ASSIGNMENT 1

AKILESH K

Task1

1)

```
mysql> CREATE TABLE customers (
    ->
    ->    customerid INT,
    ->    firstname varchar(25),
    ->    lastname varchar(25),
    ->    email varchar(35),
    ->    phone varchar(20),
    ->    address varchar(25),
    ->    PRIMARY KEY (customerid) );
Query OK, 0 rows affected (0.03 sec)
```

```
mysql> CREATE TABLE products(
    ->    productid int,
    ->    productname varchar(25),
    ->    description TEXT,
    ->    price double,
    ->    PRIMARY KEY (productid)
    -> ) ;
Query OK, 0 rows affected (0.04 sec)
```

```
mysql> CREATE TABLE orders (
    ->  orderid INT,
    -> customerid INT,
    -> orderdate DATE,
    -> totalamount DOUBLE,
    -> PRIMARY KEY (orderid),
    -> FOREIGN KEY (customerid) REFERENCES customers(customerid)
    ->
    -> );
Query OK, 0 rows affected (0.07 sec)
```

```
ERROR 1072 (42000). Key column 'orderdetails' doesn't exist in table
mysql> CREATE TABLE orderdetails (
    -> orderdetailsid INT,
    -> orderid INT,
    -> productid INT,
    -> quantity INT,
    -> PRIMARY KEY (orderdetailsid),
    -> FOREIGN KEY (orderid) REFERENCES orders(orderid),
    ->
    -> FOREIGN KEY (productid) REFERENCES products(productid)
    ->
    -> );
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> CREATE TABLE inventory (
    -> inventoryid INT,
    -> productid INT,
    -> quantityinstock INT,
    -> laststockupdate DATE,
    -> PRIMARY KEY (inventoryid),
    -> FOREIGN KEY (productid) REFERENCES products(productid)
    ->
    -> );
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> INSERT INTO customers (customerid,firstname,lastname,email,phone,address)
    -> VALUES
    ->  ("2","Benjamin","May","benjamin@icloud.net","1-573-762-5734","Ap #774-4948 Hendrerit Av."),
    ->  ("10","Jonah","Boyle","jonah2869@yahoo.org","(555) 377-2867","3852 In, Rd."),
    ->  ("7","Burton","Hicks","burton2976@protonmail.ca","(889) 371-0537","924-9041 Nullam Rd."),
    ->  ("5","Aiko","Barry","aiko@outlook.com","1-344-918-8823","2780 Non, Street"),
    ->  ("9","Lani","Moon","lani6109@protonmail.com","(225) 833-2432","743-1961 Sapien Road");
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO products (productid, productname, description, price)
    ->  VALUES  ("32", "imac", "pc", "30"),
    -> ("44", "iphone", "red", "250"),
    -> ("65", "earpods", "white", "40"),
    -> ("73", "smartwatch", "esim", "300"),
    -> ("23", "keyboard", "gaming", "1000");
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO orders (orderid, customerid, orderdate, totalamount)
    ->    VALUES  ("331", "2", "2023-07-21", "300"),
    -> ("638", "10", "2023-11-30", "1000"),
    -> ("524", "9", "2023-12-05", "500"),
    -> ("742", "5", "2023-11-13", "700"),
    -> ("937", "9", "2023-09-26", "2000") ;
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO orderdetails (orderdetailsid, orderid, productid, quantity)
    ->    VALUES  ("837", "331", "32", "10"),
    -> ("625", "638", "44", "2"),
    -> ("807", "524", "65", "8"),
    -> ("532", "742", "73", "22"),
    -> ("972", "937", "23", "5")
    -> ;
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO inventory (inventoryid, productid, quantityinstock, laststockupdate)
    ->    VALUES  ("4235", "32", "19", "2023-08-28"),
    -> ("7452", "44", "10", "2023-12-01"),
    -> ("8363", "65", "30", "2023-12-07"),
    -> ("6746", "73", "100", "2023-11-30"),
    -> ("2679", "23", "25", "2023-10-13") ;
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

2)

```
mysql> show tables;
+--------------------+
| Tables_in_techshop |
+--------------------+
| customers          |
| inventory          |
| orderdetails       |
| orders             |
| products           |
+--------------------+
5 rows in set (0.00 sec)
```

3)

```
+----------------+        +----------------+        +----------------+        +------------------+
|   Customers    |        |    Products    |        |    Orders      |        |  Order Details   |
+----------------+        +----------------+        +----------------+        +------------------+
| customerid Pk|1----*| productid  Pk|1----*| orderid    Pk|1-----| orderdetailsid pk|
| firstname      |        | productname    |        | customerid FK  |        |  orderid         |
| lastname       |        | description    |        | orderdate      |        | productid FK     |
| email          |        | price          |        | totalamount    |        | quantity         |
| phone          |        +----------------+        +----------------+        +------------------+
| address        |
+----------------+

+--------------+
|  Inventory   |
+--------------+
| inventoryidpk|
| productid fk |1-----|
| quantityinstock |
| laststockupdate |
+--------------+
```

Task 2

1)

```
mysql> select firstname,lastname,email from customers;
+-----------+----------+---------------------------+
| firstname | lastname | email                     |
+-----------+----------+---------------------------+
| Benjamin  | May      | benjamin@icloud.net       |
| Aiko      | Barry    | aiko@outlook.com          |
| Burton    | Hicks    | burton2976@protonmail.ca  |
| Lani      | Moon     | lani6109@protonmail.com   |
| Jonah     | Boyle    | jonah2869@yahoo.org       |
+-----------+----------+---------------------------+
5 rows in set (0.00 sec)
```

2)

```
mysql> select orders.orderid ,orders.orderdate,customers.firstname,customers.lastname from customers
,orders where customers.customerid=orders.customerid;
+---------+------------+-----------+----------+
| orderid | orderdate  | firstname | lastname |
+---------+------------+-----------+----------+
|     331 | 2023-07-21 | Benjamin  | May      |
|     742 | 2023-11-13 | Aiko      | Barry    |
|     524 | 2023-12-05 | Lani      | Moon     |
|     937 | 2023-09-26 | Lani      | Moon     |
|     638 | 2023-11-30 | Jonah     | Boyle    |
+---------+------------+-----------+----------+
5 rows in set (0.00 sec)
```

3)

```
mysql> INSERT INTO customers (customerid,firstname,lastname,email,phone,address)
    -> VALUES
    -> ("2","Benjamin","May","benjamin@icloud.net","1-573-762-5734","Ap #774-4948 Hendrerit Av.")
```

4)

```
mysql> update products set price=(price *0.1)+price ;
Query OK, 5 rows affected (0.02 sec)
Rows matched: 5  Changed: 5  Warnings: 0

mysql> select * from products;
+-----------+-------------+-------------+-------+
| productid | productname | description | price |
+-----------+-------------+-------------+-------+
|        23 | keyboard    | gaming      |  1100 |
|        32 | imac        | pc          |    33 |
|        44 | iphone      | red         |   275 |
|        65 | earpods     | white       |    44 |
|        73 | smartwatch  | esim        |   330 |
+-----------+-------------+-------------+-------+
5 rows in set (0.00 sec)
```

5)

```
mysql> DELETE FROM OrderDetails
    -> WHERE orderid = 3
```

6)

```
mysql> INSERT INTO orders (orderid, customerid, orderdate, totalamount)
    -> VALUES  ("331", "2", "2023-07-21", "300"),
```

7)

```
mysql> update customers set address="st george street,12" where customerid=10;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

8)

```
mysql> update orders,orderdetails,products set orders.totalamount=products.price*orderdetails.quanti
ty where orderdetails.productid=products.productid and orders.orderid=orderdetails.orderid;
Query OK, 5 rows affected (0.02 sec)
Rows matched: 5  Changed: 5  Warnings: 0
```

```
mysql> select * from orders;
+---------+------------+------------+-------------+
| orderid | customerid | orderdate  | totalamount |
+---------+------------+------------+-------------+
|     331 |          2 | 2023-07-21 |         330 |
|     524 |          9 | 2023-12-05 |         352 |
|     638 |         10 | 2023-11-30 |         550 |
|     742 |          5 | 2023-11-13 |        7260 |
|     937 |          9 | 2023-09-26 |        5500 |
+---------+------------+------------+-------------+
5 rows in set (0.00 sec)
```

9)

```
mysql> INSERT INTO orders (orderid, customerid, orderdate, totalamount)
    ->   VALUES  ("331", "2", "2023-07-21", "300"),
```

10)

```
mysql> INSERT INTO orders (orderid, customerid, orderdate, totalamount)
    ->   VALUES  ("331", "2", "2023-07-21", "300"),
```

11)

12)

```
mysql> UPDATE Customers
    -> SET number_of_orders = (
    ->      SELECT COUNT(*)
    ->      FROM Orders
    ->      WHERE Orders.customerid = Customers.customerid
    -> );
```

Task 3

1)

```
mysql> SELECT o.orderid,o.orderdate,o.totalamount,c.firstname AS customer_firstname,c.lastname AS customer_lastname FROM
 orders o JOIN customers c ON o.customerid = c.customerid;
+---------+------------+-------------+--------------------+-------------------+
| orderid | orderdate  | totalamount | customer_firstname | customer_lastname |
+---------+------------+-------------+--------------------+-------------------+
|     331 | 2023-07-21 |         330 | Benjamin           | May               |
|     524 | 2023-12-05 |         352 | Lani               | Moon              |
|     638 | 2023-11-30 |         550 | Jonah              | Boyle             |
|     742 | 2023-11-13 |        7260 | Aiko               | Barry             |
|     937 | 2023-09-26 |        5500 | Lani               | Moon              |
+---------+------------+-------------+--------------------+-------------------+
5 rows in set (0.04 sec)
```

2)

```
mysql> SELECT pr.productid,pr.productname,SUM(od.quantity * pr.price) AS total_revenue FROM orderdetails od JOIN
products pr ON od.productid = pr.productid JOIN orders o ON od.orderid = o.orderid JOIN customers c ON o.customer
id = c.customerid JOIN inventory i ON pr.productid = i.productid GROUP BY pr.productid;
+-----------+-------------+---------------+
| productid | productname | total_revenue |
+-----------+-------------+---------------+
|        73 | smartwatch  |          7260 |
|        44 | iphone      |           550 |
|        65 | earpods     |           352 |
|        32 | imac        |           330 |
|        23 | keyboard    |          5500 |
+-----------+-------------+---------------+
5 rows in set (0.01 sec)

mysql>
```

3)

```
mysql> SELECT c.customerid,c.firstname,c.lastname FROM customers c WHERE EXISTS (SELECT 1 FROM orders
 o WHERE o.customerid = c.customerid);
+------------+-----------+----------+
| customerid | firstname | lastname |
+------------+-----------+----------+
|          2 | Benjamin  | May      |
|          5 | Aiko      | Barry    |
|          9 | Lani      | Moon     |
|         10 | Jonah     | Boyle    |
+------------+-----------+----------+
4 rows in set (0.00 sec)
```

4)

```
mysql> SELECT pr.productid,pr.productname, SUM(od.quantity) AS total_quantity_ordered FROM orderdetails
 od JOIN products pr ON od.productid = pr.productid GROUP BY pr.productid, pr.productname ORDER BY tota
l_quantity_ordered DESC LIMIT 1;
+-----------+-------------+------------------------+
| productid | productname | total_quantity_ordered |
+-----------+-------------+------------------------+
|        73 | smartwatch  |                     22 |
+-----------+-------------+------------------------+
1 row in set (0.01 sec)

mysql>
```

5)

6)

```
mysql> SELECT c.customerid,c.firstname,c.lastname,AVG(o.totalamount) FROM customers c JOIN orders o ON
c.customerid = o.customerid GROUP BY c.customerid;
+------------+-----------+----------+--------------------+
| customerid | firstname | lastname | AVG(o.totalamount) |
+------------+-----------+----------+--------------------+
|          2 | Benjamin  | May      |                330 |
|          9 | Lani      | Moon     |               2926 |
|         10 | Jonah     | Boyle    |                550 |
|          5 | Aiko      | Barry    |               7260 |
+------------+-----------+----------+--------------------+
4 rows in set (0.00 sec)

mysql>
```

7)

```
mysql> SELECT o.orderid,c.customerid,c.firstname,c.lastname,o.totalamount AS total_revenue FROM orders
o JOIN customers c ON o.customerid = c.customerid ORDER BY total_revenue DESC LIMIT 1;
+---------+------------+-----------+----------+---------------+
| orderid | customerid | firstname | lastname | total_revenue |
+---------+------------+-----------+----------+---------------+
|     742 |          5 | Aiko      | Barry    |          7260 |
+---------+------------+-----------+----------+---------------+
1 row in set (0.00 sec)
```

8)

```
mysql> SELECT p.productid,p.productname,p.description,COUNT(od.productid) AS order_count FROM products p
LEFT JOIN orderdetails od ON p.productid = od.productid GROUP BY p.productid ORDER BY order_count DESC;
+-----------+-------------+-------------+-------------+
| productid | productname | description | order_count |
+-----------+-------------+-------------+-------------+
|        23 | keyboard    | gaming      |           1 |
|        32 | imac        | pc          |           1 |
|        44 | iphone      | red         |           1 |
|        65 | earpods     | white       |           1 |
|        73 | smartwatch  | esim        |           1 |
+-----------+-------------+-------------+-------------+
5 rows in set (0.01 sec)

mysql>
```

9)

```
mysql> SELECT c.customerid,c.firstname,c.lastname FROM customers c JOIN orders o ON c.customerid = o.cust
omerid JOIN orderdetails od ON o.orderid = od.orderid JOIN products p ON od.productid = p.productid WHERE
 p.productname = 'iphone';
+------------+-----------+----------+
| customerid | firstname | lastname |
+------------+-----------+----------+
|         10 | Jonah     | Boyle    |
+------------+-----------+----------+
1 row in set (0.01 sec)

mysql>
```

10)

```
mysql> SELECT SUM(totalamount) AS total_revenue FROM orders WHERE orderdate BETWEEN '2023-06-23'
AND '2023-08-15';
+---------------+
| total_revenue |
+---------------+
|           330 |
+---------------+
1 row in set (0.00 sec)

mysql>
```

Task 4

1)

```
mysql> SELECT customerid,firstname,lastname FROM customers WHERE customerid NOT IN (SELECT custom
erid FROM orders);
+------------+-----------+----------+
| customerid | firstname | lastname |
+------------+-----------+----------+
|          7 | Burton    | Hicks    |
+------------+-----------+----------+
1 row in set (0.00 sec)

mysql>
```

2)

```
mysql> SELECT COUNT(*) AS total_products FROM products;
+----------------+
| total_products |
+----------------+
|              5 |
+----------------+
1 row in set (0.02 sec)
```

3)

```
mysql> SELECT SUM(totalamount) AS total_revenue FROM orders;
+---------------+
| total_revenue |
+---------------+
|         13992 |
+---------------+
1 row in set (0.00 sec)

mysql>
```

4)

5)

```
mysql> SELECT customerid,firstname,lastname,(SELECT SUM(totalamount) FROM orders WHERE customerid =
c.customerid) AS total_revenue FROM customers c WHERE customerid = '10';
+------------+-----------+----------+---------------+
| customerid | firstname | lastname | total_revenue |
+------------+-----------+----------+---------------+
|         10 | Jonah     | Boyle    |           550 |
+------------+-----------+----------+---------------+
1 row in set (0.00 sec)

mysql>
```

6)

```
mysql> SELECT customerid,firstname,lastname,(SELECT COUNT(orderid) FROM orders WHERE customerid = c.
customerid ) AS order_count
    -> FROM customers c ORDER BY order_count DESC LIMIT 1;
+------------+-----------+----------+-------------+
| customerid | firstname | lastname | order_count |
+------------+-----------+----------+-------------+
|          9 | Lani      | Moon     |           2 |
+------------+-----------+----------+-------------+
1 row in set (0.00 sec)

mysql>
```

7)

```
mysql> SELECT p.productid, p.productname,(SELECT SUM(od.quantity) FROM orderdetails od WHERE od.prod
uctid = p.productid) AS total
    -> FROM products p ORDER BY total DESC LIMIT 1;
+-----------+-------------+-------+
| productid | productname | total |
+-----------+-------------+-------+
|        73 | smartwatch  |    22 |
+-----------+-------------+-------+
1 row in set (0.00 sec)
```

8)

```
mysql> SELECT c.customerid,c.firstname,c.lastname,
    -> (SELECT SUM(od.quantity * p.price) AS total_spending FROM orderdetails od JOIN products p ON
od.productid = p.productid JOIN orders o ON od.orderid = o.orderid WHERE o.customerid = c.customerid
) AS total
    -> FROM customers c ORDER BY total DESC LIMIT 1;
+------------+-----------+----------+-------+
| customerid | firstname | lastname | total |
+------------+-----------+----------+-------+
|          5 | Aiko      | Barry    |  7260 |
+------------+-----------+----------+-------+
1 row in set (0.00 sec)

mysql>
```

9)

```
mysql> SELECT c.customerid,c.firstname,c.lastname,(SELECT SUM(o.totalamount) / COUNT(o.orderid) AS a
verage_order_value FROM orders o WHERE o.customerid = c.customerid) AS average
    -> FROM customers c;
+------------+-----------+----------+---------+
| customerid | firstname | lastname | average |
+------------+-----------+----------+---------+
|          2 | Benjamin  | May      |     330 |
|          5 | Aiko      | Barry    |    7260 |
|          7 | Burton    | Hicks    |    NULL |
|          9 | Lani      | Moon     |    2926 |
|         10 | Jonah     | Boyle    |     550 |
+------------+-----------+----------+---------+
5 rows in set (0.01 sec)

mysql>
```

10)

```
mysql> SELECT c.customerid,c.firstname,c.lastname,(SELECT COUNT(o.orderid) FROM orders o WHERE o.
customerid = c.customerid) AS no
    -> FROM customers c;
+------------+-----------+----------+------+
| customerid | firstname | lastname | no   |
+------------+-----------+----------+------+
|          2 | Benjamin  | May      |    1 |
|          5 | Aiko      | Barry    |    1 |
|          7 | Burton    | Hicks    |    0 |
|          9 | Lani      | Moon     |    2 |
|         10 | Jonah     | Boyle    |    1 |
+------------+-----------+----------+------+
5 rows in set (0.00 sec)

mysql>
```