Code for Practical 5

```
MariaDB [lab6]> show tables
    -> ;
+-----------------+
| Tables_in_lab6 |
+-----------------+
| products        |
+-----------------+
1 row in set (0.001 sec)

MariaDB [lab6]> describe products;
+----------+------------------+------+-----+---------+----------------+
| Field    | Type             | Null | Key | Default | Extra          |
+----------+------------------+------+-----+---------+----------------+
| prodID   | int(10) unsigned | NO   | PRI | NULL    | auto_increment |
| prodCode | char(3)          | NO   |     |         |                |
| name     | varchar(30)      | NO   |     |         |                |
| qty      | int(10) unsigned | NO   |     | 0       |                |
| msrp     | decimal(10,2)    | NO   |     | 0.00    |                |
+----------+------------------+------+-----+---------+----------------+
5 rows in set (0.004 sec)

MariaDB [lab6]> █
```

Figure 1: The 25.) SHOW tables and 26.) DESCRIBE products commands

```
MariaDB [lab6]> INSERT INTO products VALUES (1234, 'xrt', 'xray tube', 20, 10000
.00);
Query OK, 1 row affected (0.011 sec)

MariaDB [lab6]> select * from products;
+--------+----------+-----------+-----+----------+
| prodID | prodCode | name      | qty | msrp     |
+--------+----------+-----------+-----+----------+
|   1234 | xrt      | xray tube |  20 | 10000.00 |
+--------+----------+-----------+-----+----------+
1 row in set (0.001 sec)

MariaDB [lab6]> █
```

Figure 2: The 28.) INSERT INTO products command and its outcome

```
MariaDB [lab6]> INSERT INTO products values(NULL, 'ecg', 'ecg pads', 20000, 10.00);
Query OK, 1 row affected (0.000 sec)

MariaDB [lab6]> INSERT INTO products values(NULL, 'ekg', 'ekg pads', 35000, 10.00);
Query OK, 1 row affected (0.001 sec)

MariaDB [lab6]> INSERT INTO products values(2345, 'eeg', 'head pad set', 200, 100.00);
Query OK, 1 row affected (0.001 sec)

MariaDB [lab6]> SELECT * from products
    -> ;
+--------+----------+--------------+-------+----------+
| prodID | prodCode | name         | qty   | msrp     |
+--------+----------+--------------+-------+----------+
|   1234 | xrt      | xray tube    |    20 | 10000.00 |
|   1235 | ecg      | ecg pads     | 20000 |    10.00 |
|   1236 | ekg      | ekg pads     | 35000 |    10.00 |
|   2345 | eeg      | head pad set |   200 |   100.00 |
+--------+----------+--------------+-------+----------+
4 rows in set (0.000 sec)
```

Figure 3: INSERT INTO commands for the next 3 rows (30.)

```
4 rows in set (0.001 sec)

MariaDB [lab6]> SELECT * FROM products WHERE msrp=10.00;
+--------+----------+-----------+-------+-------+
| prodID | prodCode | name      | qty   | msrp  |
+--------+----------+-----------+-------+-------+
|   1235 | ecg      | ecg pads  | 20000 | 10.00 |
|   1236 | ekg      | ekg pads  | 35000 | 10.00 |
+--------+----------+-----------+-------+-------+
2 rows in set (0.001 sec)

MariaDB [lab6]> SELECT * FROM products WHERE msrp=10.00 AND qty>30000;
+--------+----------+-----------+-------+-------+
| prodID | prodCode | name      | qty   | msrp  |
+--------+----------+-----------+-------+-------+
|   1236 | ekg      | ekg pads  | 35000 | 10.00 |
+--------+----------+-----------+-------+-------+
1 row in set (0.001 sec)

MariaDB [lab6]>
```

Figure 4: Filtered SELECT commands for 32.) and 33.)

```
MariaDB [lab6]> SELECT prodCode, qty FROM products;
+----------+-------+
| prodCode | qty   |
+----------+-------+
| xrt      |    20 |
| ecg      | 20000 |
| ekg      | 35000 |
| eeg      |   200 |
+----------+-------+
4 rows in set (0.001 sec)

MariaDB [lab6]>
```

Figure 5: Column Filtering command for 34.)

```
MariaDB [lab6]> SELECT prodCode, qty FROM products WHERE msrp=10.00 AND qty>30000;
+----------+-------+
| prodCode | qty   |
+----------+-------+
| ekg      | 35000 |
+----------+-------+
1 row in set (0.000 sec)
```

Figure 6: Filter Query for 35.)

```
MariaDB [lab6]> SELECT SUM(qty) FROM products;
+----------+
| SUM(qty) |
+----------+
|    55220 |
+----------+
1 row in set (0.001 sec)

MariaDB [lab6]> SELECT SUM(qty) FROM products WHERE msrp>50.00;
+----------+
| SUM(qty) |
+----------+
|      220 |
+----------+
1 row in set (0.000 sec)
```

Figure 7: Filter Queries for 36.) and 37.)

```
MariaDB [lab6]> SELECT max(qty) FROM products;
+----------+
| max(qty) |
+----------+
|    35000 |
+----------+
1 row in set (0.001 sec)

MariaDB [lab6]> SELECT min(qty) FROM products;
+----------+
| min(qty) |
+----------+
|       20 |
+----------+
1 row in set (0.001 sec)

MariaDB [lab6]> SELECT count(*) FROM products WHERE qty>100;
+----------+
| count(*) |
+----------+
|        3 |
+----------+
1 row in set (0.001 sec)

MariaDB [lab6]> SELECT avg(msrp) FROM products WHERE qty<25000;
+--------------+
| avg(msrp)    |
+--------------+
| 3370.000000  |
+--------------+
1 row in set (0.001 sec)
```

Figure 8: Filter Queries from 38.)

```
MariaDB [lab6]> SELECT * FROM products ORDER BY qty ASC;
+--------+----------+---------------+-------+----------+
| prodID | prodCode | name          | qty   | msrp     |
+--------+----------+---------------+-------+----------+
|   1234 | xrt      | xray tube     |    20 | 10000.00 |
|   2345 | eeg      | head pad set  |   200 |   100.00 |
|   1235 | ecg      | ecg pads      | 20000 |    10.00 |
|   1236 | ekg      | ekg pads      | 35000 |    10.00 |
+--------+----------+---------------+-------+----------+
4 rows in set (0.000 sec)
```

Figure 9: Filter Query from 39.)

```
MariaDB [lab6]> SELECT prodID, qty FROM products WHERE msrp>50.00 ORDER BY qty DESC;
+--------+-----+
| prodID | qty |
+--------+-----+
|   2345 | 200 |
|   1234 |  20 |
+--------+-----+
2 rows in set (0.001 sec)
```

Figure 10: Filter Query for 40.)

```
MariaDB [lab6]> UPDATE products SET qty=2000 WHERE prodID=1234;
Query OK, 1 row affected (0.001 sec)
Rows matched: 1  Changed: 1  Warnings: 0

MariaDB [lab6]> SELECT * FROM products WHERE prodID=1234;
+--------+----------+-----------+------+----------+
| prodID | prodCode | name      | qty  | msrp     |
+--------+----------+-----------+------+----------+
|   1234 | xrt      | xray tube | 2000 | 10000.00 |
+--------+----------+-----------+------+----------+
1 row in set (0.000 sec)

MariaDB [lab6]> DELETE FROM products WHERE prodID=1234
    -> ;
Query OK, 1 row affected (0.001 sec)

MariaDB [lab6]> SELECT * FROM products;
+--------+----------+--------------+-------+--------+
| prodID | prodCode | name         | qty   | msrp   |
+--------+----------+--------------+-------+--------+
|   1235 | ecg      | ecg pads     | 20000 |  10.00 |
|   1236 | ekg      | ekg pads     | 35000 |  10.00 |
|   2345 | eeg      | head pad set |   200 | 100.00 |
+--------+----------+--------------+-------+--------+
3 rows in set (0.000 sec)
```

Figure 11: Query 41.)- 43.)

```
MariaDB [lab6]> DELETE FROM products WHERE qty>30000;
Query OK, 1 row affected (0.001 sec)

MariaDB [lab6]> SELECT * FROM products;
+--------+----------+--------------+-------+--------+
| prodID | prodCode | name         | qty   | msrp   |
+--------+----------+--------------+-------+--------+
|   1235 | ecg      | ecg pads     | 20000 |  10.00 |
|   2345 | eeg      | head pad set |   200 | 100.00 |
+--------+----------+--------------+-------+--------+
2 rows in set (0.000 sec)
```

Figure 12: Query 44.) / 45.)

```
MariaDB [lab6]> ALTER TABLE products MODIFY column name varchar(40);
Query OK, 0 rows affected (0.099 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [lab6]> describe products;
+----------+------------------+------+-----+---------+----------------+
| Field    | Type             | Null | Key | Default | Extra          |
+----------+------------------+------+-----+---------+----------------+
| prodID   | int(10) unsigned | NO   | PRI | NULL    | auto_increment |
| prodCode | char(3)          | NO   |     |         |                |
| name     | varchar(40)      | YES  |     | NULL    |                |
| qty      | int(10) unsigned | NO   |     | 0       |                |
| msrp     | decimal(10,2)    | NO   |     | 0.00    |                |
+----------+------------------+------+-----+---------+----------------+
5 rows in set (0.002 sec)
```

Figure 13: Alter Table command for 46.)

```
MariaDB [lab6]> ALTER TABLE products DROP column NAME;
Query OK, 0 rows affected (0.037 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [lab6]> describe products;
+----------+-------------------+------+-----+---------+----------------+
| Field    | Type              | Null | Key | Default | Extra          |
+----------+-------------------+------+-----+---------+----------------+
| prodID   | int(10) unsigned  | NO   | PRI | NULL    | auto_increment |
| prodCode | char(3)           | NO   |     |         |                |
| qty      | int(10) unsigned  | NO   |     | 0       |                |
| msrp     | decimal(10,2)     | NO   |     | 0.00    |                |
+----------+-------------------+------+-----+---------+----------------+
4 rows in set (0.003 sec)

MariaDB [lab6]> ALTER TABLE products ADD name varchar(30);
Query OK, 0 rows affected (0.037 sec)
Records: 0  Duplicates: 0  Warnings: 0

MariaDB [lab6]> describe products;
+----------+-------------------+------+-----+---------+----------------+
| Field    | Type              | Null | Key | Default | Extra          |
+----------+-------------------+------+-----+---------+----------------+
| prodID   | int(10) unsigned  | NO   | PRI | NULL    | auto_increment |
| prodCode | char(3)           | NO   |     |         |                |
| qty      | int(10) unsigned  | NO   |     | 0       |                |
| msrp     | decimal(10,2)     | NO   |     | 0.00    |                |
| name     | varchar(30)       | YES  |     | NULL    |                |
+----------+-------------------+------+-----+---------+----------------+
5 rows in set (0.003 sec)
```

Figure 14: Drop column and Add Column commands for 48.) - 51.)

```python
#!/usr/bin/python

import mariadb

db_conn = mariadb.connect(host="localhost", user="sid", passwd="secret", db="lab6")
interct = db_conn.cursor()
interct.execute("INSERT INTO products VALUES (NULL, 'abc', 101, 1.99, 'test')")
db_conn.commit()
db_conn.close()
```

Figure 15: script6_1.py

```python
#!/usr/bin/python

import mariadb

db_conn = mariadb.connect(host="localhost", user="sid", passwd="secret", db="lab6")
interct = db_conn.cursor()
interct.execute("SELECT * FROM products")

for row in interct.fetchall():
    print(row)

db_conn.close()
```

Figure 16: script6_2.py

```
(venv) dsd66@raspberrypi:~/Desktop/lab6 $ sudo chmod +x script6_1.py
(venv) dsd66@raspberrypi:~/Desktop/lab6 $ python script6_1.py


        Database changed
        MariaDB [lab6]> SELECT * FROM products;
        +--------+----------+-------+--------+------+
        | prodID | prodCode | qty   | msrp   | name |
        +--------+----------+-------+--------+------+
        |   1235 | ecg      | 20000 |  10.00 | NULL |
        |   2345 | eeg      |   200 | 100.00 | NULL |
        |   1238 | abc      |   101 |   1.99 | test |
        +--------+----------+-------+--------+------+
        3 rows in set (0.001 sec)
```

Figure 17: Running script6_1.py

```
(venv) dsd66@raspberrypi:~/Desktop/lab6 $ sudo chmod +x script6_2.py
(venv) dsd66@raspberrypi:~/Desktop/lab6 $ python script6_2.py
(1235, 'ecg', 20000, Decimal('10.00'), None)
(2345, 'eeg', 200, Decimal('100.00'), None)
(1238, 'abc', 101, Decimal('1.99'), 'test')
```

Figure 18: Running script6_2.py