Practical No.1

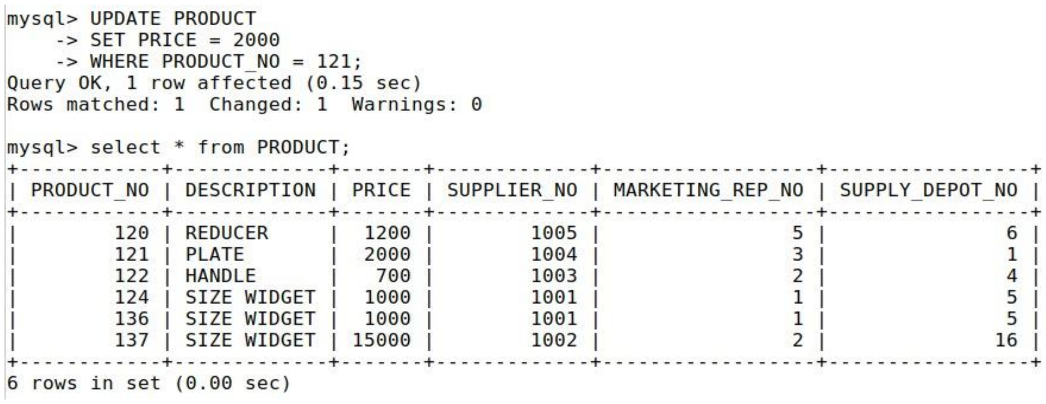
Aim: To implement Basic SQL commands and to access &amp; modify Data using SQL. Create and populate database using Data Definition Language (DDL) and DML Commands.

Theory: Modifying Data: Changing the price of a specific product, updating credit limits for customers meeting certain criteria, and altering the size of a column in an existing table.

Schema Management: Creating a new table with predefined attributes and formats, adding a new field to an existing table, and removing a field from a table.

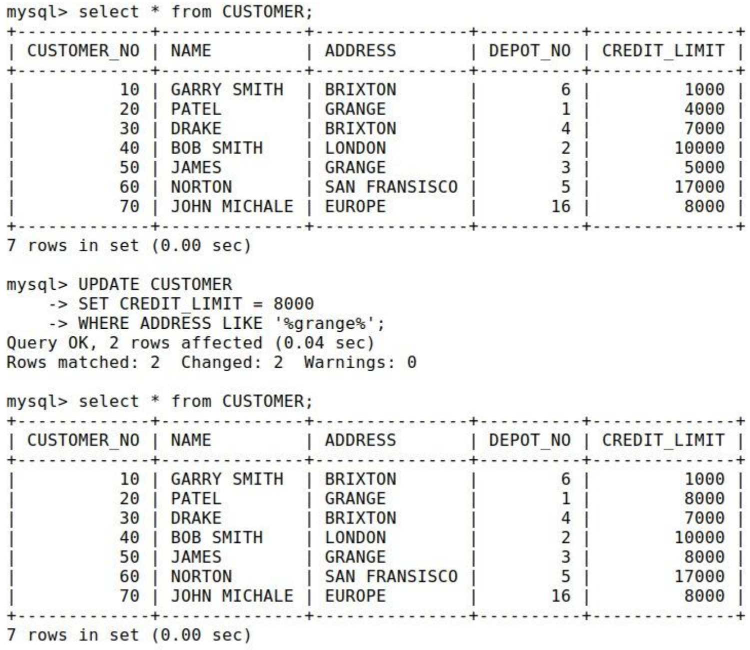
Data Retrieval: Displaying the structure and content of a table, retrieving specific records using conditions, and listing information from multiple tables with various criteria.

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



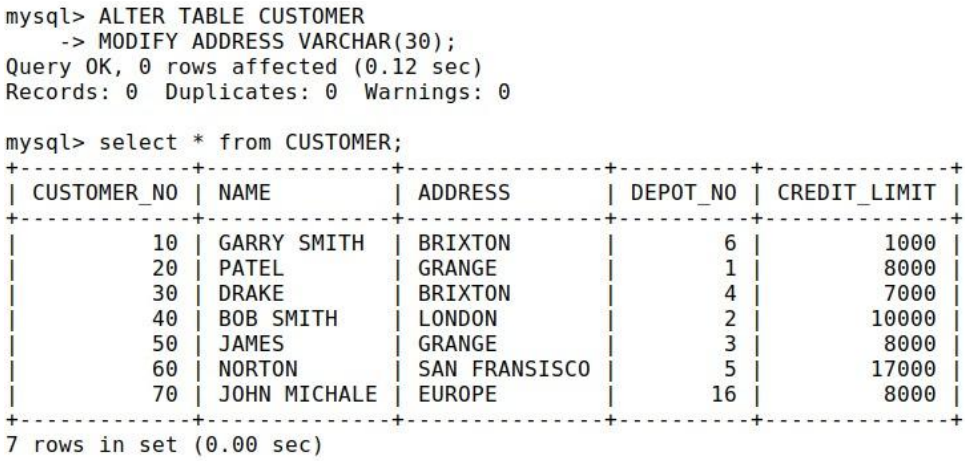
```
mysql> UPDATE PRODUCT
    -> SET PRICE = 2000
    -> WHERE PRODUCT_NO = 121;
Query OK, 1 row affected (0.15 sec)
Rows matched: 1  Changed: 1  Warnings: 0

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 | SIZE WIDGET |  1000 |        1001 |                 1 |               5 |
|        136 | SIZE WIDGET |  1000 |        1001 |                 1 |               5 |
|        137 | SIZE WIDGET | 15000 |        1002 |                 2 |              16 |
+------------+-------------+-------+-------------+-------------------+-----------------+
6 rows in set (0.00 sec)
```

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



```
mysql> select * from CUSTOMER;
+-------------+--------------+---------------+----------+--------------+
| CUSTOMER_NO | NAME         | ADDRESS       | DEPOT_NO | CREDIT_LIMIT |
+-------------+--------------+---------------+----------+--------------+
|          10 | GARRY SMITH  | BRIXTON       |        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 MICHALE | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)

mysql> UPDATE CUSTOMER
    -> SET CREDIT_LIMIT = 8000
    -> WHERE ADDRESS LIKE '%grange%';
Query OK, 2 rows affected (0.04 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 MICHALE | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)
```

Queries:(3) Change the size of customer address to 30.



```
mysql> ALTER TABLE CUSTOMER
    -> MODIFY ADDRESS VARCHAR(30);
Query OK, 0 rows affected (0.12 sec)
Records: 0  Duplicates: 0  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 MICHALE | EUROPE        |       16 |         8000 |
+-------------+--------------+---------------+----------+--------------+
7 rows in set (0.00 sec)
```

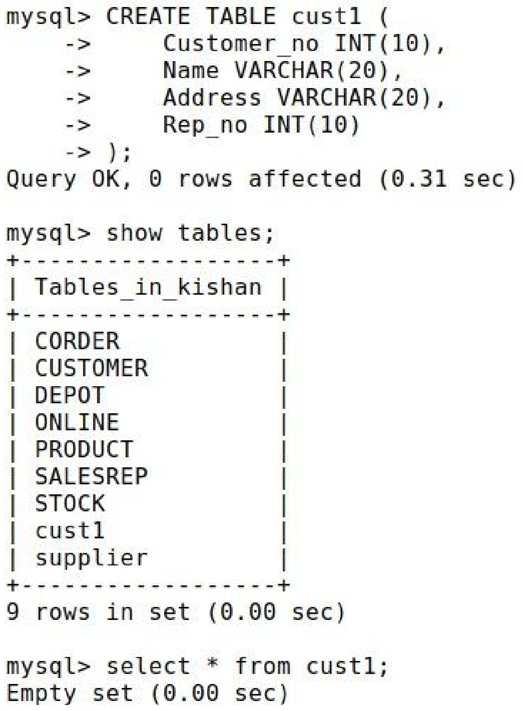
Queries:(4) Create a table cust1 with the attributes and formats.

Customer_no number (10)

Name varchar2 (20)

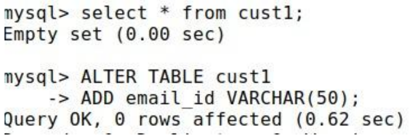
Address varchar2 (20)

Rep_no number (10)



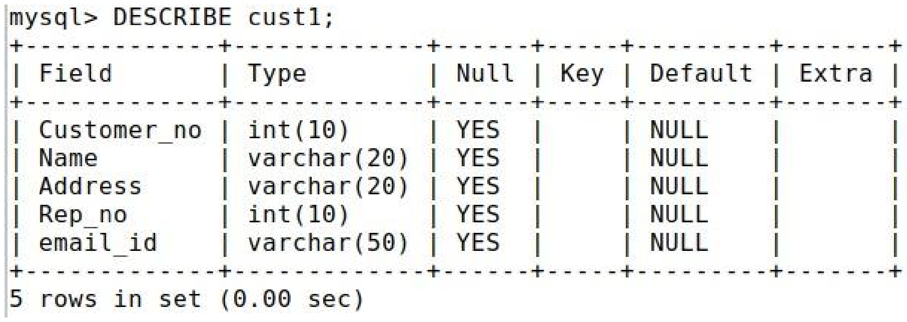
```
mysql> CREATE TABLE cust1 (
    ->     Customer_no INT(10),
    ->     Name VARCHAR(20),
    ->     Address VARCHAR(20),
    ->     Rep_no INT(10)
    -> );
Query OK, 0 rows affected (0.31 sec)

mysql> show tables;
+------------------+
| Tables_in_kishan |
+------------------+
| CORDER           |
| CUSTOMER         |
| DEPOT            |
| ONLINE           |
| PRODUCT          |
| SALESREP         |
| STOCK            |
| cust1            |
| supplier         |
+------------------+
9 rows in set (0.00 sec)

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

Queries:(5) Add new field email id in cust1 table.



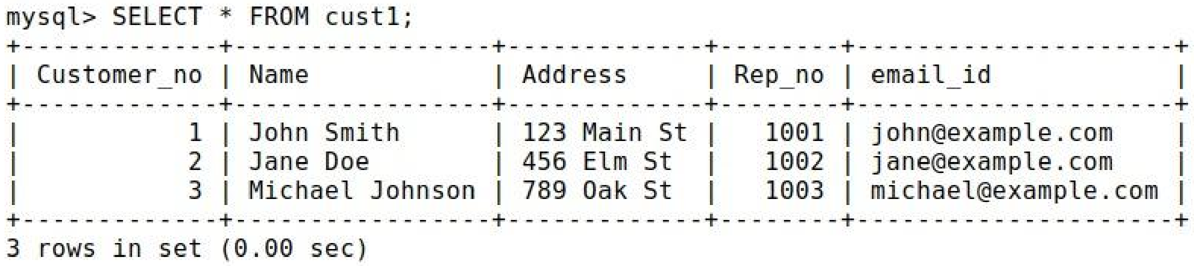
```
mysql> select * from cust1;
Empty set (0.00 sec)

mysql> ALTER TABLE cust1
    -> ADD email_id VARCHAR(50);
Query OK, 0 rows affected (0.62 sec)
```

Queries:(6) Display the structure of cust1 table.



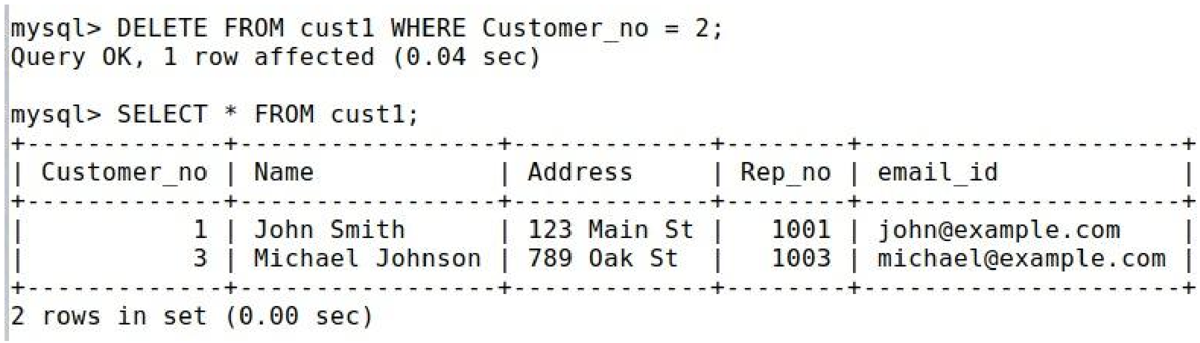
```
mysql> DESCRIBE cust1;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| Customer_no | int(10)     | YES  |     | NULL    |       |
| Name        | varchar(20) | YES  |     | NULL    |       |
| Address     | varchar(20) | YES  |     | NULL    |       |
| Rep_no      | int(10)     | YES  |     | NULL    |       |
| email_id    | varchar(50) | YES  |     | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

Queries:(7) Display the content of cust1 table.



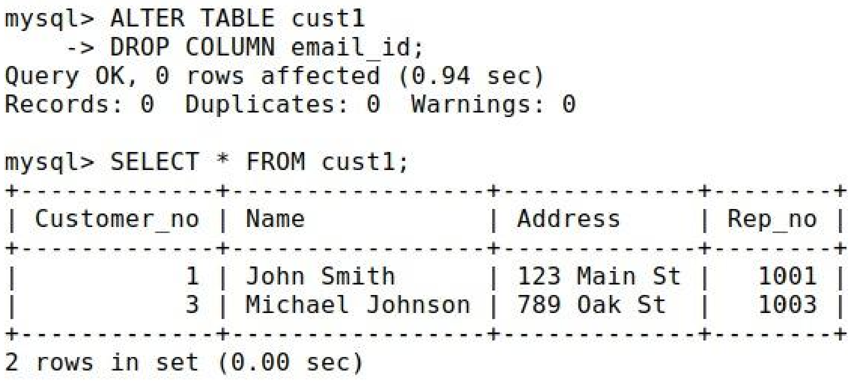
```
mysql> SELECT * FROM cust1;
+-------------+-----------------+-------------+--------+---------------------+
| Customer_no | Name            | Address     | Rep_no | email_id            |
+-------------+-----------------+-------------+--------+---------------------+
|           1 | John Smith      | 123 Main St |   1001 | john@example.com    |
|           2 | Jane Doe        | 456 Elm St  |   1002 | jane@example.com    |
|           3 | Michael Johnson | 789 Oak St  |   1003 | michael@example.com |
+-------------+-----------------+-------------+--------+---------------------+
3 rows in set (0.00 sec)
```

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



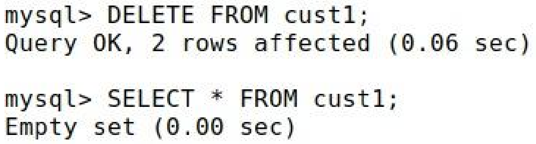
```
mysql> DELETE FROM cust1 WHERE Customer_no = 2;
Query OK, 1 row affected (0.04 sec)

mysql> SELECT * FROM cust1;
+-------------+-----------------+-------------+--------+---------------------+
| Customer_no | Name            | Address     | Rep_no | email_id            |
+-------------+-----------------+-------------+--------+---------------------+
|           1 | John Smith      | 123 Main St |   1001 | john@example.com    |
|           3 | Michael Johnson | 789 Oak St  |   1003 | michael@example.com |
+-------------+-----------------+-------------+--------+---------------------+
2 rows in set (0.00 sec)
```

Queries:(9) Delete email id field from cust1 table.



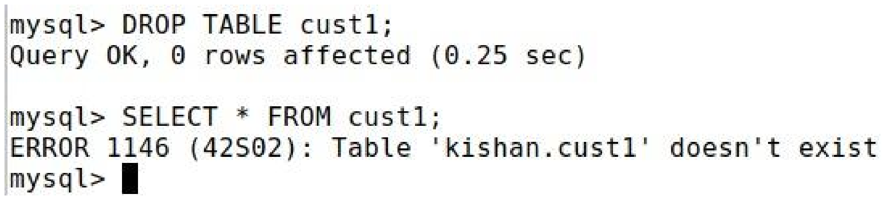
```
mysql> ALTER TABLE cust1
    -> DROP COLUMN email_id;
Query OK, 0 rows affected (0.94 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM cust1;
+-------------+-----------------+-------------+--------+
| Customer_no | Name            | Address     | Rep_no |
+-------------+-----------------+-------------+--------+
|           1 | John Smith      | 123 Main St |   1001 |
|           3 | Michael Johnson | 789 Oak St  |   1003 |
+-------------+-----------------+-------------+--------+
2 rows in set (0.00 sec)
```

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



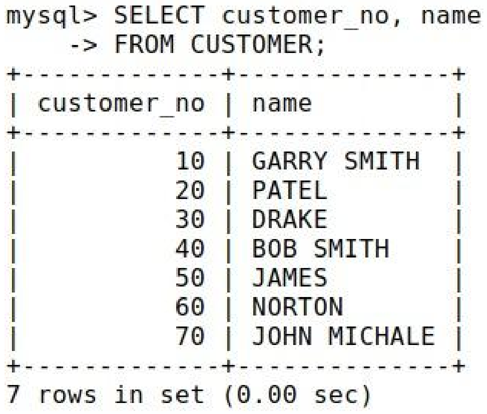
```
mysql> DELETE FROM cust1;
Query OK, 2 rows affected (0.06 sec)

mysql> SELECT * FROM cust1;
Empty set (0.00 sec)
```

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



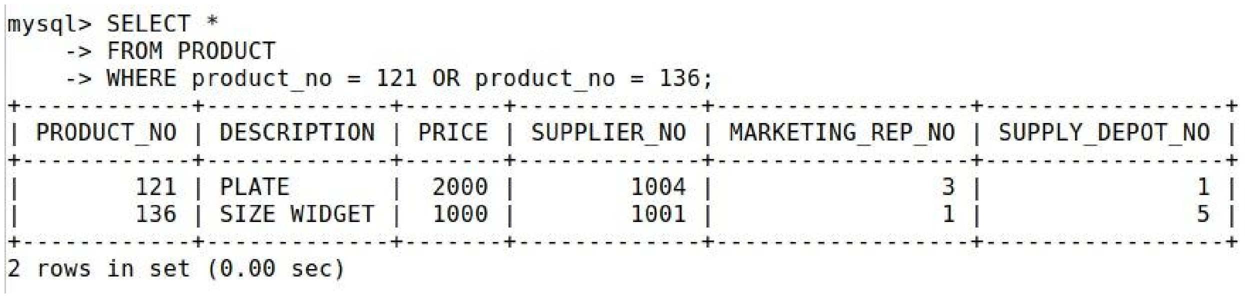
```
mysql> DROP TABLE cust1;
Query OK, 0 rows affected (0.25 sec)

mysql> SELECT * FROM cust1;
ERROR 1146 (42S02): Table 'kishan.cust1' doesn't exist
mysql> █
```

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



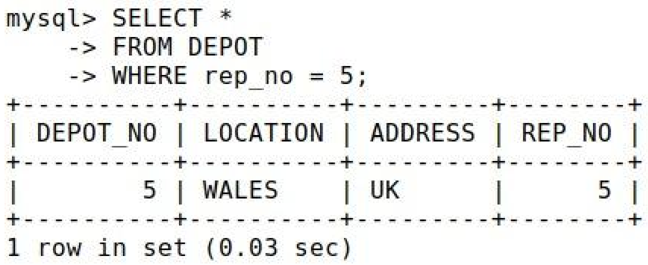
```
mysql> SELECT customer_no, name
    -> FROM CUSTOMER;
+-------------+--------------+
| customer_no | name         |
+-------------+--------------+
|          10 | GARRY SMITH  |
|          20 | PATEL        |
|          30 | DRAKE        |
|          40 | BOB SMITH    |
|          50 | JAMES    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

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



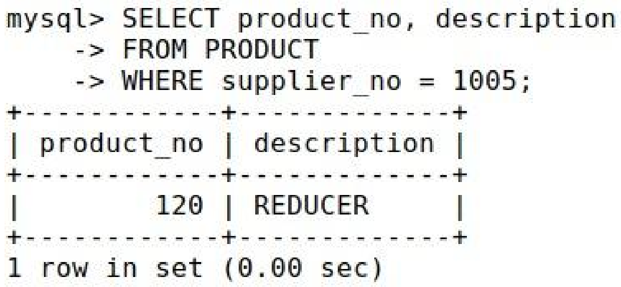
```
mysql> SELECT *
    -> FROM PRODUCT
    -> WHERE product_no = 121 OR product_no = 136;
+------------+-------------+-------+-------------+------------------+-----------------+
| PRODUCT_NO | DESCRIPTION | PRICE | SUPPLIER_NO | MARKETING_REP_NO | SUPPLY_DEPOT_NO |
+------------+-------------+-------+-------------+------------------+-----------------+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

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



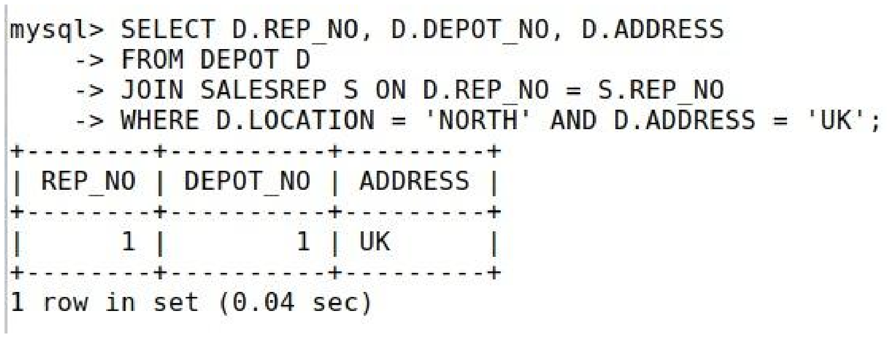
```
mysql> SELECT *
    -> FROM DEPOT
    -> WHERE rep_no = 5;
+----------+----------+---------+--------+
| DEPOT_NO | LOCATION | ADDRESS | REP_NO |
+----------+----------+---------+--------+
|        5 | WALES    | UK      |      5 |
+----------+----------+---------+--------+
1 row in set (0.03 sec)
```

Queries:(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     |
+------------+-------------+
1 row in set (0.00 sec)
```

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



```
mysql> SELECT D.REP_NO, D.DEPOT_NO, D.ADDRESS
    -> FROM DEPOT D
    -> JOIN SALESREP S ON D.REP_NO = S.REP_NO
    -> WHERE D.LOCATION = 'NORTH' AND D.ADDRESS = 'UK';
+--------+----------+---------+
| REP_NO | DEPOT_NO | ADDRESS |
+--------+----------+---------+
|      1 |        1 | UK      |
+--------+----------+---------+
1 row in set (0.04 sec)
```

Conclusion:

In this SQL practical exercise, we performed various database operations, including data modification, table creation, schema alteration, and querying. These actions demonstrated the fundamental capabilities of SQL for managing relational databases. Key takeaways include the ability to change values in existing records, modify table structures, add and remove fields, display table structure and contents, and perform data retrieval using SELECT statements with conditions. These skills are essential for effective database management and manipulation.