalk	no	10
2505	NULL	NULL	yes	NULL

```
10 rows in set (0.00 sec)

mysql> _
```

6. Select all fields from "Customers" where country is "Germany" and city is "Berlin".



```
mysql> SELECT * FROM Customers WHERE Country = 'Germany' AND city='berlin';
```

CustomerID	Dateofbirth	Gender	CustomerName	City	country
1100	1979-01-10	f	Kens	Berlin	Germany
1106	1979-01-10	f	Kensive	Berlin	Germany

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

```
mysql> _
```


7. Selects all fields from "Customers" where the country is not "Germany".

```
MySQL 8.0 Command Line Client
mysql> SELECT * FROM Customers WHERE Country NOT IN ('Germany');
+-----+-----+-----+-----+-----+-----+
| CustomerID | Dateofbirth | Gender | CustomerName | City | country |
+-----+-----+-----+-----+-----+-----+
| 12 | 1996-11-10 | m | Monk | Hyderabad | India |
| 15 | 1972-08-10 | f | mars | goa | India |
| 20 | 1966-03-29 | f | johny | paris | france |
| 125 | 1999-12-10 | m | Maggie | Delhi | India |
| 150 | 1991-12-10 | f | don | Oslo | norway |
| 159 | 1999-12-10 | m | vamra | allahabadh | India |
| 200 | 1968-11-29 | f | lambie | paris | france |
| 1000 | 1989-10-10 | m | John | Delhi | India |
| 1105 | 1989-10-10 | m | manish | Delhi | India |
| 1205 | 1998-11-10 | m | Monk | Delhi | India |
| 1233 | 1999-12-10 | m | jorb | Delhi | India |
| 1259 | 1999-12-10 | m | Maggie | Delhi | India |
| 1500 | 1999-12-10 | m | rahul | alab | India |
| 1507 | 1992-08-10 | f | mars | Oslo | norway |
| 2004 | 1966-03-29 | f | johny | paris | france |
+-----+-----+-----+-----+-----+-----+
15 rows in set (0.00 sec)

mysql>
```

8. Select all records where the value of the City column starts with the letter "a".

(these cities are not given in assignment I inserted manually)

```
MySQL 8.0 Command Line Client

mysql> SELECT * FROM Customers WHERE city LIKE 'a%';
+-----+-----+-----+-----+-----+-----+
| CustomerID | Dateofbirth | Gender | CustomerName | City      | country |
+-----+-----+-----+-----+-----+-----+
| 159        | 1999-12-10  | m      | vamra        | allahabadh | India   |
| 1500       | 1999-12-10  | m      | rahul        | alab       | India   |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> _
```

9. Select all records where the value of the City column starts with letter "a" and ends with the letter "b".

(this city is not given in assignment I inserted manually)

A screenshot of the MySQL 8.0 Command Line Client window. The window title is "MySQL 8.0 Command Line Client". The command prompt shows the query: `mysql> SELECT * FROM Customers WHERE city LIKE 'a%b';`. The result is displayed in a table format with columns: CustomerID, Dateofbirth, Gender, CustomerName, City, and country. The table contains one row with the following data: CustomerID 1500, Dateofbirth 1999-12-10, Gender m, CustomerName rahul, City alab, and country India. Below the table, it says "1 row in set (0.00 sec)". The prompt `mysql>` is shown at the bottom.

```
mysql> SELECT * FROM Customers WHERE city LIKE 'a%b';
+-----+-----+-----+-----+-----+
| CustomerID | Dateofbirth | Gender | CustomerName | City | country |
+-----+-----+-----+-----+-----+
| 1500 | 1999-12-10 | m | rahul | alab | India |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>
```

10. Select all records where the value of the City column does NOT start with the letter "a".

```
MySQL 8.0 Command Line Client

mysql> SELECT * FROM Customers WHERE NOT city LIKE 'a%';
```

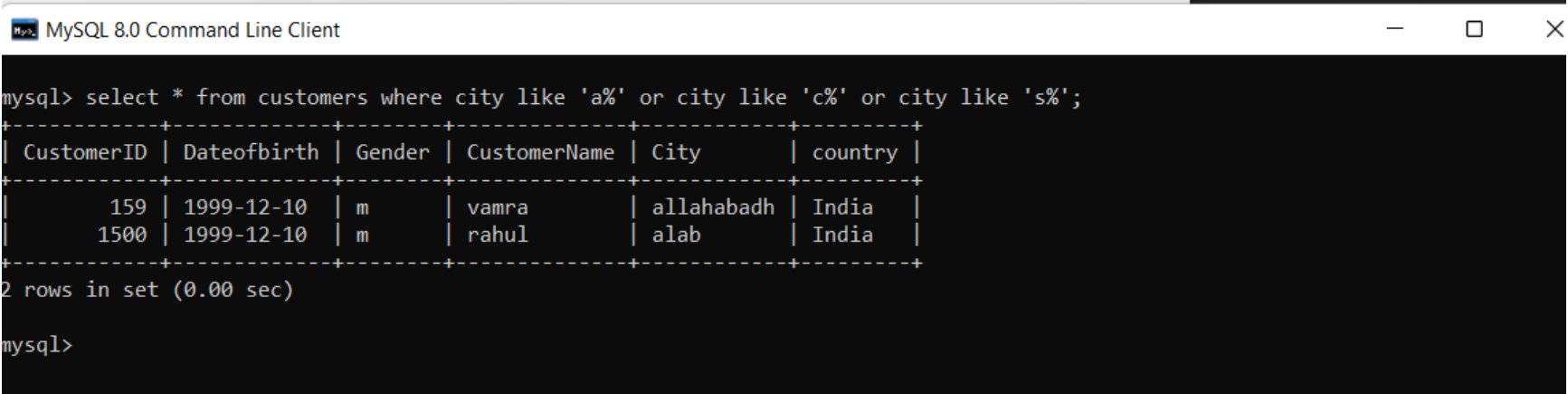
CustomerID	Dateofbirth	Gender	CustomerName	City	country
12	1996-11-10	m	Monk	Hyderabad	India
15	1972-08-10	f	mars	goa	India
20	1966-03-29	f	johney	paris	france
25	1944-03-10	f	mans	Hamburg	Germany
125	1999-12-10	m	Maggie	Delhi	India
150	1991-12-10	f	don	Oslo	norway
200	1968-11-29	f	lambie	paris	france
1000	1989-10-10	m	John	Delhi	India
1100	1979-01-10	f	Kens	Berlin	Germany
1105	1989-10-10	m	manish	Delhi	India
1106	1979-01-10	f	Kensive	Berlin	Germany
1205	1998-11-10	m	Monk	Delhi	India
1233	1999-12-10	m	jorb	Delhi	India
1259	1999-12-10	m	Maggie	Delhi	India
1507	1992-08-10	f	mars	Oslo	norway
2004	1966-03-29	f	johney	paris	france
2505	1960-03-10	f	Kelvin	Hamburg	Germany

```
17 rows in set (0.00 sec)

mysql> _
```

11. Select all records where the first letter of the City is an "a" or a "c" or an "s".

(these cities are not given in assignment I inserted manually)



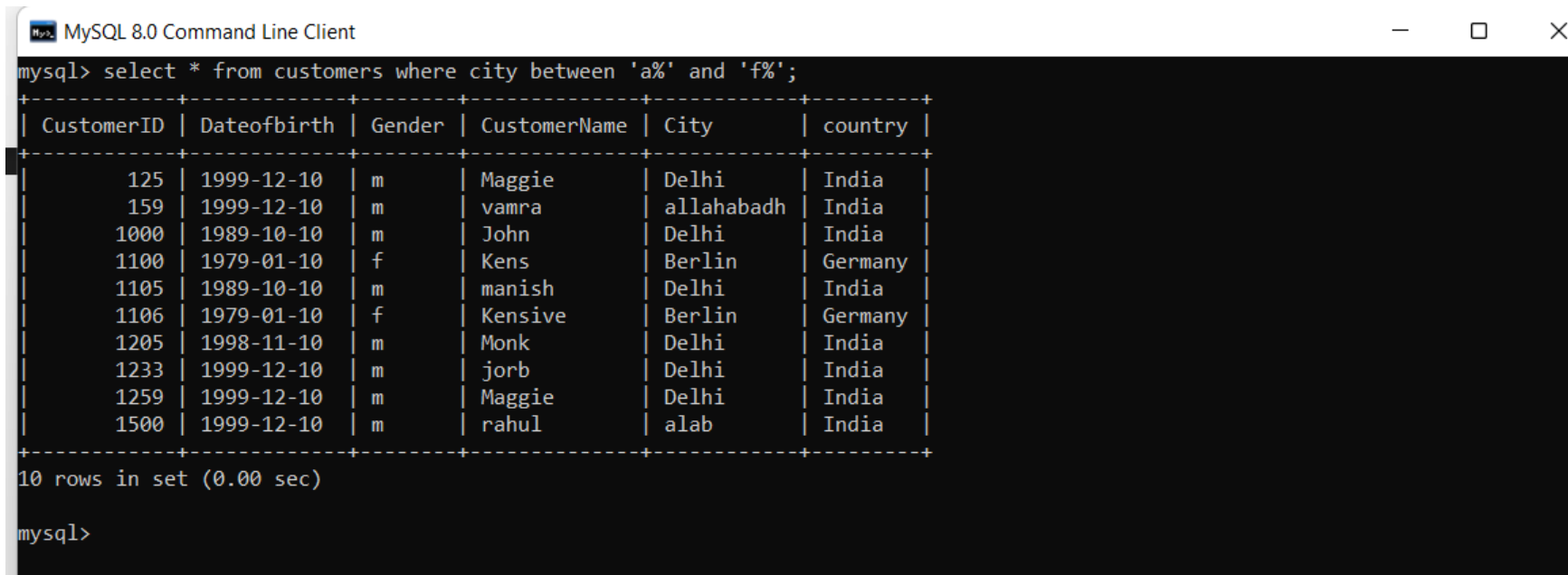
```
mysql> select * from customers where city like 'a%' or city like 'c%' or city like 's%';
```

CustomerID	Dateofbirth	Gender	CustomerName	City	country
159	1999-12-10	m	vamra	allahabadh	India
1500	1999-12-10	m	rahul	alab	India

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

```
mysql>
```

12. Select all records where the first letter of the City starts with anything from an "a" to an "f".



```
mysql> select * from customers where city between 'a%' and 'f%';
```

CustomerID	Dateofbirth	Gender	CustomerName	City	country
125	1999-12-10	m	Maggie	Delhi	India
159	1999-12-10	m	vamra	allahabadh	India
1000	1989-10-10	m	John	Delhi	India
1100	1979-01-10	f	Kens	Berlin	Germany
1105	1989-10-10	m	manish	Delhi	India
1106	1979-01-10	f	Kensive	Berlin	Germany
1205	1998-11-10	m	Monk	Delhi	India
1233	1999-12-10	m	jorb	Delhi	India
1259	1999-12-10	m	Maggie	Delhi	India
1500	1999-12-10	m	rahul	alab	India

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

```
mysql>
```

13. Select all the records where the Country is NOT "Norway" and NOT "France".

```
MySQL 8.0 Command Line Client
mysql> SELECT * FROM Customers WHERE country NOT IN ('Norway','France');
+-----+-----+-----+-----+-----+-----+
| CustomerID | Dateofbirth | Gender | CustomerName | City | country |
+-----+-----+-----+-----+-----+-----+
| 12 | 1996-11-10 | m | Monk | Hyderabad | India |
| 15 | 1972-08-10 | f | mars | goa | India |
| 25 | 1944-03-10 | f | mans | Hamburg | Germany |
| 125 | 1999-12-10 | m | Maggie | Delhi | India |
| 150 | 1991-12-10 | f | don | Oslo | norway |
| 159 | 1999-12-10 | m | vamra | allahabadh | India |
| 1000 | 1989-10-10 | m | John | Delhi | India |
| 1100 | 1979-01-10 | f | Kens | Berlin | Germany |
| 1105 | 1989-10-10 | m | manish | Delhi | India |
| 1106 | 1979-01-10 | f | Kensive | Berlin | Germany |
| 1205 | 1998-11-10 | m | Monk | Delhi | India |
| 1233 | 1999-12-10 | m | jorb | Delhi | India |
| 1259 | 1999-12-10 | m | Maggie | Delhi | India |
| 1500 | 1999-12-10 | m | rahul | alab | India |
| 1507 | 1992-08-10 | f | mars | Oslo | norway |
| 2505 | 1960-03-10 | f | Kelvin | Hamburg | Germany |
+-----+-----+-----+-----+-----+-----+
16 rows in set (0.00 sec)

mysql>
```

14. Select all the records where the value of the ProductName column is alphabetically between 'Hat' and 'Pen'.

```
MySQL 8.0 Command Line Client
mysql> SELECT * FROM products WHERE productname BETWEEN 'Hat' AND 'Pen' ORDER BY productname;
+-----+-----+-----+-----+-----+
| CustomerID | ProductID | ProductName | Availability | Price |
+-----+-----+-----+-----+-----+
| 6 | 200 | hat | yes | 10 |
| 5 | 1500 | pearl | no | 60 |
| 1 | 1000 | pen | yes | 100 |
+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)

mysql> _
```


15. List the customer names if it finds any records in the products table that price = 100:

```
MySQL 8.0 Command Line Client

mysql> SELECT Products.productID,customers.customername,products.productname,products.price FROM products JOIN customers
-> ON Products.productID=customers.customerID
-> WHERE price =100
-> ORDER BY customername;
+-----+-----+-----+-----+
| productID | customername | productname | price |
+-----+-----+-----+-----+
|      1000 | John        | pen         |    100 |
|      159  | vamra       | book        |    100 |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

16. List the customer names if it finds all records in the products table that price = 1000:

```
MySQL 8.0 Command Line Client

mysql> SELECT Customername FROM customers WHERE exists (select productid from products where products.productid = customers.customerid AND price =1000);
Empty set (0.01 sec)

mysql> _
```

17. Drop primary and foreign key constraints from both the tables.

Before dropping foreign key we should find it's constraint name

And using constraint name we can drop foreign key.

```
MySQL 8.0 Command Line Client
mysql> select COLUMN_NAME,CONSTRAINT_NAME,REFERENCED_COLUMN_NAME,REFERENCED_TABLE_NAME from information_schema.KEY_COLUMN_USAGE where TABLE_NAME ='products';
+-----+-----+-----+-----+
| COLUMN_NAME | CONSTRAINT_NAME | REFERENCED_COLUMN_NAME | REFERENCED_TABLE_NAME |
+-----+-----+-----+-----+
| ProductID   | products_ibfk_1 | CustomerID              | customers              |
+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql> ALTER TABLE products DROP FOREIGN KEY products_ibfk_1;
Query OK, 0 rows affected (0.04 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select COLUMN_NAME,CONSTRAINT_NAME,REFERENCED_COLUMN_NAME,REFERENCED_TABLE_NAME from information_schema.KEY_COLUMN_USAGE where TABLE_NAME ='products';
Empty set (0.00 sec)

mysql>
```

Now if we check the foreign key is dropped (in the below figure)

```
MySQL 8.0 Command Line Client
mysql> select COLUMN_NAME,CONSTRAINT_NAME,REFERENCED_COLUMN_NAME,REFERENCED_TABLE_NAME from information_schema.KEY_COLUMN_USAGE where TABLE_NAME ='products';
+-----+-----+-----+-----+
| COLUMN_NAME | CONSTRAINT_NAME | REFERENCED_COLUMN_NAME | REFERENCED_TABLE_NAME |
+-----+-----+-----+-----+
| ProductID   | products_ibfk_1 | CustomerID             | customers              |
+-----+-----+-----+-----+
1 row in set (0.01 sec)

mysql> ALTER TABLE products DROP FOREIGN KEY products_ibfk_1;
Query OK, 0 rows affected (0.04 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> select COLUMN_NAME,CONSTRAINT_NAME,REFERENCED_COLUMN_NAME,REFERENCED_TABLE_NAME from information_schema.KEY_COLUMN_USAGE where TABLE_NAME ='products';
Empty set (0.00 sec)

mysql> ALTER TABLE Customers DROP PRIMARY KEY;
Query OK, 19 rows affected (0.11 sec)
Records: 19 Duplicates: 0 Warnings: 0

mysql> DESCRIBE Customers;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| CustomerID | int       | NO   |     | NULL    |       |
| Dateofbirth | date      | YES  |     | NULL    |       |
| Gender      | varchar(5) | YES  |     | NULL    |       |
| CustomerName | varchar(30) | YES  |     | NULL    |       |
| City        | varchar(20) | YES  |     | NULL    |       |
| country     | varchar(10) | YES  |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.01 sec)

mysql>
```

18. Delete the record of all customers who are from country Brazil and city Victoria.

```
MySQL 8.0 Command Line Client
mysql> DELETE FROM customers WHERE country ='Brazil' AND city ='Victoria';
Query OK, 0 rows affected (0.00 sec)

mysql> select * from customers;
```

CustomerID	Dateofbirth	Gender	CustomerName	City	country
12	1996-11-10	m	Monk	Hyderabad	India
15	1972-08-10	f	mars	goa	India
20	1966-03-29	f	johny	paris	france
25	1944-03-10	f	mans	Hamburg	Germany
125	1999-12-10	m	Maggie	Delhi	India
150	1991-12-10	f	don	Oslo	norway
159	1999-12-10	m	vamra	allahabadh	India
200	1968-11-29	f	lambie	paris	france
1000	1989-10-10	m	John	Delhi	India
1100	1979-01-10	f	Kens	Berlin	Germany
1105	1989-10-10	m	manish	Delhi	India
1106	1979-01-10	f	Kensive	Berlin	Germany
1205	1998-11-10	m	Monk	Delhi	India
1233	1999-12-10	m	jorb	Delhi	India
1259	1999-12-10	m	Maggie	Delhi	India
1500	1999-12-10	m	rahul	alab	India
1507	1992-08-10	f	mars	Oslo	norway
2004	1966-03-29	f	johny	paris	france
2505	1960-03-10	f	Kelvin	Hamburg	Germany

```
19 rows in set (0.00 sec)

mysql>
```