Practical No.: 1

Aim: To implement Basic SQL commands and to access & modify Data using SQL. Create and populate database using Data Definition Language (DDL) and DML Commands.

Theory:

Data Definition Language (DDL)

DDL or Data Definition Language actually consists of the SQL commands that can be used to define the database schema. It simply deals with descriptions of the database schema and is used to create and modify the structure of database objects in the database.DDL is a set of SQL commands used to create, modify, and delete database structures but not data. These commands are normally not used by a general user, who should be accessing the database via an application.

List of DDL commands:

- CREATE: This command is used to create the database or its objects (like table, index, function, views, store procedure, and triggers).
  Syntax(for creating the data base):
  ```
  CREATE DATABASE database_name;
  ```
- DROP: This command is used to delete objects from the database.
  Syntax(for deleting the data base):
  ```
  DROP DATABASE database_name;
  ```
- ALTER: This is used to alter the structure of the database or used to modify an existing table, such as adding, modifying, or dropping columns, constraints, or indexes.
  Syntax(for adding the column in the table):
  ```
  ALTER TABLE table_name
  ADD column_name datatype;
  ```
- TRUNCATE: This is used to remove all records from a table, including all spaces allocated for the records are removed.
  Syntax:
  ```
  TRUNCATE TABLE table_name;
  ```
- COMMENT: This is used to add comments to the data dictionary. There are two common ways to write comments in SQL: single-line comments and multi-line comments.

  1.Single-Line Comment:

  Syntax: -- This is a single-line comment

  2.Multi-Line Comment:

  Syntax:
  ```
  /*
   This is a multi-line comment.
  It can span across multiple lines of code.
  ```

*/

- RENAME: This is used to rename an object existing in the database.
  Syntax(for renaming a table):
  ```
  RENAME old_table_name TO new_table_name;
  ```

Data Manipulation Language (DML)

The SQL commands that deals with the manipulation of data present in the database belong to DML or Data Manipulation Language and this includes most of the SQL statements. It is the component of the SQL statement that controls access to data and to the database. Basically, DCL statements are grouped with DML statements.

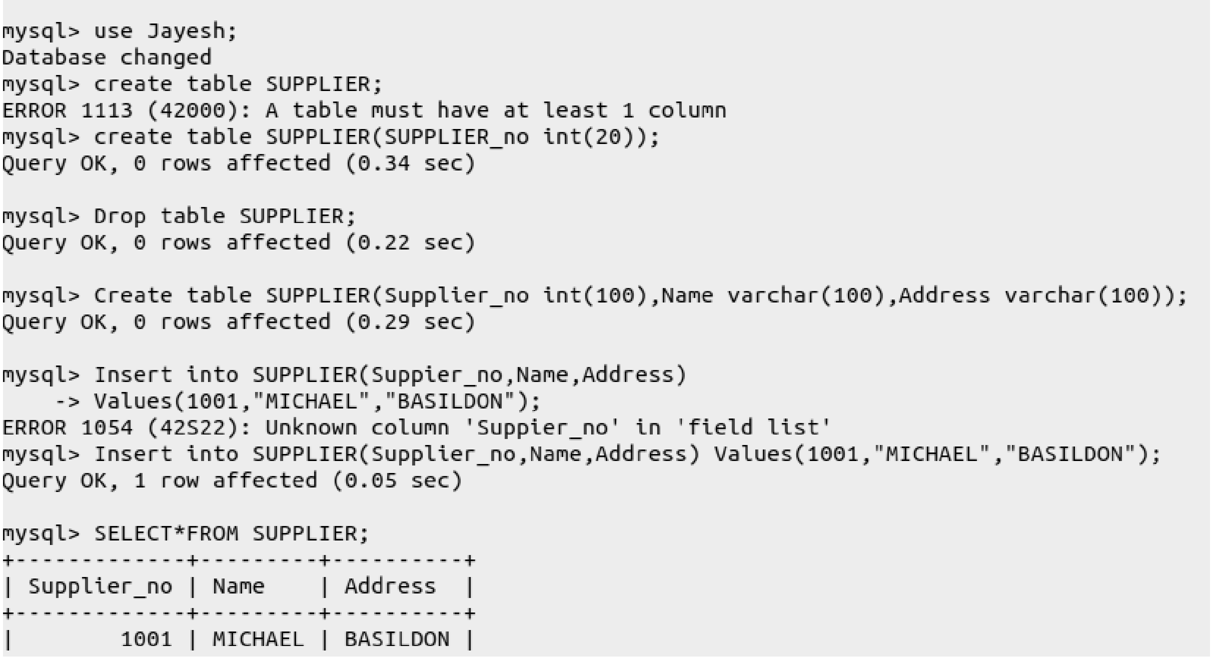
List of DML commands:

- SELECT: Retrieves data from one or more tables based on specified criteria.
  Syntax:
  ```
  SELECT column1, column2,… FROM table_name WHERE condition;
  ```
- INSERT : It is used to insert data into a table.
  Syntax:
  ```
  INSERT INTO table_name(column1, column2, ...) VALUES(value1, value2, ...);
  ```
- UPDATE: It is used to update existing data within a table.
  Syntax:
  ```
  UPDATE table_name SET column1 = value1, column2 = value2, ... WHERE condition;
  ```
- DELETE : It is used to delete records from a database table.
  Syntax:
  ```
  DELETE FROM table_name WHERE condition;
  ```
- LOCK: Table control concurrency.
  Syntax(for Shared lock):
  ```
  LOCK TABLE table_name IN SHARE MODE;
  ```
- CALL: Call a PL/SQL or JAVA subprogram.
  Syntax:
  ```
  -- Syntax for calling a stored procedure
          CALL procedure_name(parameters);
  -- Syntax for calling a user-defined function
          SELECT function_name(parameters);
  ```
- SAVEPOINT: Creates a point within a transaction to which you can later roll back.
  Syntax:
  ```
  SAVEPOINT savepoint_name;
  ```
- EXPLAIN PLAN: It describes the access path to data.
  Syntax:
  ```
  EXPLAIN PLAN FOR your_query_here;
  ```

Queries: Create following tables and insert given values:

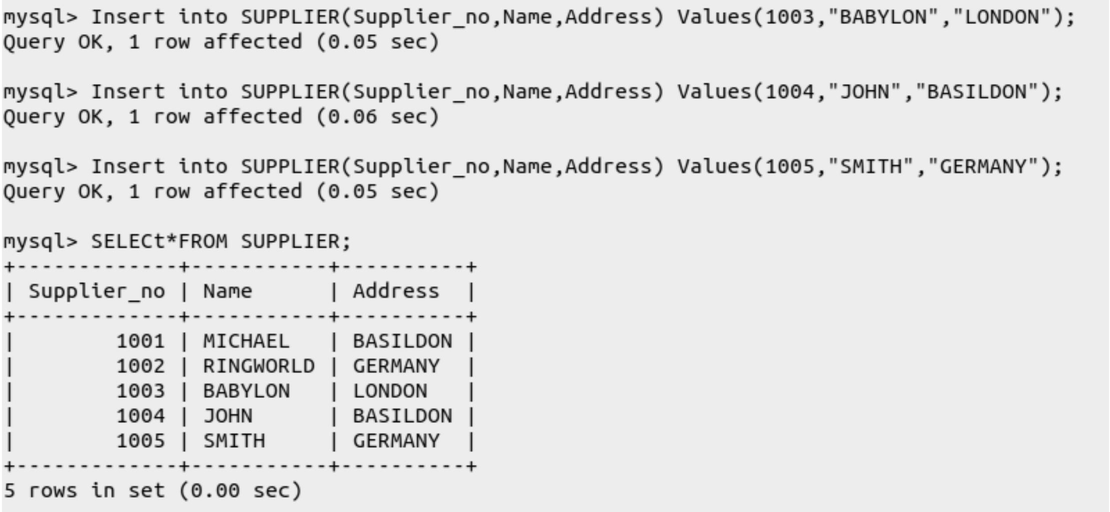
SUPPLIER

CREATE TABLE AND INSERT VALUE COMMANDS:



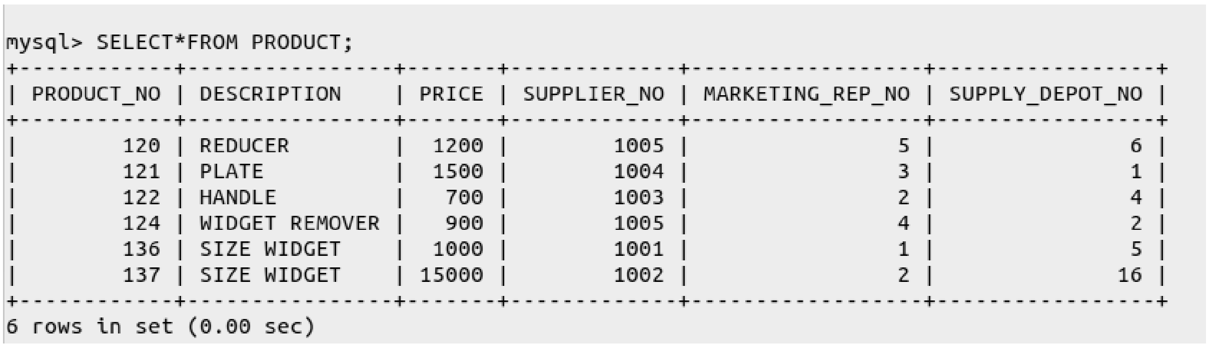
```
mysql> use Jayesh;
Database changed
mysql> create table SUPPLIER;
ERROR 1113 (42000): A table must have at least 1 column
mysql> create table SUPPLIER(SUPPLIER_no int(20));
Query OK, 0 rows affected (0.34 sec)

mysql> Drop table SUPPLIER;
Query OK, 0 rows affected (0.22 sec)

mysql> Create table SUPPLIER(Supplier_no int(100),Name varchar(100),Address varchar(100));
Query OK, 0 rows affected (0.29 sec)

mysql> Insert into SUPPLIER(Suppier_no,Name,Address)
    -> Values(1001,"MICHAEL","BASILDON");
ERROR 1054 (42S22): Unknown column 'Suppier_no' in 'field list'
mysql> Insert into SUPPLIER(Supplier_no,Name,Address) Values(1001,"MICHAEL","BASILDON");
Query OK, 1 row affected (0.05 sec)

mysql> SELECT*FROM SUPPLIER;
+-------------+---------+----------+
| Supplier_no | Name    | Address  |
+-------------+---------+----------+
|        1001 | MICHAEL | BASILDON |
```

OUTPUT:



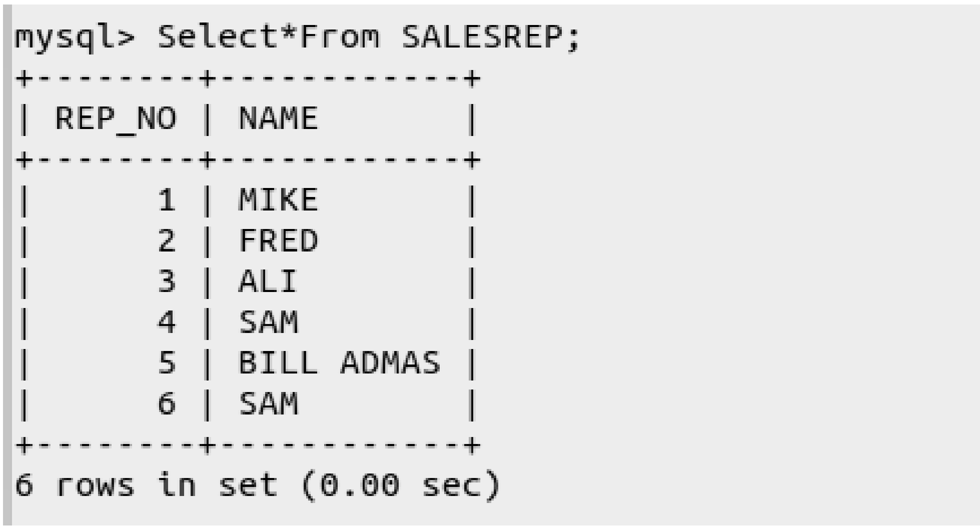
```
mysql> Insert into SUPPLIER(Supplier_no,Name,Address) Values(1003,"BABYLON","LONDON");
Query OK, 1 row affected (0.05 sec)

mysql> Insert into SUPPLIER(Supplier_no,Name,Address) Values(1004,"JOHN","BASILDON");
Query OK, 1 row affected (0.06 sec)

mysql> Insert into SUPPLIER(Supplier_no,Name,Address) Values(1005,"SMITH","GERMANY");
Query OK, 1 row affected (0.05 sec)

mysql> SELECt*FROM SUPPLIER;
+-------------+-----------+----------+
| Supplier_no | Name      | Address  |
+-------------+-----------+----------+
|        1001 | MICHAEL   | BASILDON |
|        1002 | RINGWORLD | GERMANY  |
|        1003 | BABYLON   | LONDON   |
|        1004 | JOHN      | BASILDON |
|        1005 | SMITH     | GERMANY  |
+-------------+-----------+----------+
5 rows in set (0.00 sec)
```

PRODUCT



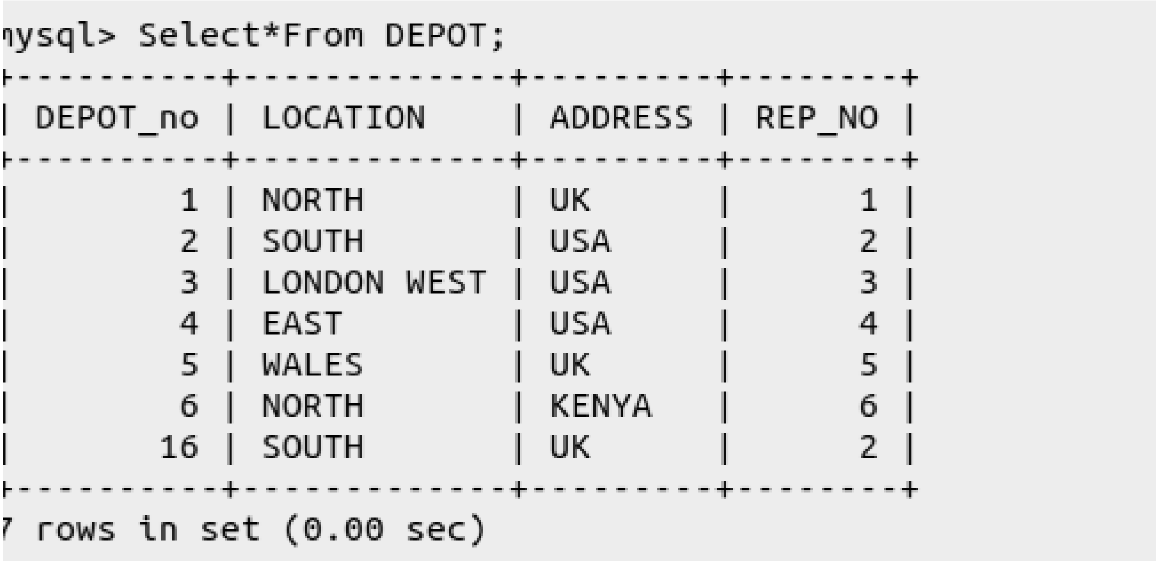
```
mysql> SELECT*FROM PRODUCT;
+------------+---------------+-------+-------------+-------------------+-----------------+
| PRODUCT_NO | DESCRIPTION   | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+---------------+-------+-------------+-------------------+-----------------+
|        120 | REDUCER        |  1200 |        1005 |                 5 |               6 |
|        121 | PLATE          |  1500 |        1004 |                 3 |               1 |
|        122 | HANDLE         |   700 |        1003 |                 2 |               4 |
|        124 | WIDGET REMOVER |   900 |        1005 |                 4 |               2 |
|        136 | SIZE WIDGET    |  1000 |        1001 |                 1 |               5 |
|        137 | SIZE WIDGET    | 15000 |        1002 |                 2 |              16 |
+------------+---------------+-------+-------------+-------------------+-----------------+
6 rows in set (0.00 sec)
```

SALESREP



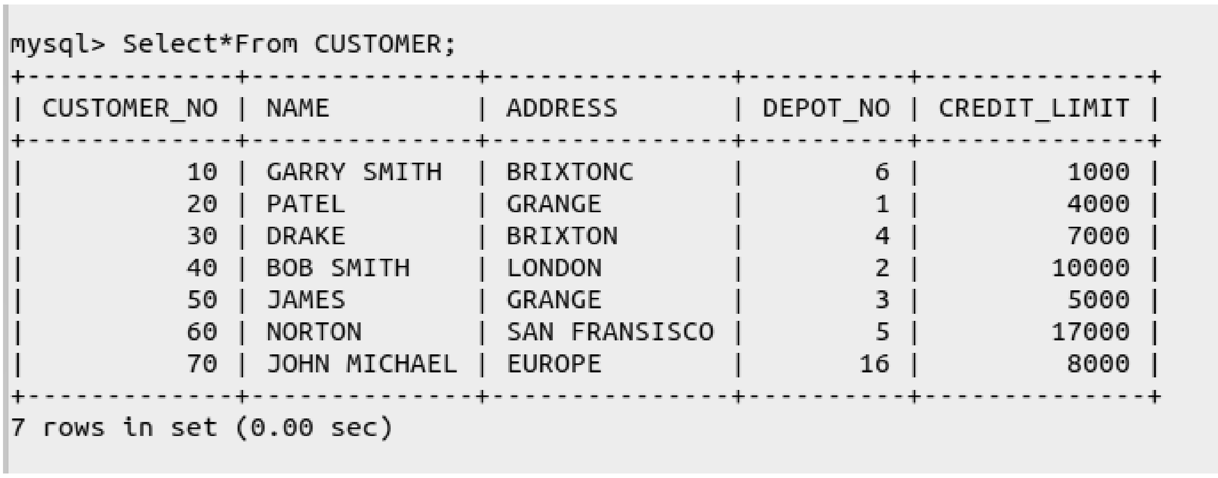
```
mysql> Select*From SALESREP;
+--------+------------+
| REP_NO | NAME       |
+--------+------------+
|      1 | MIKE       |
|      2 | FRED       |
|      3 | ALI        |
|      4 | SAM        |
|      5 | BILL ADMAS |
|      6 | SAM        |
+--------+------------+
6 rows in set (0.00 sec)
```

DEPOT



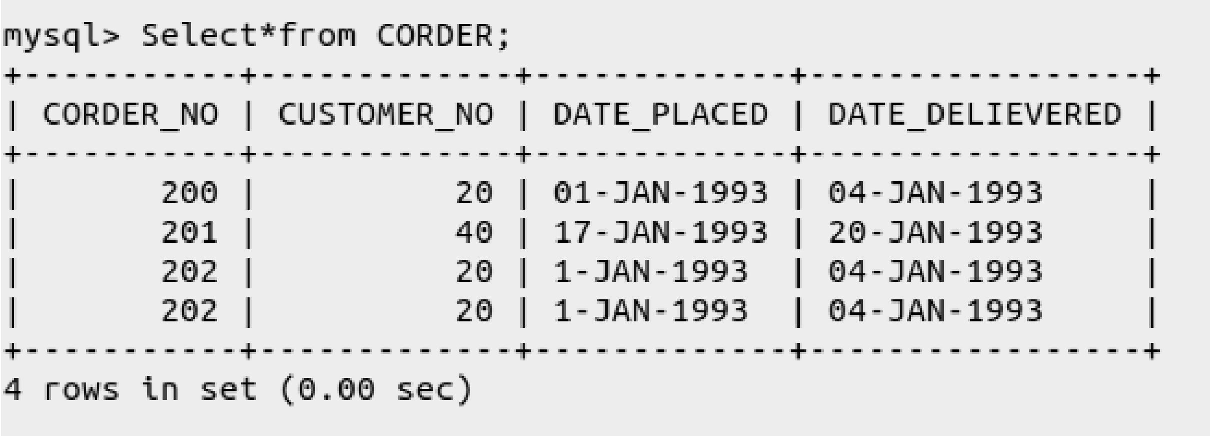
```
ysql> Select*From DEPOT;
+----------+------------+---------+--------+
| DEPOT_no | LOCATION    | ADDRESS | REP_NO |
+----------+------------+---------+--------+
|        1 | NORTH       | UK      |      1 |
|        2 | SOUTH       | USA     |      2 |
|        3 | LONDON WEST | USA     |      3 |
|        4 | EAST        | USA     |      4 |
|        5 | WALES       | UK      |      5 |
|        6 | NORTH       | KENYA   |      6 |
|       16 | SOUTH       | UK      |      2 |
+----------+------------+---------+--------+
7 rows in set (0.00 sec)
```

CUSTOMER



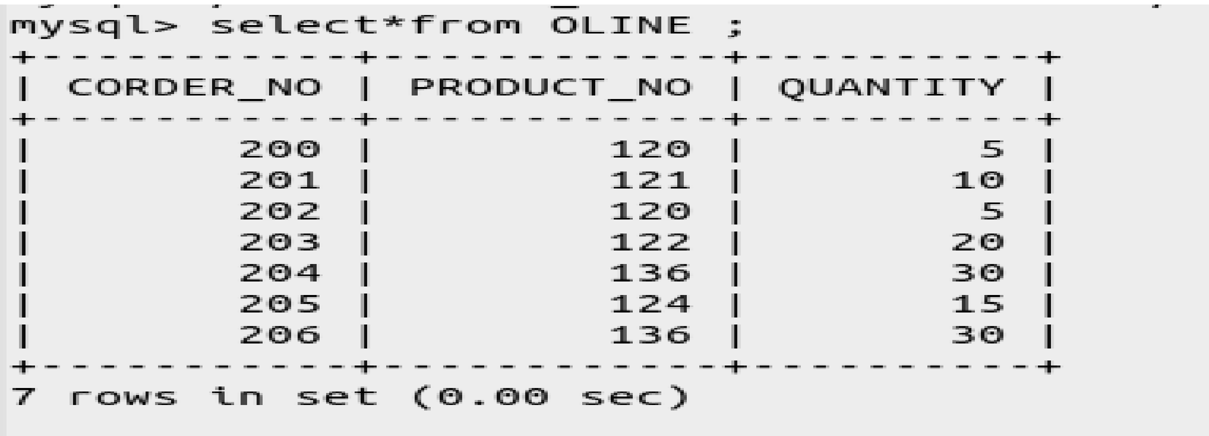
```
mysql> Select*From CUSTOMER;
+-------------+-------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME        | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+-------------+---------------+----------+--------------+
|          10 | GARRY SMITH | BRIXTONC      |        6 |         1000 |
|          20 | PATEL       | GRANGE        |        1 |         4000 |
|          30 | DRAKE       | BRIXTON       |        4 |         7000 |
|          40 | BOB SMITH   | LONDON        |        2 |        10000 |
|          50 | JAMES       | GRANGE        |        3 |         5000 |
|          60 | NORTON      | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL| EUROPE        |       16 |         8000 |
+-------------+-------------+---------------+----------+--------------+
7 rows in set (0.00 sec)
```

CORDER



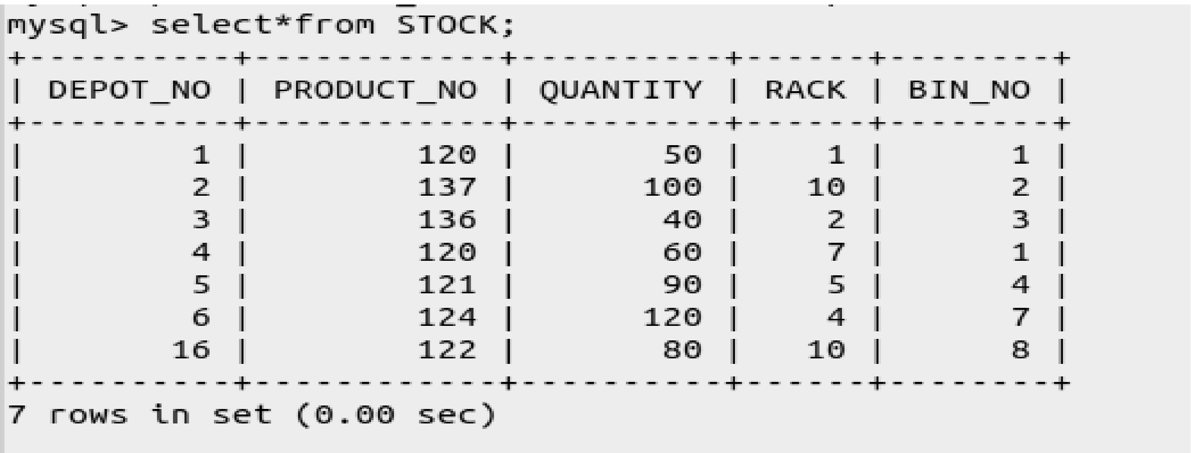
```
mysql> Select*from CORDER;
+----------+-------------+-------------+----------------+
| CORDER_NO | CUSTOMER_NO | DATE_PLACED | DATE_DELIEVERED |
+----------+-------------+-------------+----------------+
|       200 |          20 | 01-JAN-1993 | 04-JAN-1993     |
|       201 |          40 | 17-JAN-1993 | 20-JAN-1993     |
|       202 |          20 | 1-JAN-1993  | 04-JAN-1993     |
|       202 |          20 | 1-JAN-1993  | 04-JAN-1993     |
+----------+-------------+-------------+----------------+
4 rows in set (0.00 sec)
```

OLINE



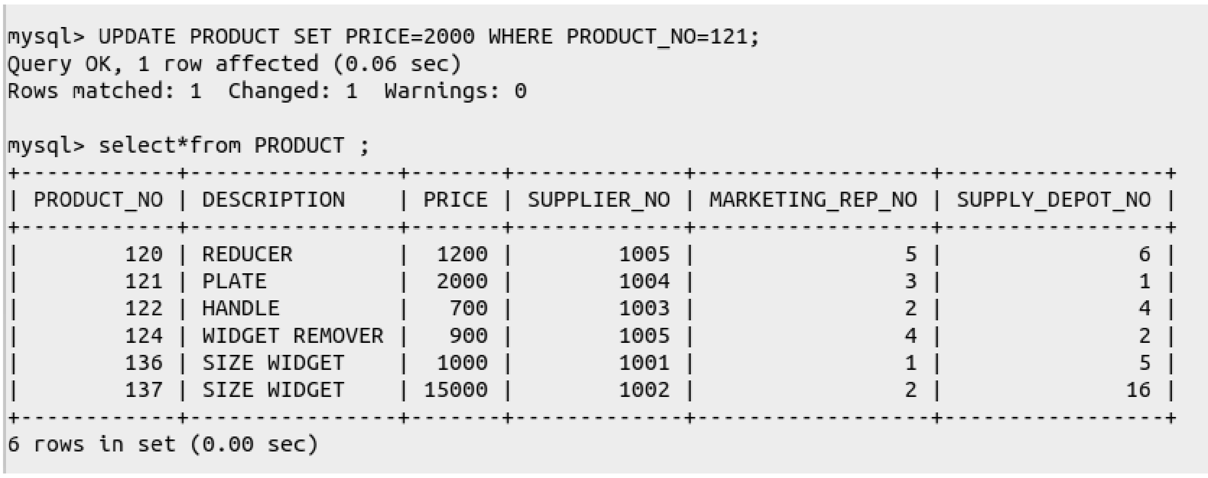
```
mysql> select*from OLINE ;
+-----------+------------+----------+
| CORDER_NO | PRODUCT_NO | QUANTITY |
+-----------+------------+----------+
|       200 |        120 |        5 |
|       201 |        121 |       10 |
|       202 |        120 |        5 |
|       203 |        122 |       20 |
|       204 |        136 |       30 |
|       205 |        124 |       15 |
|       206 |        136 |       30 |
+-----------+------------+----------+
7 rows in set (0.00 sec)
```

STOCK



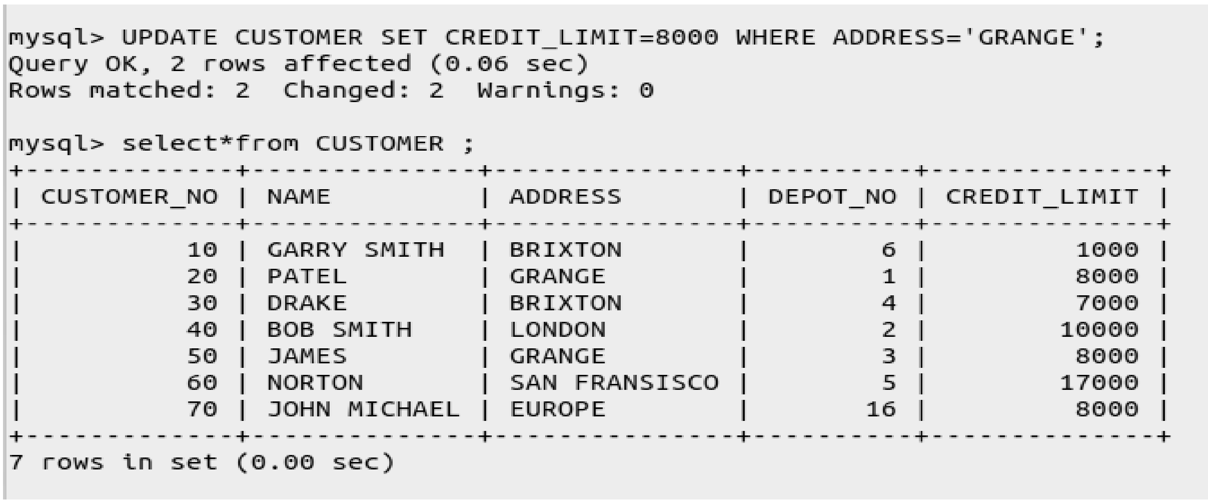
```
mysql> select*from STOCK;
+----------+------------+----------+------+--------+
| DEPOT_NO | PRODUCT_NO | QUANTITY | RACK | BIN_NO |
+----------+------------+----------+------+--------+
|        1 |        120 |       50 |    1 |      1 |
|        2 |        137 |      100 |   10 |      2 |
|        3 |        136 |       40 |    2 |      3 |
|        4 |        120 |       60 |    7 |      1 |
|        5 |        121 |       90 |    5 |      4 |
|        6 |        124 |      120 |    4 |      7 |
|       16 |        122 |       80 |   10 |      8 |
+----------+------------+----------+------+--------+
7 rows in set (0.00 sec)
```

1) Change the price of "plate" from 1500 to 2000.



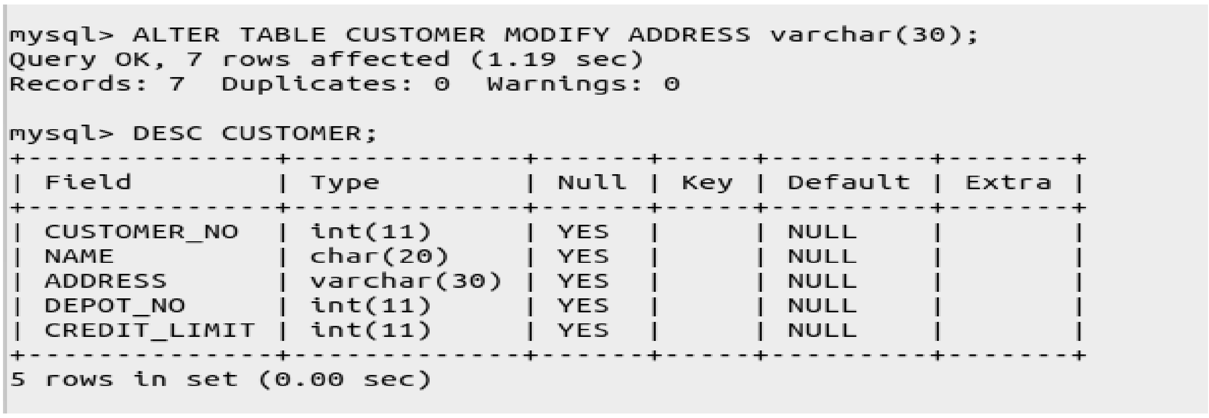
```
mysql> UPDATE PRODUCT SET PRICE=2000 WHERE PRODUCT_NO=121;
Query OK, 1 row affected (0.06 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select*from PRODUCT ;
+------------+----------------+-------+-------------+------------------+-----------------+
| PRODUCT_NO | DESCRIPTION    | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+----------------+-------+-------------+------------------+-----------------+
|        120 | REDUCER        |  1200 |        1005 |                5 |               6 |
|        121 | PLATE          |  2000 |        1004 |                3 |               1 |
|        122 | HANDLE         |   700 |        1003 |                2 |               4 |
|        124 | WIDGET REMOVER |   900 |        1005 |                4 |               2 |
|        136 | SIZE WIDGET    |  1000 |        1001 |                1 |               5 |
|        137 | SIZE WIDGET    | 15000 |        1002 |                2 |              16 |
+------------+----------------+-------+-------------+------------------+-----------------+
6 rows in set (0.00 sec)
```

2) Modify credit limit to 8000 for those customers who lives in "grange".



```
mysql> UPDATE CUSTOMER SET CREDIT_LIMIT=8000 WHERE ADDRESS='GRANGE';
Query OK, 2 rows affected (0.06 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> select*from CUSTOMER ;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        6 |         1000 |
|          20 | PATEL        | GRANGE        |        1 |         8000 |
|          30 | DRAKE        | BRIXTON       |        4 |         7000 |
|          40 | BOB SMITH    | LONDON        |        2 |        10000 |
|          50 | JAMES        | GRANGE        |        3 |         8000 |
|          60 | NORTON       | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)
```

3) Change the size of customer address to 30.



```
mysql> ALTER TABLE CUSTOMER MODIFY ADDRESS varchar(30);
Query OK, 7 rows affected (1.19 sec)
Records: 7  Duplicates: 0  Warnings: 0

mysql> DESC CUSTOMER;
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| CUSTOMER_NO  | int(11)     | YES  |     | NULL    |       |
| NAME         | char(20)    | YES  |     | NULL    |       |
| ADDRESS      | varchar(30) | YES  |     | NULL    |       |
| DEPOT_NO     | int(11)     | YES  |     | NULL    |       |
| CREDIT_LIMIT | int(11)     | YES  |     | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

4) Create a table cust1 with the attributes and formats

Customer_no   number (10)

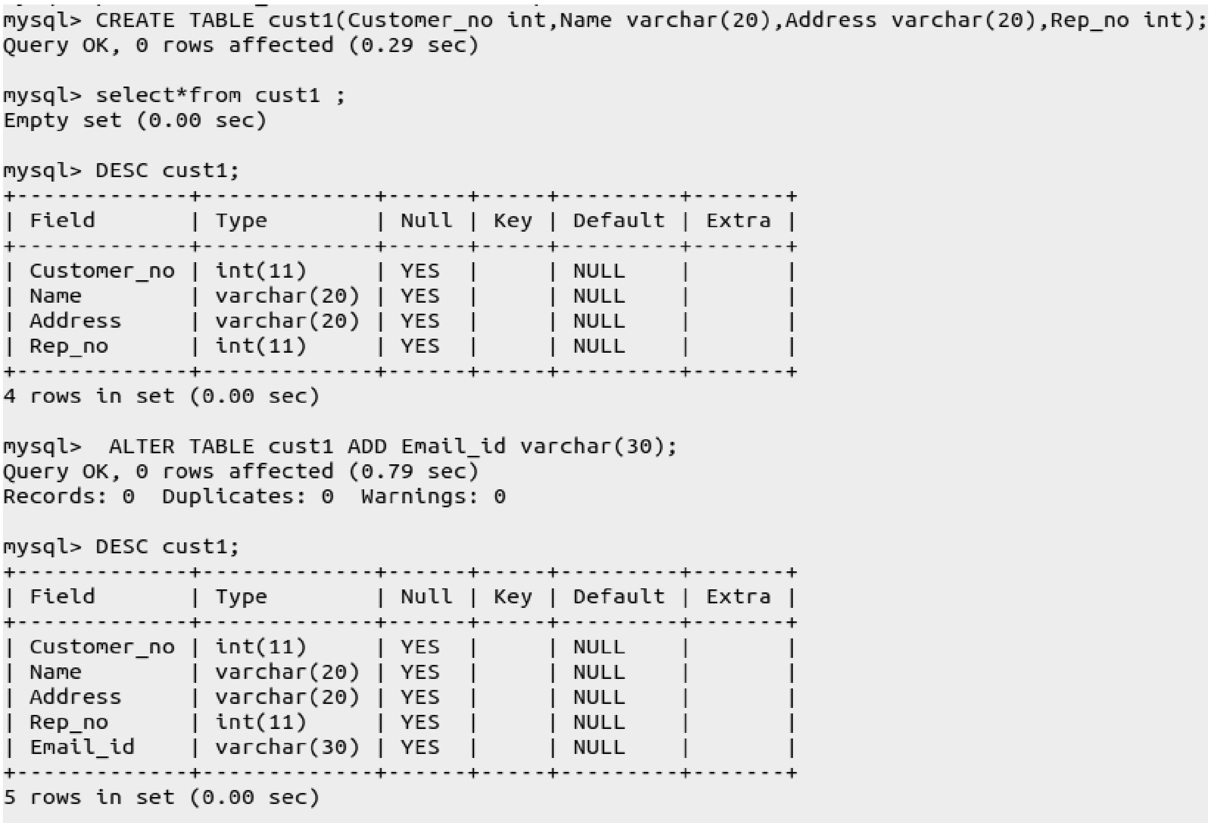
Name   varchar2 (20)

Address   varchar2 (20)

Rep_no   number (10)

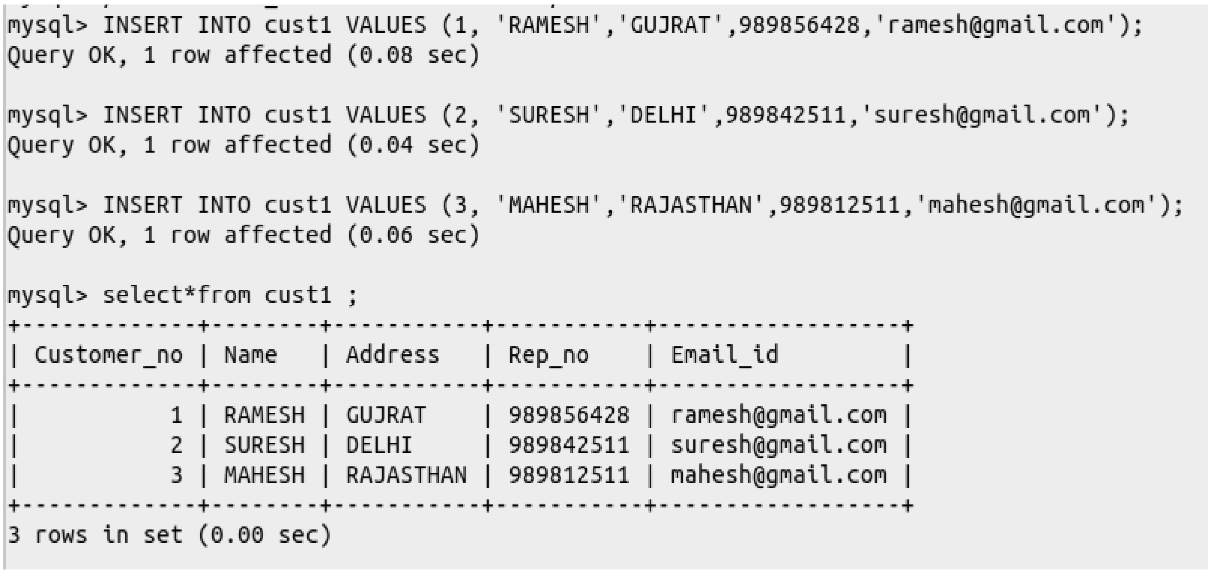
5) Add new field email id in cust1 table.

6) Display the structure of cust1 table.



```
mysql> CREATE TABLE cust1(Customer_no int,Name varchar(20),Address varchar(20),Rep_no int);
Query OK, 0 rows affected (0.29 sec)

mysql> select*from cust1 ;
Empty set (0.00 sec)

mysql> DESC cust1;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| Customer_no | int(11)     | YES  |     | NULL    |       |
| Name        | varchar(20) | YES  |     | NULL    |       |
| Address     | varchar(20) | YES  |     | NULL    |       |
| Rep_no      | int(11)     | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
4 rows in set (0.00 sec)

mysql>  ALTER TABLE cust1 ADD Email_id varchar(30);
Query OK, 0 rows affected (0.79 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> DESC cust1;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| Customer_no | int(11)     | YES  |     | NULL    |       |
| Name        | varchar(20) | YES  |     | NULL    |       |
| Address     | varchar(20) | YES  |     | NULL    |       |
| Rep_no      | int(11)     | YES  |     | NULL    |       |
| Email_id    | varchar(30) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

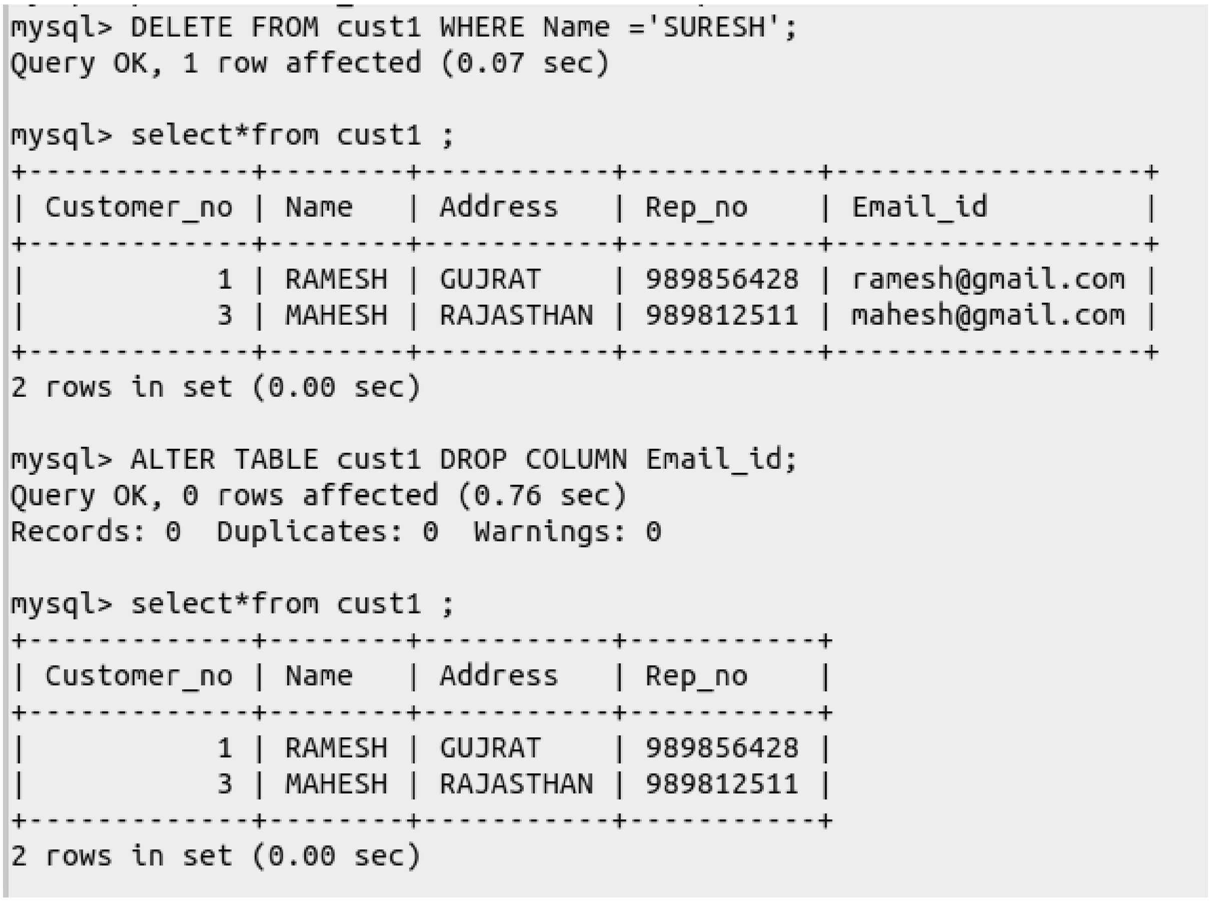
7) Display the content of cust1 table.



```
mysql> INSERT INTO cust1 VALUES (1, 'RAMESH','GUJRAT',989856428,'ramesh@gmail.com');
Query OK, 1 row affected (0.08 sec)

mysql> INSERT INTO cust1 VALUES (2, 'SURESH','DELHI',989842511,'suresh@gmail.com');
Query OK, 1 row affected (0.04 sec)

mysql> INSERT INTO cust1 VALUES (3, 'MAHESH','RAJASTHAN',989812511,'mahesh@gmail.com');
Query OK, 1 row affected (0.06 sec)

mysql> select*from cust1 ;
+-------------+--------+-----------+-----------+------------------+
| Customer_no | Name   | Address   | Rep_no    | Email_id         |
+-------------+--------+-----------+-----------+------------------+
|           1 | RAMESH | GUJRAT    | 989856428 | ramesh@gmail.com |
|           2 | SURESH | DELHI     | 989842511 | suresh@gmail.com |
|           3 | MAHESH | RAJASTHAN | 989812511 | mahesh@gmail.com |
+-------------+--------+-----------+-----------+------------------+
3 rows in set (0.00 sec)
```

8) Delete details of customer no 2 from cust1 table.

9) Delete email id field from cust1 table.

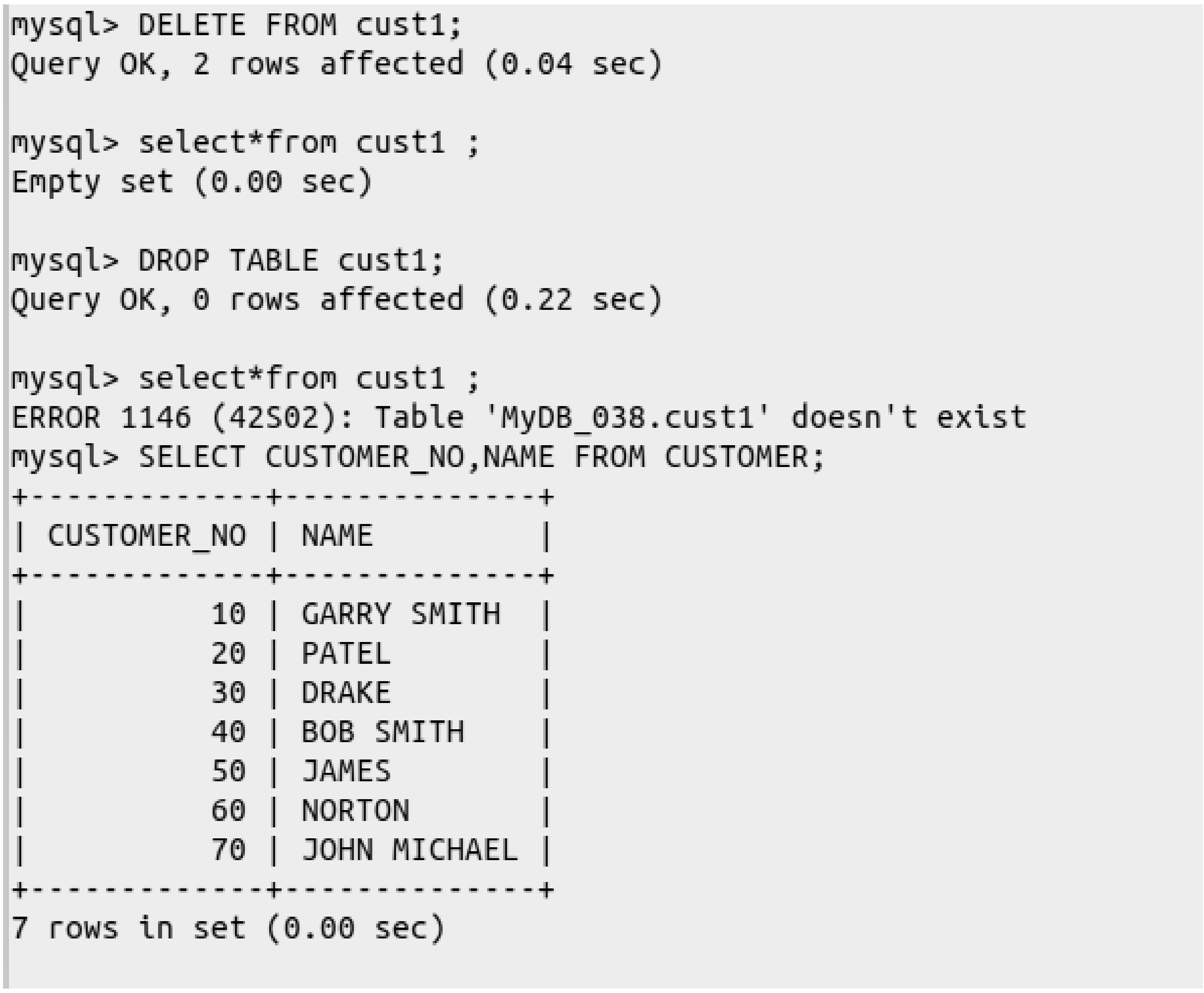


```
mysql> DELETE FROM cust1 WHERE Name ='SURESH';
Query OK, 1 row affected (0.07 sec)

mysql> select*from cust1 ;
+-------------+--------+-----------+-----------+------------------+
| Customer_no | Name   | Address   | Rep_no    | Email_id         |
+-------------+--------+-----------+-----------+------------------+
|           1 | RAMESH | GUJRAT    | 989856428 | ramesh@gmail.com |
|           3 | MAHESH | RAJASTHAN | 989812511 | mahesh@gmail.com |
+-------------+--------+-----------+-----------+------------------+
2 rows in set (0.00 sec)

mysql> ALTER TABLE cust1 DROP COLUMN Email_id;
Query OK, 0 rows affected (0.76 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select*from cust1 ;
+-------------+--------+-----------+-----------+
| Customer_no | Name   | Address   | Rep_no    |
+-------------+--------+-----------+-----------+
|           1 | RAMESH | GUJRAT    | 989856428 |
|           3 | MAHESH | RAJASTHAN | 989812511 |
+-------------+--------+-----------+-----------+
2 rows in set (0.00 sec)
```

10) Delete all the data rows from cust1 and look at the contents again.

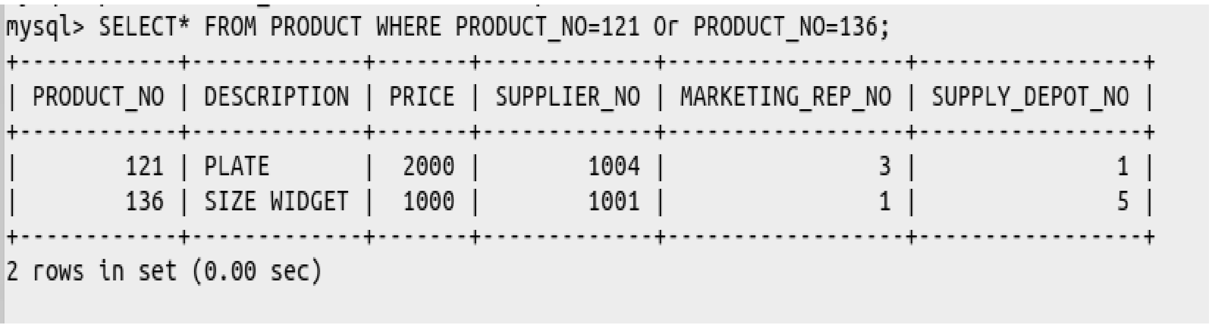
11) Delete the table cust1 and then try to look at its contents again.

12) List the customer numbers (customer_no) and names (name) of all customers



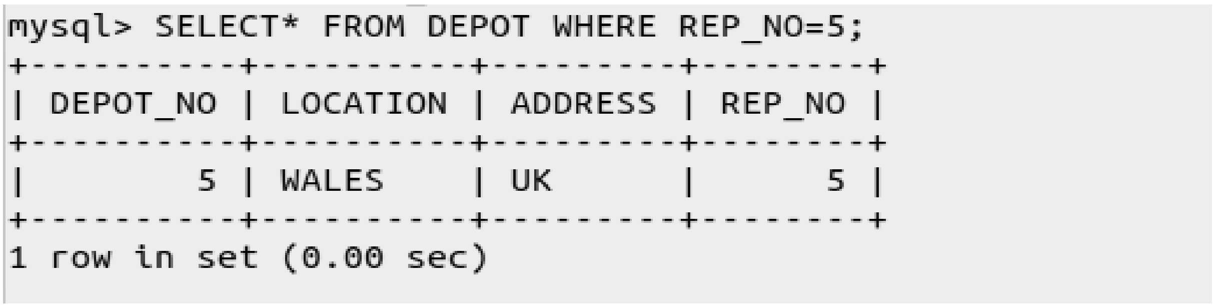
```
mysql> DELETE FROM cust1;
Query OK, 2 rows affected (0.04 sec)

mysql> select*from cust1 ;
Empty set (0.00 sec)

mysql> DROP TABLE cust1;
Query OK, 0 rows affected (0.22 sec)

mysql> select*from cust1 ;
ERROR 1146 (42S02): Table 'MyDB_038.cust1' doesn't exist
mysql> SELECT CUSTOMER_NO,NAME FROM CUSTOMER;
+-------------+--------------+
| CUSTOMER_NO | NAME         |
+-------------+--------------+
|          10 | GARRY SMITH  |
|          20 | PATEL        |
|          30 | DRAKE        |
|          40 | BOB SMITH    |
|          50 | JAMES        |
|          60 | NORTON       |
|          70 | JOHN MICHAEL |
+-------------+--------------+
7 rows in set (0.00 sec)
```

13) List all details of the product with a product number (product_no) of 121 and 136.(use Or).



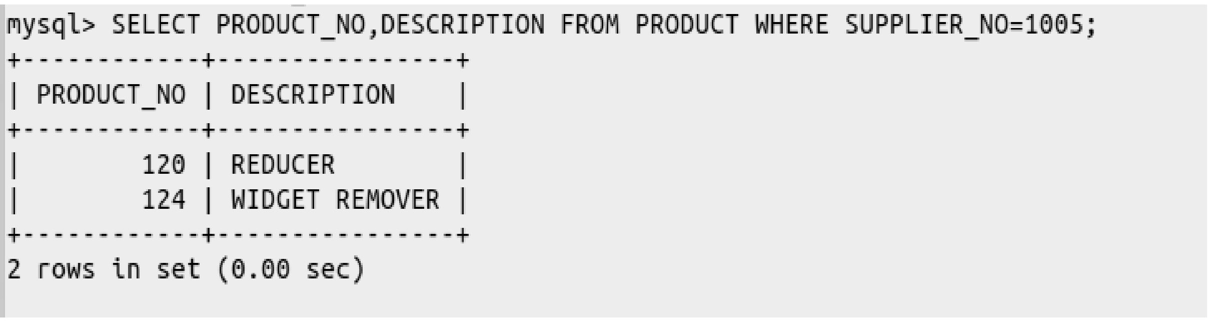
```
mysql> SELECT* FROM PRODUCT WHERE PRODUCT_NO=121 Or PRODUCT_NO=136;
+------------+-------------+-------+-------------+-----------------+-----------------+
| PRODUCT_NO | DESCRIPTION | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+-------------+-------+-------------+-----------------+-----------------+
|        121 | PLATE       |  2000 |        1004 |                3 |               1 |
|        136 | SIZE WIDGET |  1000 |        1001 |                1 |               5 |
+------------+-------------+-------+-------------+-----------------+-----------------+
2 rows in set (0.00 sec)
```

14)List all details of depots with rep 5 as their rep(rep_no).



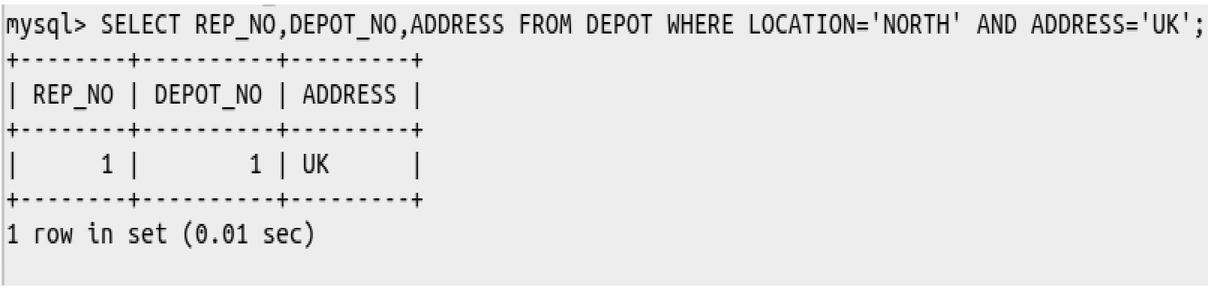
```
mysql> SELECT* FROM DEPOT WHERE REP_NO=5;
+----------+----------+---------+--------+
| DEPOT_NO | LOCATION | ADDRESS | REP_NO |
+----------+----------+---------+--------+
|        5 | WALES    | UK      |      5 |
+----------+----------+---------+--------+
1 row in set (0.00 sec)
```

15) List the product number (product_no) and description only of all products from supplier number 1005 (supplier_no).



```
mysql> SELECT PRODUCT_NO,DESCRIPTION FROM PRODUCT WHERE SUPPLIER_NO=1005;
+------------+----------------+
| PRODUCT_NO | DESCRIPTION    |
+------------+----------------+
|        120 | REDUCER        |
|        124 | WIDGET REMOVER |
+------------+----------------+
2 rows in set (0.00 sec)
```

16)List the sales rep number (rep_no), depot number and address for depots located at NORTH and address is UK.



```
mysql> SELECT REP_NO,DEPOT_NO,ADDRESS FROM DEPOT WHERE LOCATION='NORTH' AND ADDRESS='UK';
+--------+----------+---------+
| REP_NO | DEPOT_NO | ADDRESS |
+--------+----------+---------+
|      1 |        1 | UK      |
+--------+----------+---------+
1 row in set (0.01 sec)
```

Conclusion:

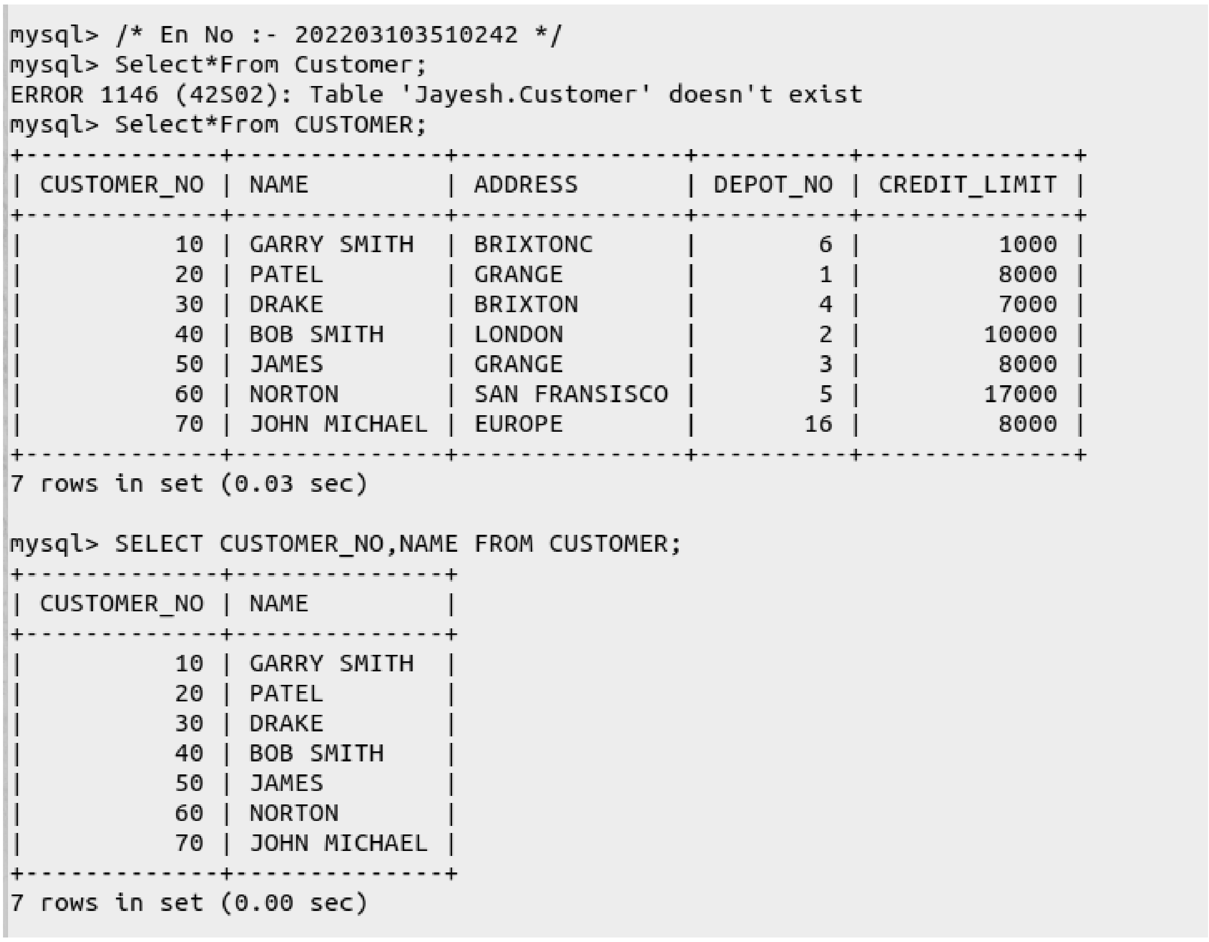
In conclusion, our practical experience in database management has fulfilled our goal of mastering essential SQL commands. We have effectively learnt our ability to access, modify, and query data using SQL, while also mastering the creation and population of databases through DDL and DML commands .

PRACTICAL :- 2

AIM : Implement DDL and DML queries with different clauses.

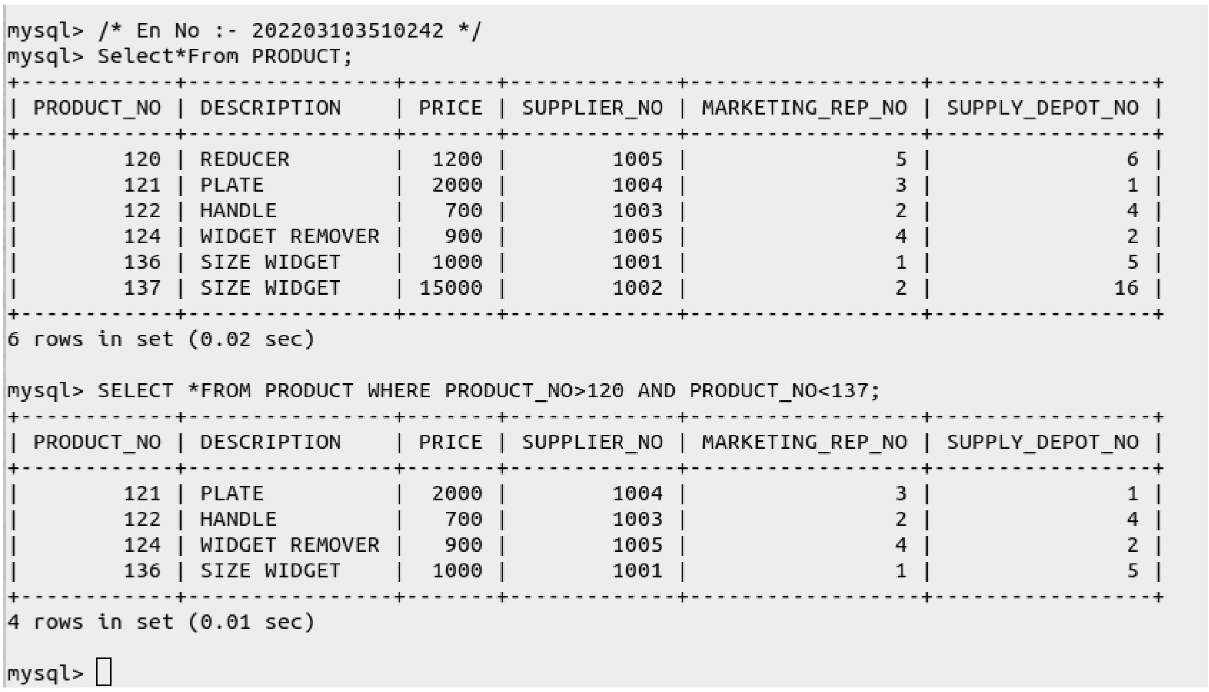
Queries :

1) List the customer numbers (customer_no) and names (name) of all customers.



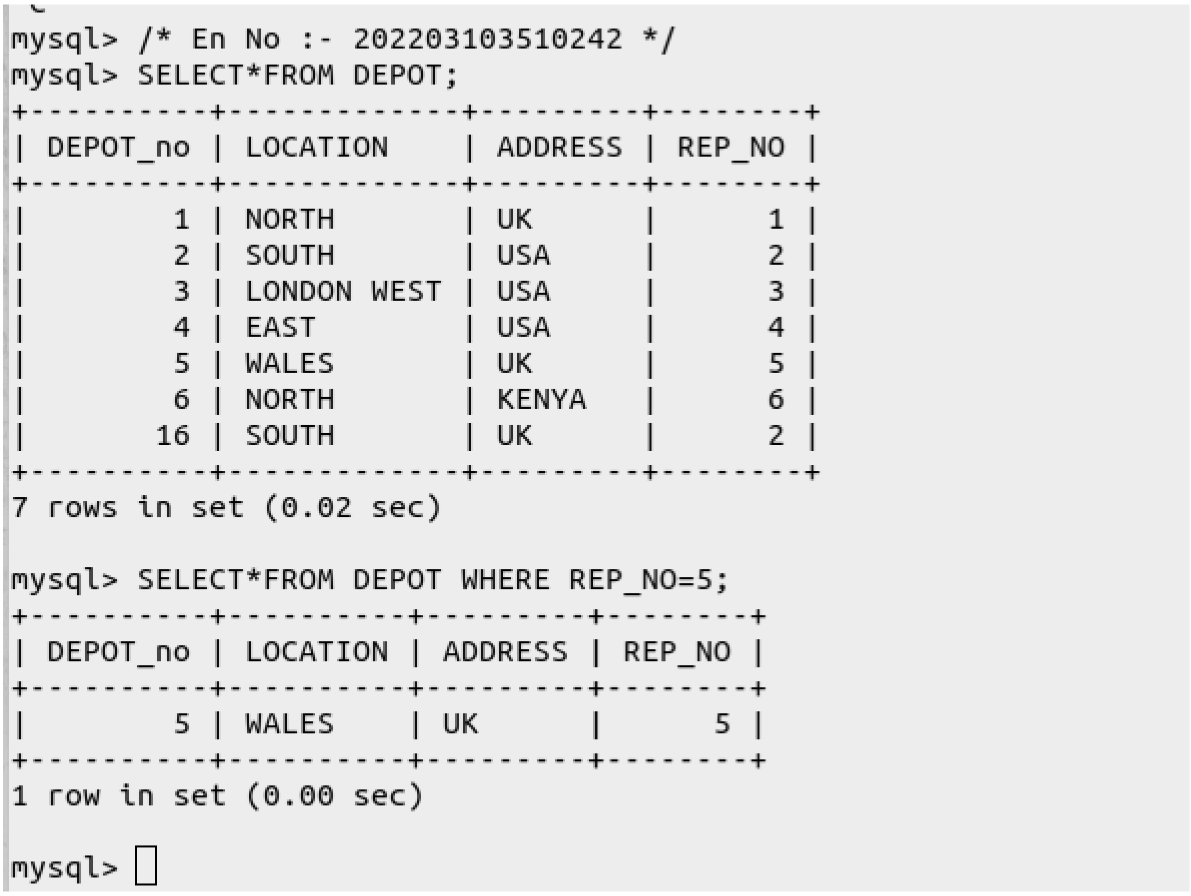
```
mysql> /* En No :- 202203103510242 */
mysql> Select*From Customer;
ERROR 1146 (42S02): Table 'Jayesh.Customer' doesn't exist
mysql> Select*From CUSTOMER;
+-------------+-------------+--------------+----------+--------------+
| CUSTOMER_NO | NAME        | ADDRESS      | DEPOT_NO | CREDIT_LIMIT |
+-------------+-------------+--------------+----------+--------------+
|          10 | GARRY SMITH | BRIXTONC     |        6 |         1000 |
|          20 | PATEL       | GRANGE       |        1 |         8000 |
|          30 | DRAKE       | BRIXTON      |        4 |         7000 |
|          40 | BOB SMITH   | LONDON       |        2 |        10000 |
|          50 | JAMES       | GRANGE       |        3 |         8000 |
|          60 | NORTON      | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE       |       16 |         8000 |
+-------------+-------------+--------------+----------+--------------+
7 rows in set (0.03 sec)

mysql> SELECT CUSTOMER_NO,NAME FROM CUSTOMER;
+-------------+-------------+
| CUSTOMER_NO | NAME        |
+-------------+-------------+
|          10 | GARRY SMITH |
|          20 | PATEL       |
|          30 | DRAKE       |
|          40 | BOB SMITH   |
|          50 | JAMES       |
|          60 | NORTON      |
|          70 | JOHN MICHAEL |
+-------------+-------------+
7 rows in set (0.00 sec)
```

2)List all details of the product with a product number (product_no) of 121 and 136.



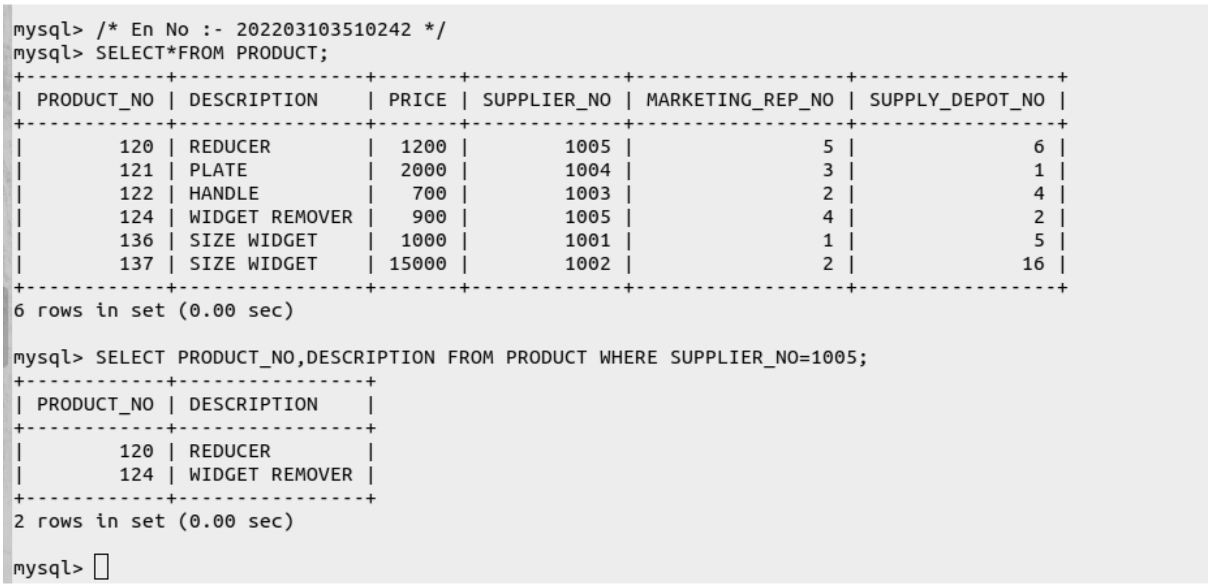
```
mysql> /* En No :- 202203103510242 */
mysql> Select*From PRODUCT;
+------------+----------------+-------+-------------+-------------------+-----------------+
| PRODUCT_NO | DESCRIPTION    | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+----------------+-------+-------------+-------------------+-----------------+
|        120 | REDUCER        |  1200 |        1005 |                 5 |               6 |
|        121 | PLATE          |  2000 |        1004 |                 3 |               1 |
|        122 | HANDLE         |   700 |        1003 |                 2 |               4 |
|        124 | WIDGET REMOVER |   900 |        1005 |                 4 |               2 |
|        136 | SIZE WIDGET    |  1000 |        1001 |                 1 |               5 |
|        137 | SIZE WIDGET    | 15000 |        1002 |                 2 |              16 |
+------------+----------------+-------+-------------+-------------------+-----------------+
6 rows in set (0.02 sec)

mysql> SELECT *FROM PRODUCT WHERE PRODUCT_NO>120 AND PRODUCT_NO<137;
+------------+----------------+-------+-------------+-------------------+-----------------+
| PRODUCT_NO | DESCRIPTION    | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+----------------+-------+-------------+-------------------+-----------------+
|        121 | PLATE          |  2000 |        1004 |                 3 |               1 |
|        122 | HANDLE         |   700 |        1003 |                 2 |               4 |
|        124 | WIDGET REMOVER |   900 |        1005 |                 4 |               2 |
|        136 | SIZE WIDGET    |  1000 |        1001 |                 1 |               5 |
+------------+----------------+-------+-------------+-------------------+-----------------+
4 rows in set (0.01 sec)

mysql>
```

3) List all details of depots with rep 5 as their rep(rep_no).



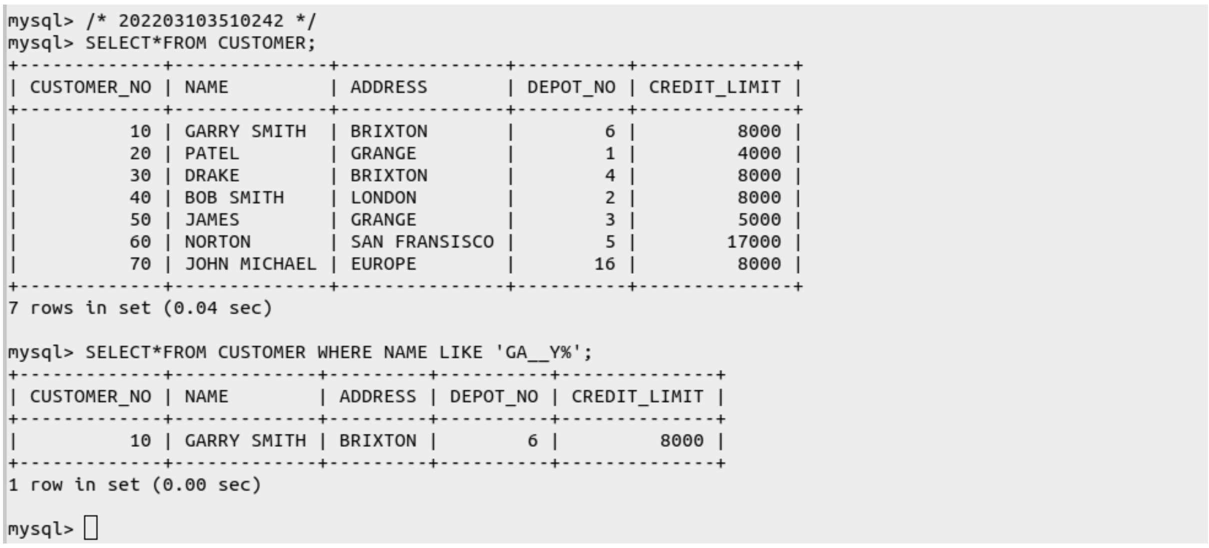
```
mysql> /* En No :- 202203103510242 */
mysql> SELECT*FROM DEPOT;
+----------+-------------+---------+--------+
| DEPOT_no | LOCATION    | ADDRESS | REP_NO |
+----------+-------------+---------+--------+
|        1 | NORTH       | UK      |      1 |
|        2 | SOUTH       | USA     |      2 |
|        3 | LONDON WEST | USA     |      3 |
|        4 | EAST        | USA     |      4 |
|        5 | WALES       | UK      |      5 |
|        6 | NORTH       | KENYA   |      6 |
|       16 | SOUTH       | UK      |      2 |
+----------+-------------+---------+--------+
7 rows in set (0.02 sec)

mysql> SELECT*FROM DEPOT WHERE REP_NO=5;
+----------+----------+---------+--------+
| DEPOT_no | LOCATION | ADDRESS | REP_NO |
+----------+----------+---------+--------+
|        5 | WALES    | UK      |      5 |
+----------+----------+---------+--------+
1 row in set (0.00 sec)

mysql>
```

4) List the product number (product_no) and description only of all products from supplier number 1005 (supplier_no).



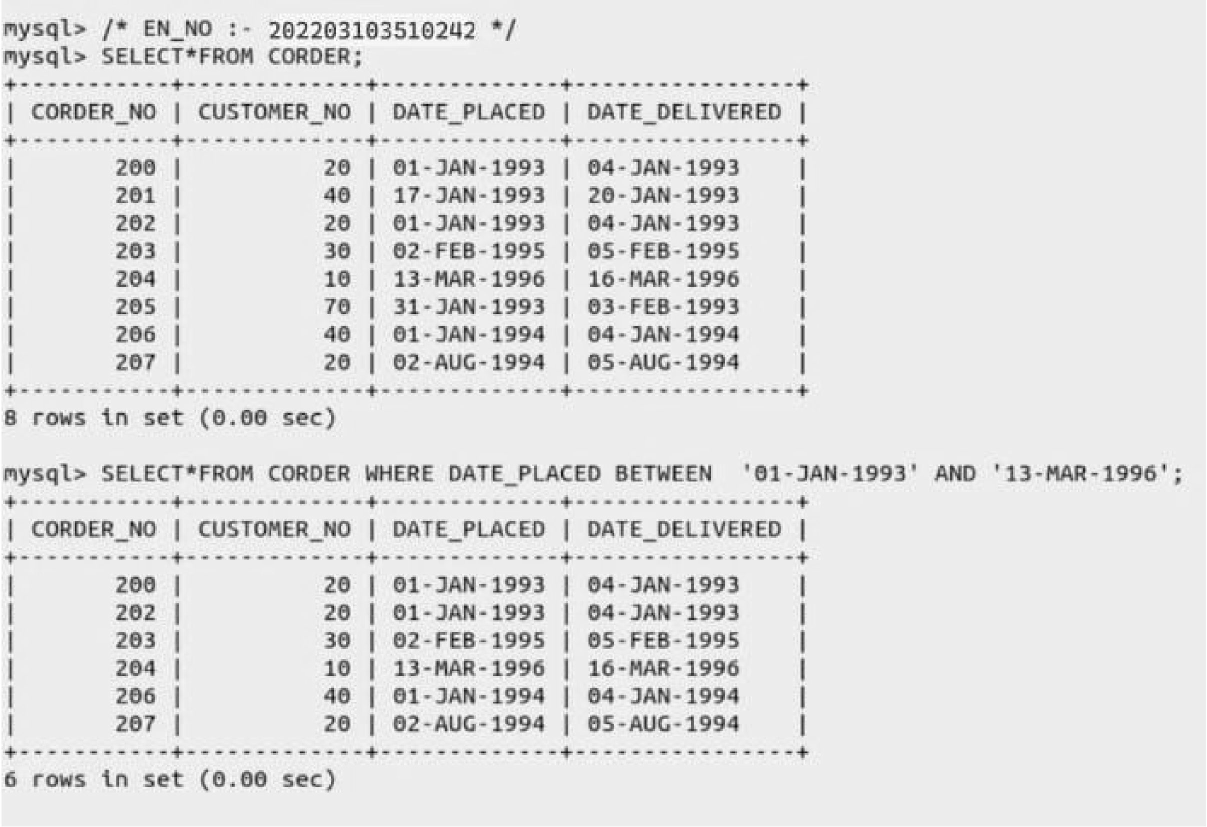
```
mysql> /* En No :- 202203103510242 */
mysql> SELECT*FROM PRODUCT;
+------------+----------------+-------+-------------+-------------------+------------------+
| PRODUCT_NO | DESCRIPTION    | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+----------------+-------+-------------+-------------------+------------------+
|        120 | REDUCER        |  1200 |        1005 |                 5 |                6 |
|        121 | PLATE          |  2000 |        1004 |                 3 |                1 |
|        122 | HANDLE         |   700 |        1003 |                 2 |                4 |
|        124 | WIDGET REMOVER |   900 |        1005 |                 4 |                2 |
|        136 | SIZE WIDGET    |  1000 |        1001 |                 1 |                5 |
|        137 | SIZE WIDGET    | 15000 |        1002 |                 2 |               16 |
+------------+----------------+-------+-------------+-------------------+------------------+
6 rows in set (0.00 sec)

mysql> SELECT PRODUCT_NO,DESCRIPTION FROM PRODUCT WHERE SUPPLIER_NO=1005;
+------------+----------------+
| PRODUCT_NO | DESCRIPTION    |
+------------+----------------+
|        120 | REDUCER        |
|        124 | WIDGET REMOVER |
+------------+----------------+
2 rows in set (0.00 sec)

mysql> 
```

5) List all details for all customers with names (name) starting from sm followed by 1 character followed by t followed by anything.)



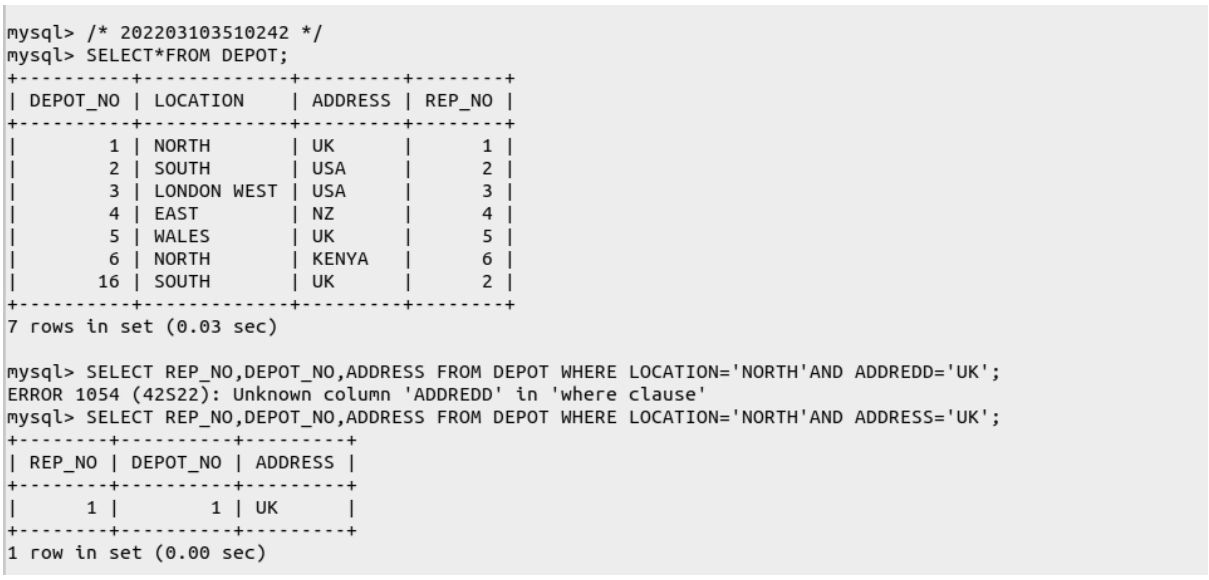
```
mysql> /* 202203103510242 */
mysql> SELECT*FROM CUSTOMER;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        6 |         8000 |
|          20 | PATEL        | GRANGE        |        1 |         4000 |
|          30 | DRAKE        | BRIXTON       |        4 |         8000 |
|          40 | BOB SMITH    | LONDON        |        2 |         8000 |
|          50 | JAMES        | GRANGE        |        3 |         5000 |
|          60 | NORTON       | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.04 sec)

mysql> SELECT*FROM CUSTOMER WHERE NAME LIKE 'GA__Y%';
+-------------+-------------+---------+----------+--------------+
| CUSTOMER_NO | NAME        | ADDRESS | DEPOT_NO | CREDIT_LIMIT |
+-------------+-------------+---------+----------+--------------+
|          10 | GARRY SMITH | BRIXTON |        6 |         8000 |
+-------------+-------------+---------+----------+--------------+
1 row in set (0.00 sec)

mysql> 
```

6) List all details for all orders with date_placed from 1-jan-2023 to 31-jan-12023).



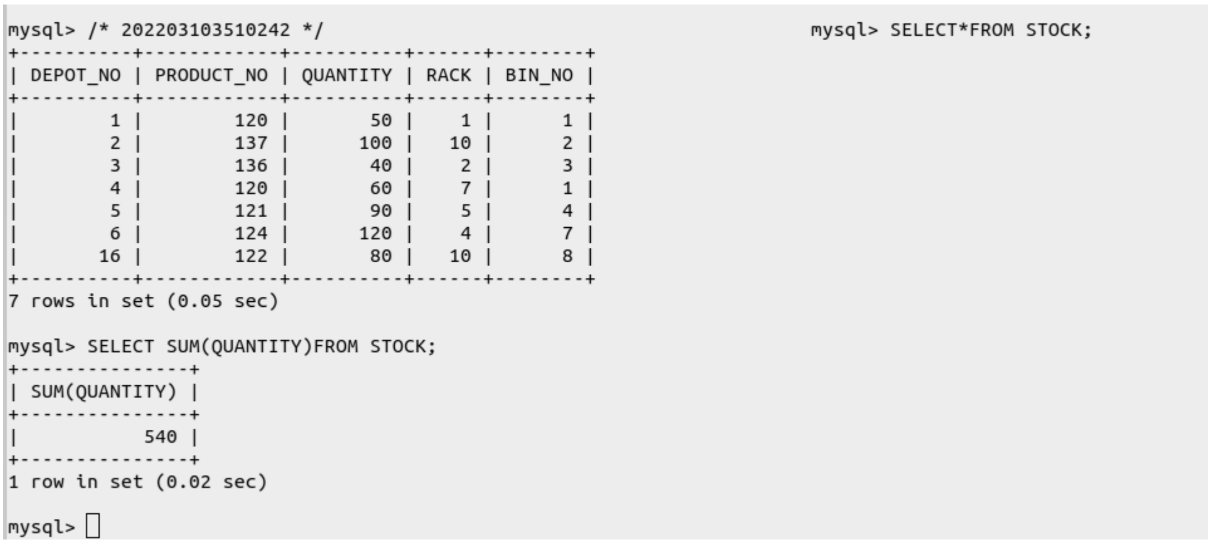
```
mysql> /* EN_NO :- 202203103510242 */
mysql> SELECT*FROM CORDER;
+-----------+-------------+-------------+----------------+
| CORDER_NO | CUSTOMER_NO | DATE_PLACED | DATE_DELIVERED |
+-----------+-------------+-------------+----------------+
|       200 |          20 | 01-JAN-1993 | 04-JAN-1993    |
|       201 |          40 | 17-JAN-1993 | 20-JAN-1993    |
|       202 |          20 | 01-JAN-1993 | 04-JAN-1993    |
|       203 |          30 | 02-FEB-1995 | 05-FEB-1995    |
|       204 |          10 | 13-MAR-1996 | 16-MAR-1996    |
|       205 |          70 | 31-JAN-1993 | 03-FEB-1993    |
|       206 |          40 | 01-JAN-1994 | 04-JAN-1994    |
|       207 |          20 | 02-AUG-1994 | 05-AUG-1994    |
+-----------+-------------+-------------+----------------+
8 rows in set (0.00 sec)

mysql> SELECT*FROM CORDER WHERE DATE_PLACED BETWEEN  '01-JAN-1993' AND '13-MAR-1996';
+-----------+-------------+-------------+----------------+
| CORDER_NO | CUSTOMER_NO | DATE_PLACED | DATE_DELIVERED |
+-----------+-------------+-------------+----------------+
|       200 |          20 | 01-JAN-1993 | 04-JAN-1993    |
|       202 |          20 | 01-JAN-1993 | 04-JAN-1993    |
|       203 |          30 | 02-FEB-1995 | 05-FEB-1995    |
|       204 |          10 | 13-MAR-1996 | 16-MAR-1996    |
|       206 |          40 | 01-JAN-1994 | 04-JAN-1994    |
|       207 |          20 | 02-AUG-1994 | 05-AUG-1994    |
+-----------+-------------+-------------+----------------+
6 rows in set (0.00 sec)
```

7) List the sales rep number (rep_no), depot number and address for depots located at NORTH and address is UK.



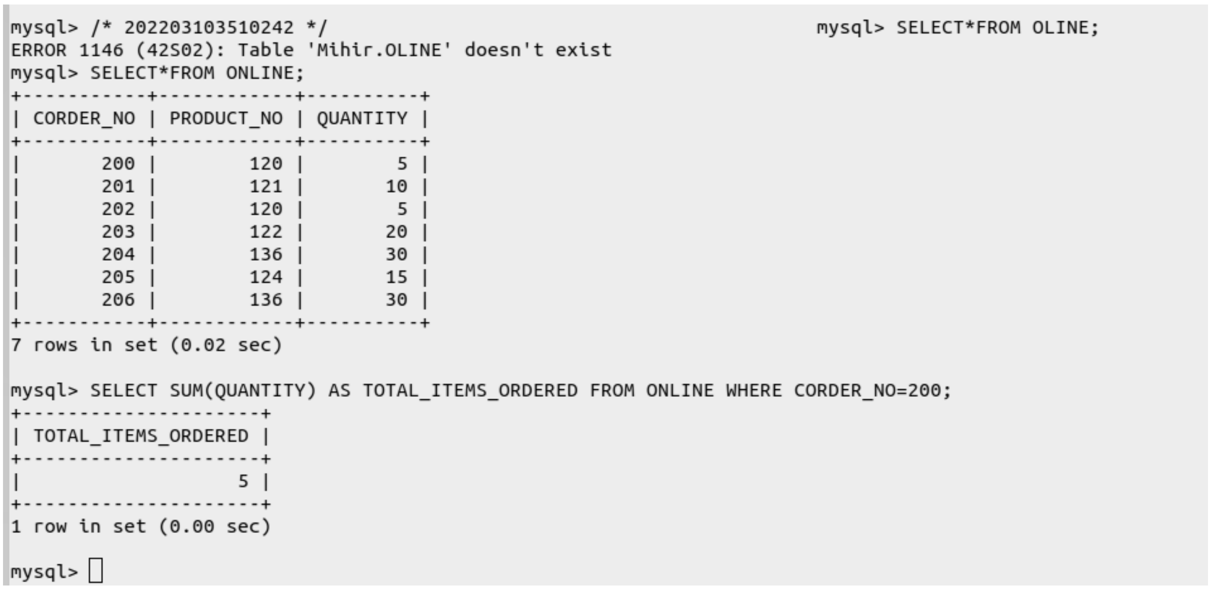
```
mysql> /* 202203103510242 */
mysql> SELECT*FROM DEPOT;
+----------+-------------+---------+--------+
| DEPOT_NO | LOCATION    | ADDRESS | REP_NO |
+----------+-------------+---------+--------+
|        1 | NORTH       | UK      |      1 |
|        2 | SOUTH       | USA     |      2 |
|        3 | LONDON WEST | USA     |      3 |
|        4 | EAST        | NZ      |      4 |
|        5 | WALES       | UK      |      5 |
|        6 | NORTH       | KENYA   |      6 |
|       16 | SOUTH       | UK      |      2 |
+----------+-------------+---------+--------+
7 rows in set (0.03 sec)

mysql> SELECT REP_NO,DEPOT_NO,ADDRESS FROM DEPOT WHERE LOCATION='NORTH'AND ADDREDD='UK';
ERROR 1054 (42S22): Unknown column 'ADDREDD' in 'where clause'
mysql> SELECT REP_NO,DEPOT_NO,ADDRESS FROM DEPOT WHERE LOCATION='NORTH'AND ADDRESS='UK';
+--------+----------+---------+
| REP_NO | DEPOT_NO | ADDRESS |
+--------+----------+---------+
|      1 |        1 | UK      |
+--------+----------+---------+
1 row in set (0.00 sec)
```

8) Give the total number of items (quantity) in stock in all depots.



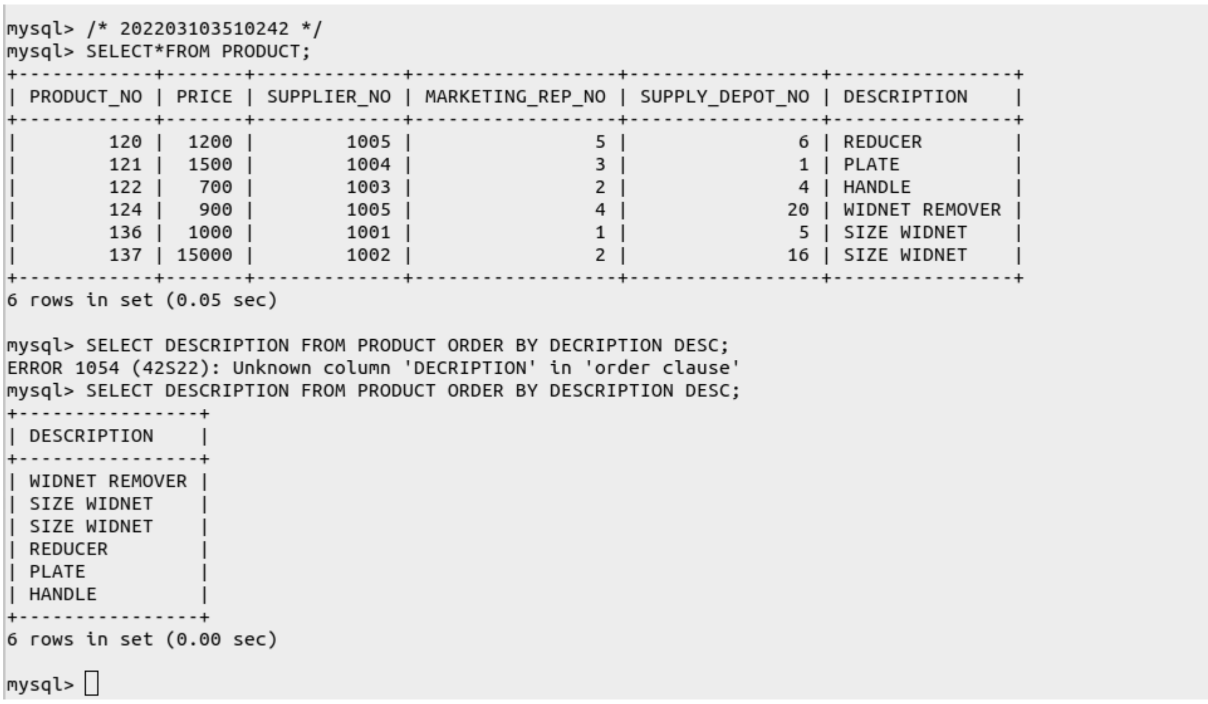
```
mysql> /* 202203103510242 */                                          mysql> SELECT*FROM STOCK;
+----------+------------+----------+------+--------+
| DEPOT_NO | PRODUCT_NO | QUANTITY | RACK | BIN_NO |
+----------+------------+----------+------+--------+
|        1 |        120 |       50 |    1 |      1 |
|        2 |        137 |      100 |   10 |      2 |
|        3 |        136 |       40 |    2 |      3 |
|        4 |        120 |       60 |    7 |      1 |
|        5 |        121 |       90 |    5 |      4 |
|        6 |        124 |      120 |    4 |      7 |
|       16 |        122 |       80 |   10 |      8 |
+----------+------------+----------+------+--------+
7 rows in set (0.05 sec)

mysql> SELECT SUM(QUANTITY)FROM STOCK;
+---------------+
| SUM(QUANTITY) |
+---------------+
|           540 |
+---------------+
1 row in set (0.02 sec)

mysql> 
```

9) Give the total number of items (order line quantity) which have been ordered with corder_no 200.



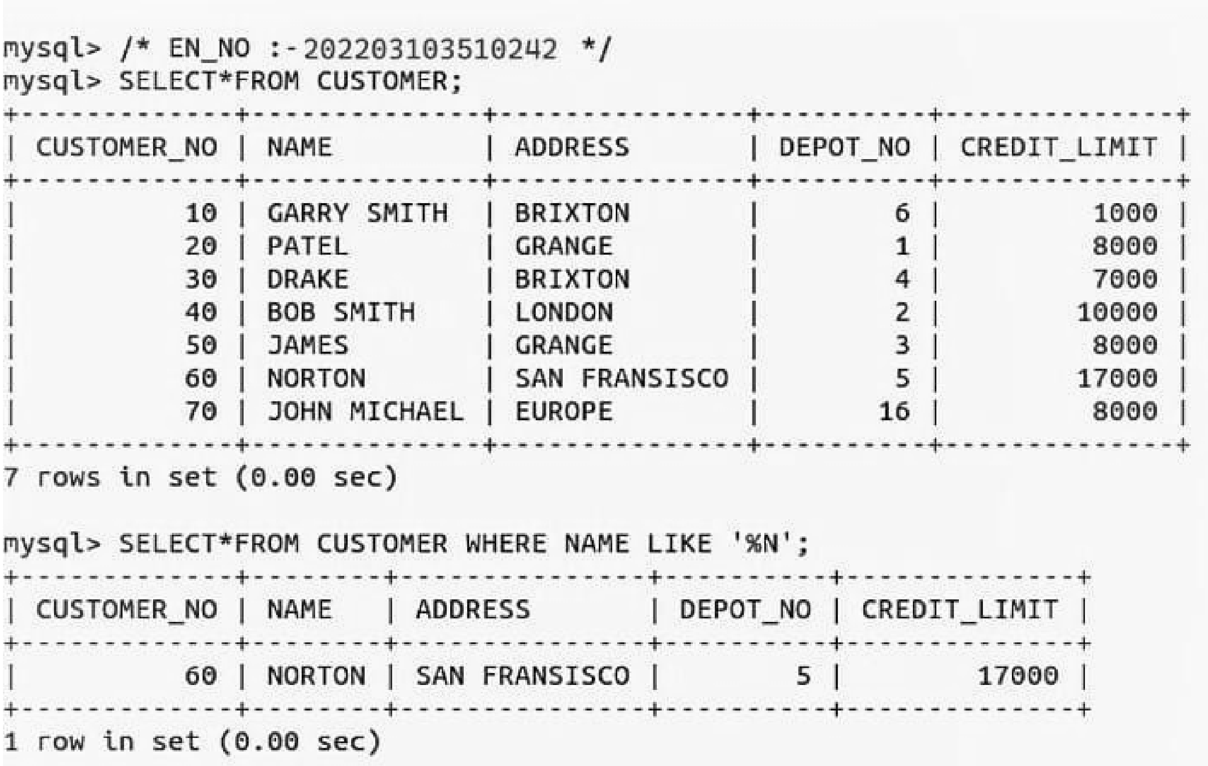
```
mysql> /* 202203103510242 */                                          mysql> SELECT*FROM OLINE;
ERROR 1146 (42S02): Table 'Mihir.OLINE' doesn't exist
mysql> SELECT*FROM ONLINE;
+-----------+------------+----------+
| CORDER_NO | PRODUCT_NO | QUANTITY |
+-----------+------------+----------+
|       200 |        120 |        5 |
|       201 |        121 |       10 |
|       202 |        120 |        5 |
|       203 |        122 |       20 |
|       204 |        136 |       30 |
|       205 |        124 |       15 |
|       206 |        136 |       30 |
+-----------+------------+----------+
7 rows in set (0.02 sec)

mysql> SELECT SUM(QUANTITY) AS TOTAL_ITEMS_ORDERED FROM ONLINE WHERE CORDER_NO=200;
+---------------------+
| TOTAL_ITEMS_ORDERED |
+---------------------+
|                   5 |
+---------------------+
1 row in set (0.00 sec)

mysql> 
```

10) List product descriptions in reverse alphabetic order.



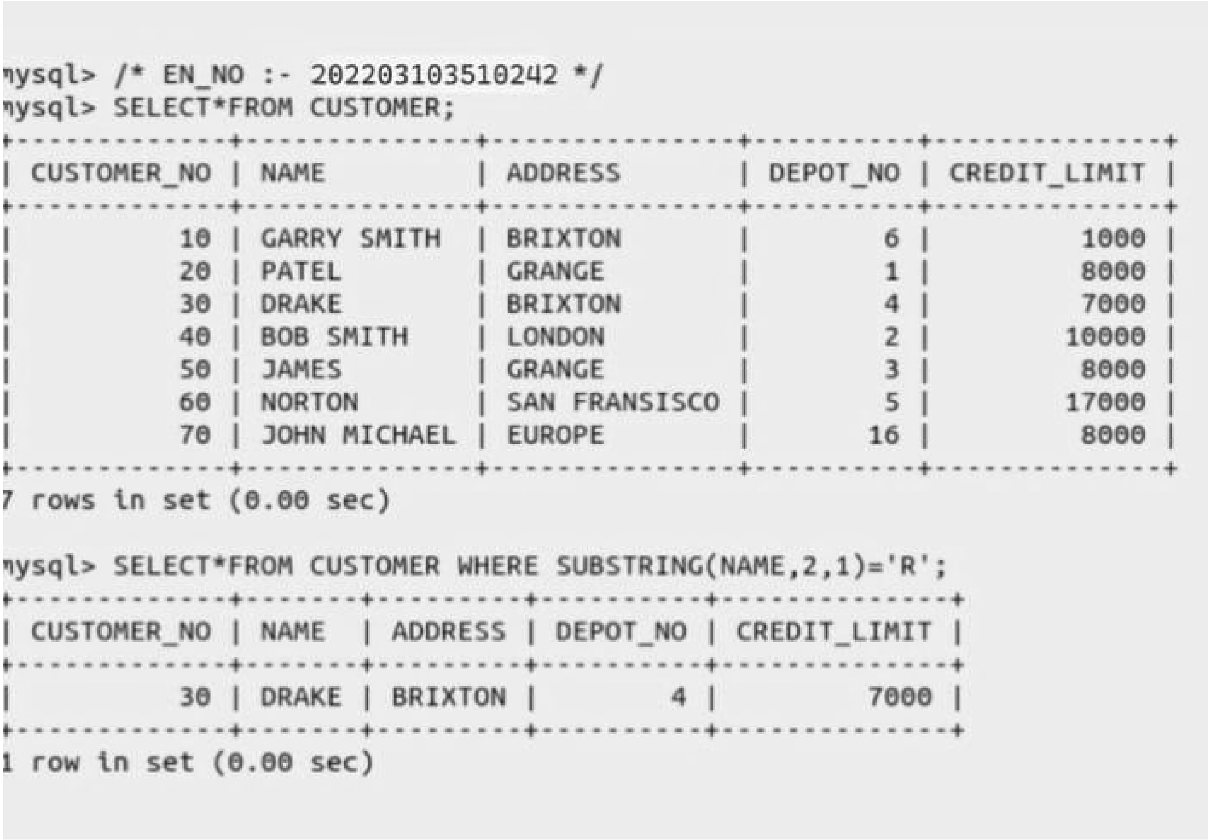
```
mysql> /* 202203103510242 */
mysql> SELECT*FROM PRODUCT;
+------------+-------+-------------+-------------------+-----------------+----------------+
| PRODUCT_NO | PRICE | SUPPLIER_NO | MARKETING_REP_NO  | SUPPLY_DEPOT_NO | DESCRIPTION    |
+------------+-------+-------------+-------------------+-----------------+----------------+
|        120 |  1200 |        1005 |                 5 |               6 | REDUCER        |
|        121 |  1500 |        1004 |                 3 |               1 | PLATE          |
|        122 |   700 |        1003 |                 2 |               4 | HANDLE         |
|        124 |   900 |        1005 |                 4 |              20 | WIDNET REMOVER |
|        136 |  1000 |        1001 |                 1 |               5 | SIZE WIDNET    |
|        137 | 15000 |        1002 |                 2 |              16 | SIZE WIDNET    |
+------------+-------+-------------+-------------------+-----------------+----------------+
6 rows in set (0.05 sec)

mysql> SELECT DESCRIPTION FROM PRODUCT ORDER BY DECRIPTION DESC;
ERROR 1054 (42S22): Unknown column 'DECRIPTION' in 'order clause'
mysql> SELECT DESCRIPTION FROM PRODUCT ORDER BY DESCRIPTION DESC;
+----------------+
| DESCRIPTION    |
+----------------+
| WIDNET REMOVER |
| SIZE WIDNET    |
| SIZE WIDNET    |
| REDUCER        |
| PLATE          |
| HANDLE         |
+----------------+
6 rows in set (0.00 sec)

mysql>
```

11) List the customer details with name ends with N.



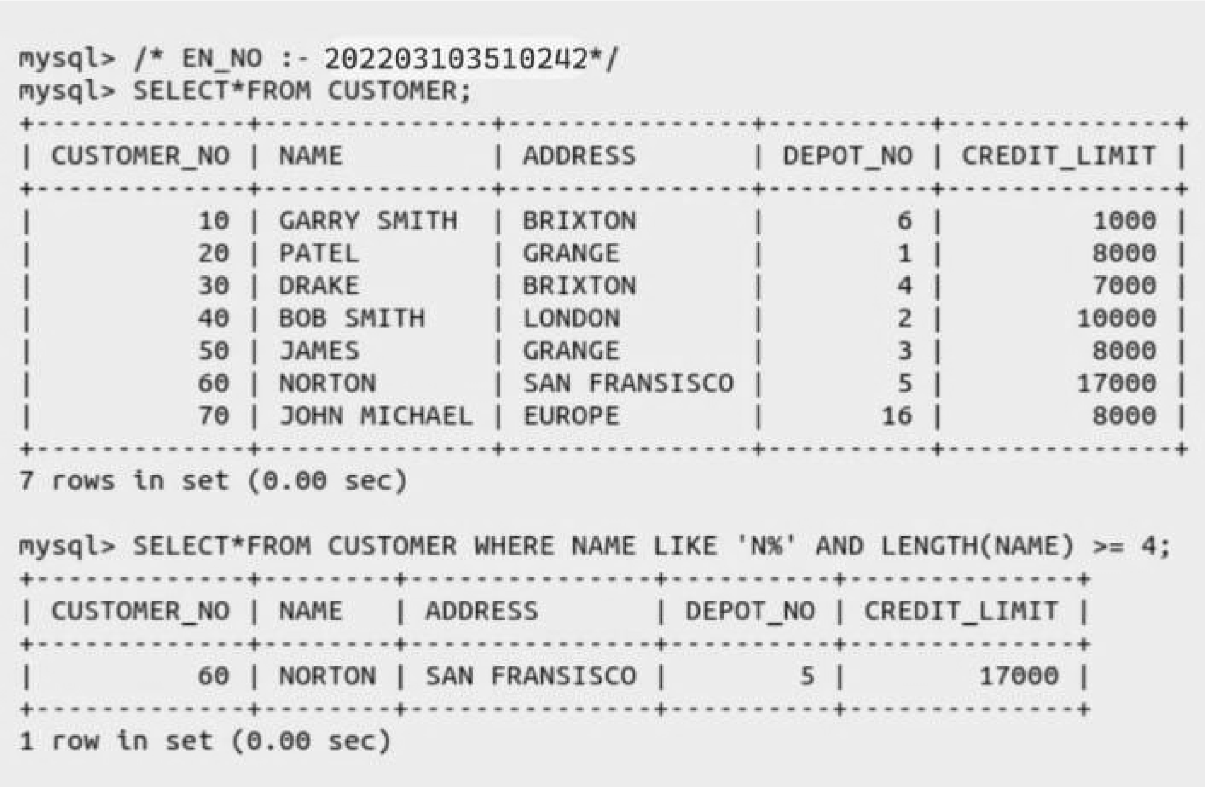
```
mysql> /* EN_NO :-202203103510242 */
mysql> SELECT*FROM CUSTOMER;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        6 |         1000 |
|          20 | PATEL        | GRANGE        |        1 |         8000 |
|          30 | DRAKE        | BRIXTON       |        4 |         7000 |
|          40 | BOB SMITH    | LONDON        |        2 |        10000 |
|          50 | JAMES        | GRANGE        |        3 |         8000 |
|          60 | NORTON       | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)

mysql> SELECT*FROM CUSTOMER WHERE NAME LIKE '%N';
+-------------+--------+---------------+----------+--------------+
| CUSTOMER_NO | NAME   | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------+---------------+----------+--------------+
|          60 | NORTON | SAN FRANSISCO |        5 |        17000 |
+-------------+--------+---------------+----------+--------------+
1 row in set (0.00 sec)
```

12) List the customers details with a CustomerName that have “r”; in the second position.



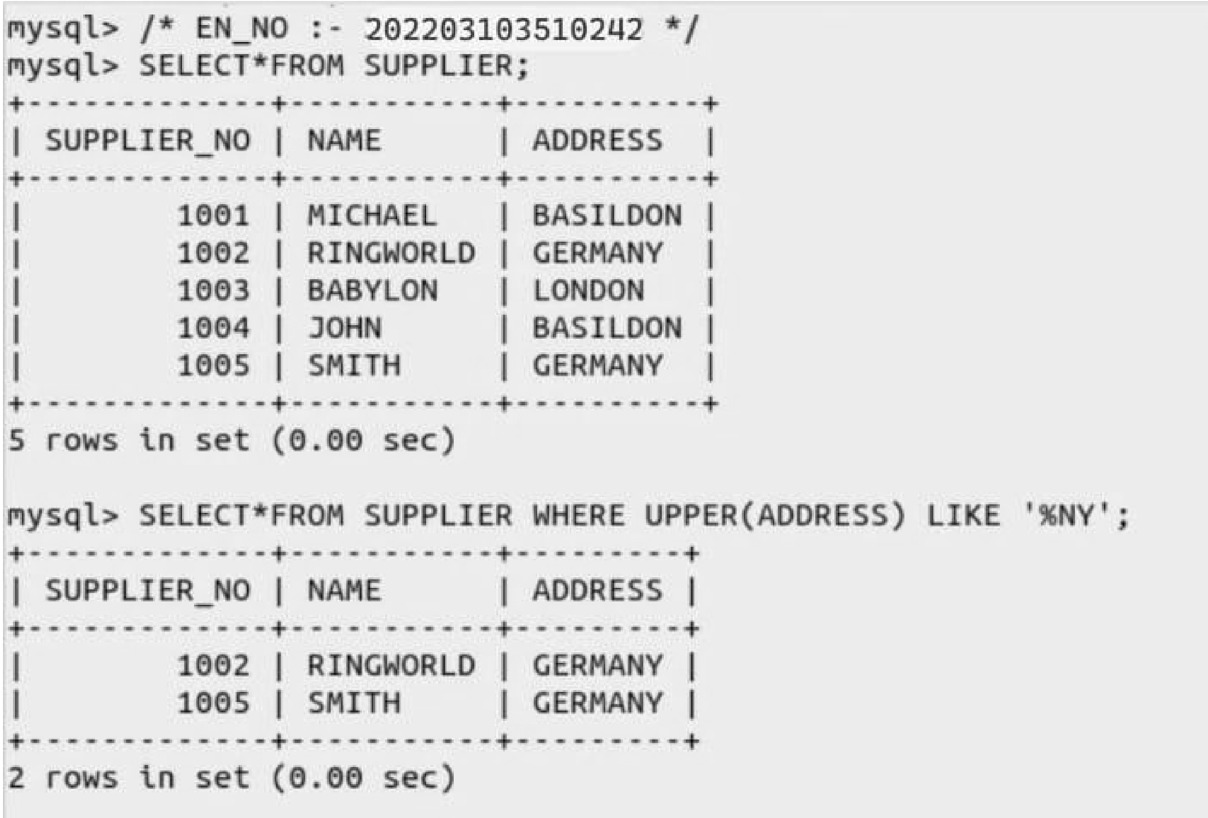
```
mysql> /* EN_NO :- 202203103510242 */
mysql> SELECT*FROM CUSTOMER;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        6 |         1000 |
|          20 | PATEL        | GRANGE        |        1 |         8000 |
|          30 | DRAKE        | BRIXTON       |        4 |         7000 |
|          40 | BOB SMITH    | LONDON        |        2 |        10000 |
|          50 | JAMES        | GRANGE        |        3 |         8000 |
|          60 | NORTON       | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)

mysql> SELECT*FROM CUSTOMER WHERE SUBSTRING(NAME,2,1)='R';
+-------------+-------+---------+----------+--------------+
| CUSTOMER_NO | NAME  | ADDRESS | DEPOT_NO | CREDIT_LIMIT |
+-------------+-------+---------+----------+--------------+
|          30 | DRAKE | BRIXTON |        4 |         7000 |
+-------------+-------+---------+----------+--------------+
1 row in set (0.00 sec)
```

13) List the customers with a CustomerName that starts with “N” and are at least 4 characters in length.



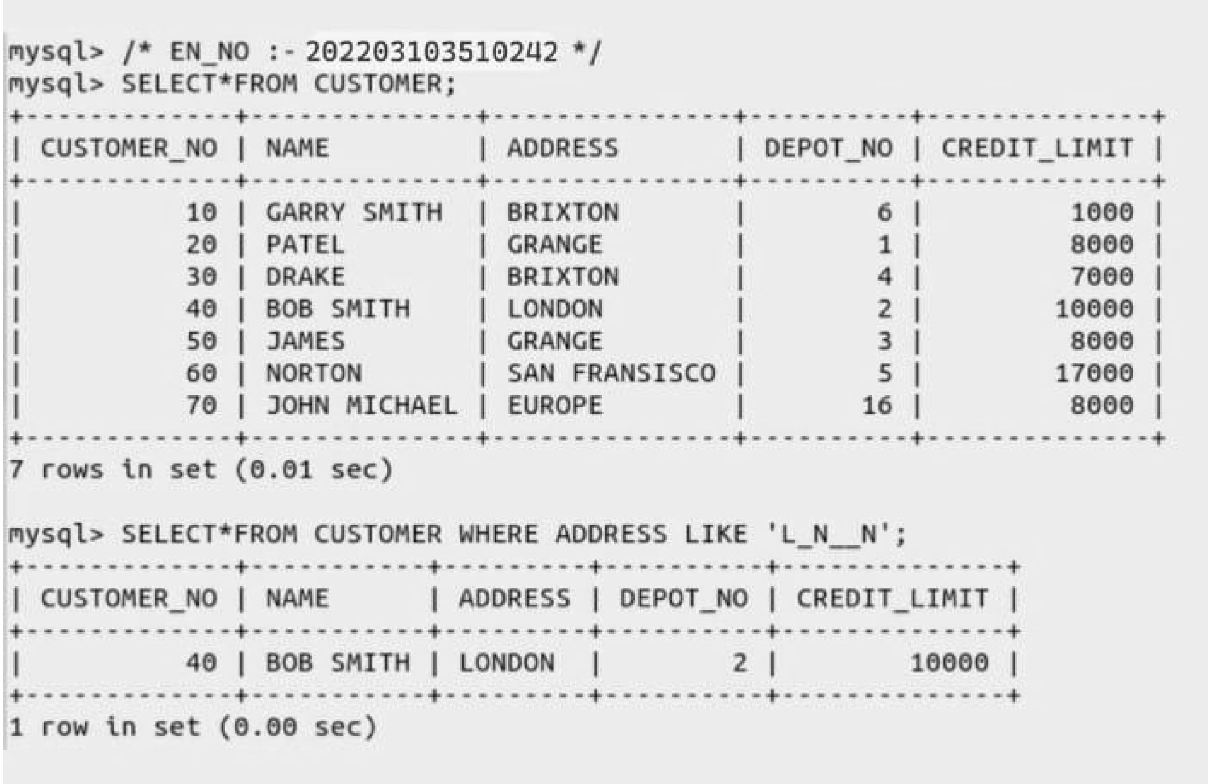
```
mysql> /* EN_NO :- 202203103510242*/
mysql> SELECT*FROM CUSTOMER;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        6 |         1000 |
|          20 | PATEL        | GRANGE        |        1 |         8000 |
|          30 | DRAKE        | BRIXTON       |        4 |         7000 |
|          40 | BOB SMITH    | LONDON        |        2 |        10000 |
|          50 | JAMES        | GRANGE        |        3 |         8000 |
|          60 | NORTON       | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)

mysql> SELECT*FROM CUSTOMER WHERE NAME LIKE 'N%' AND LENGTH(NAME) >= 4;
+-------------+--------+---------------+----------+--------------+
| CUSTOMER_NO | NAME   | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------+---------------+----------+--------------+
|          60 | NORTON | SAN FRANSISCO |        5 |        17000 |
+-------------+--------+---------------+----------+--------------+
1 row in set (0.00 sec)
```

14) Find all suppliers with a City containing the pattern “ny”.



```
mysql> /* EN_NO :- 202203103510242 */
mysql> SELECT*FROM SUPPLIER;
+-------------+----------+---------+
| SUPPLIER_NO | NAME     | ADDRESS  |
+-------------+----------+---------+
|        1001 | MICHAEL   | BASILDON |
|        1002 | RINGWORLD | GERMANY  |
|        1003 | BABYLON   | LONDON   |
|        1004 | JOHN      | BASILDON |
|        1005 | SMITH     | GERMANY  |
+-------------+----------+---------+
5 rows in set (0.00 sec)

mysql> SELECT*FROM SUPPLIER WHERE UPPER(ADDRESS) LIKE '%NY';
+-------------+-----------+---------+
| SUPPLIER_NO | NAME      | ADDRESS |
+-------------+-----------+---------+
|        1002 | RINGWORLD | GERMANY |
|        1005 | SMITH     | GERMANY |
+-------------+-----------+---------+
2 rows in set (0.00 sec)
```

15) selects all customers with a City starting with “L”, followed by any character, followed by “n”, followed by any character, followed by “n”.



```
mysql> /* EN_NO :- 202203103510242 */
mysql> SELECT*FROM CUSTOMER;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        6 |         1000 |
|          20 | PATEL        | GRANGE        |        1 |         8000 |
|          30 | DRAKE        | BRIXTON       |        4 |         7000 |
|          40 | BOB SMITH    | LONDON        |        2 |        10000 |
|          50 | JAMES        | GRANGE        |        3 |         8000 |
|          60 | NORTON       | SAN FRANSISCO |        5 |        17000 |
|          70 | JOHN MICHAEL | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.01 sec)

mysql> SELECT*FROM CUSTOMER WHERE ADDRESS LIKE 'L_N__N';
+-------------+-----------+---------+----------+--------------+
| CUSTOMER_NO | NAME      | ADDRESS | DEPOT_NO | CREDIT_LIMIT |
+-------------+-----------+---------+----------+--------------+
|          40 | BOB SMITH | LONDON  |        2 |        10000 |
+-------------+-----------+---------+----------+--------------+
1 row in set (0.00 sec)
```