DAY-8 TASK

1)Join student and marks

MariaDB [sil]> CREATE TABLE students (
    ->   student_id INT PRIMARY KEY,
    ->   name VARCHAR(50)
    ->);
Query OK, 0 rows affected (0.050 sec)

MariaDB [sil]> INSERT INTO students (student_id, name) VALUES
    -> (1, 'Anushika'),
    -> (2, 'Pranesh'),
    -> (3, 'Hari');
Query OK, 3 rows affected (0.013 sec)
Records: 3 Duplicates: 0 Warnings: 0

MariaDB [sil]> SELECT * FROM students;
```
+------------+----------+
| student_id | name     |
+------------+----------+
|          1 | Anushika |
|          2 | Pranesh  |
|          3 | Hari     |
+------------+----------+
```
3 rows in set (0.006 sec)

MariaDB [sil]> CREATE TABLE marks (
    ->   mark_id INT PRIMARY KEY,
    ->   student_id INT,
    ->   subject VARCHAR(50),
    ->   mark INT,
    ->   FOREIGN KEY (student_id) REFERENCES students(student_id)
    ->);
Query OK, 0 rows affected (0.056 sec)

MariaDB [sil]> INSERT INTO marks (mark_id, student_id, subject, mark) VALUES
    -> (1, 1, 'Math', 85),
    -> (2, 1, 'English', 90),
    -> (3, 2, 'Math', 78),
    -> (4, 3, 'Science', 92);

Query OK, 4 rows affected (0.008 sec)
Records: 4 Duplicates: 0 Warnings: 0

MariaDB [sil]> SELECT * FROM marks;
```
+---------+------------+---------+------+
| mark_id | student_id | subject | mark |
+---------+------------+---------+------+
|       1 |          1 | Math    |   85 |
|       2 |          1 | English |   90 |
|       3 |          2 | Math    |   78 |
|       4 |          3 | Science |   92 |
+---------+------------+---------+------+
```
4 rows in set (0.001 sec)

MariaDB [sil]> SELECT students.student_id, students.name, marks.subject, marks.mark
    -> FROM students
    -> JOIN marks ON students.student_id = marks.student_id;

output:


```
+------------+----------+---------+------+
| student_id | name     | subject | mark |
+------------+----------+---------+------+
|          1 | Anushika | Math    |   85 |
|          1 | Anushika | English |   90 |
|          2 | Pranesh  | Math    |   78 |
|          3 | Hari     | Science |   92 |
+------------+----------+---------+------+
```
4 rows in set (0.006 sec)

2)Sub-query to find top performer

MariaDB [sil]> SELECT name, total_marks
    -> FROM (
    ->   SELECT s.name, SUM(m.mark) AS total_marks
    ->   FROM students s
    ->   JOIN marks m ON s.student_id = m.student_id
    ->   GROUP BY s.name
    ->) AS student_totals
    -> WHERE total_marks = (
    ->   SELECT MAX(total_marks)

```
->    FROM (
->        SELECT SUM(mark) AS total_marks
->        FROM marks
->        GROUP BY student_id
->    ) AS totals
-> );
```

output:

```
+----------+-------------+
| name     | total_marks |
+----------+-------------+
| Anushika |         175 |
+----------+-------------+
1 row in set (0.021 sec)
```

3)join orders and customers

```
MariaDB [sil]> CREATE TABLE customers (
    ->    customer_id INT PRIMARY KEY,
    ->    name VARCHAR(50),
    ->    email VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.058 sec)

MariaDB [sil]> CREATE TABLE orders (
    ->    order_id INT PRIMARY KEY,
    ->    customer_id INT,
    ->    product VARCHAR(100),
    ->    amount DECIMAL(10, 2),
    ->    FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
    -> );
Query OK, 0 rows affected (0.050 sec)

MariaDB [sil]> INSERT INTO customers (customer_id, name, email) VALUES
    -> (1, 'Anushika', 'anu@gmail.com'),
    -> (2, 'Pranesh', 'pranesh@gmail.com'),
    -> (3, 'Hari', 'hari@gmail.com');
Query OK, 3 rows affected (0.023 sec)
Records: 3  Duplicates: 0  Warnings: 0
```

```
MariaDB [sil]> INSERT INTO orders (order_id, customer_id, product, amount) VALUES
    -> (101, 1, 'Laptop', 50000.00),
    -> (102, 2, 'Mouse', 1000.00),
    -> (103, 1, 'Headphones', 2000.00);
Query OK, 3 rows affected (0.014 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [sil]> SELECT
    ->    customers.customer_id,
    ->    customers.name,
    ->    orders.order_id,
    ->    orders.product,
    ->    orders.amount
    -> FROM customers
    -> JOIN orders ON customers.customer_id = orders.customer_id;
```

output:

```
+-------------+----------+----------+------------+----------+
| customer_id | name     | order_id | product    | amount   |
+-------------+----------+----------+------------+----------+
|           1 | Anushika |      101 | Laptop     | 50000.00 |
|           2 | Pranesh  |      102 | Mouse      |  1000.00 |
|           1 | Anushika |      103 | Headphones |  2000.00 |
+-------------+----------+----------+------------+----------+
3 rows in set (0.001 sec)

MariaDB [sil]>
```

4)MAIN PROGRAM: multi table query app with filters

```
MariaDB [ab]> CREATE TABLE customers (
    ->    customer_id INT PRIMARY KEY,
    ->    name VARCHAR(50),
    ->    email VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.022 sec)

MariaDB [ab]> CREATE TABLE products (
    ->    product_id INT PRIMARY KEY,
    ->    product_name VARCHAR(100),
```

```
    ->     price DECIMAL(10, 2)
    -> );
Query OK, 0 rows affected (0.017 sec)

MariaDB [ab]> CREATE TABLE orders (
    ->     order_id INT PRIMARY KEY,
    ->     customer_id INT,
    ->     product_id INT,
    ->     quantity INT,
    ->     order_date DATE,
    ->     FOREIGN KEY (customer_id) REFERENCES customers(customer_id),
    ->     FOREIGN KEY (product_id) REFERENCES products(product_id)
    -> );
Query OK, 0 rows affected (0.049 sec)

MariaDB [ab]> -- customers
MariaDB [ab]> INSERT INTO customers VALUES
    -> (1, 'Anushika', 'anu@gmail.com'),
    -> (2, 'Pranesh', 'pranesh@gmail.com'),
    -> (3, 'Hari', 'hari@gmail.com');
Query OK, 3 rows affected (0.007 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [ab]>
MariaDB [ab]> -- products
MariaDB [ab]> INSERT INTO products VALUES
    -> (101, 'Laptop', 55000.00),
    -> (102, 'Mouse', 500.00),
    -> (103, 'Keyboard', 1500.00);
Query OK, 3 rows affected (0.004 sec)
Records: 3  Duplicates: 0  Warnings: 0

MariaDB [ab]>
MariaDB [ab]> -- orders
MariaDB [ab]> INSERT INTO orders VALUES
    -> (201, 1, 101, 1, '2024-06-01'),
    -> (202, 2, 102, 2, '2024-06-02'),
    -> (203, 1, 103, 1, '2024-06-03'),
    -> (204, 3, 101, 1, '2024-06-04');
Query OK, 4 rows affected (0.007 sec)
Records: 4  Duplicates: 0  Warnings: 0

MariaDB [ab]> SELECT
    ->     c.customer_id,
```

```
    ->     c.name AS customer_name,
    ->     p.product_name,
    ->     p.price,
    ->     o.quantity,
    ->     (p.price * o.quantity) AS total_amount,
    ->     o.order_date
    -> FROM customers c
    -> JOIN orders o ON c.customer_id = o.customer_id
    -> JOIN products p ON o.product_id = p.product_id
    -> WHERE c.name = 'Anushika'
    ->   AND (p.price * o.quantity) > 1000
    -> ORDER BY o.order_date DESC;
```

output:

```
+-------------+---------------+--------------+----------+----------+--------------+------------+
| customer_id | customer_name | product_name | price    | quantity | total_amount | order_date |
+-------------+---------------+--------------+----------+----------+--------------+------------+
|           1 | Anushika      | Keyboard     |  1500.00 |        1 |      1500.00 | 2024-06-03 |
|           1 | Anushika      | Laptop       | 55000.00 |        1 |     55000.00 | 2024-06-01 |
+-------------+---------------+--------------+----------+----------+--------------+------------+
2 rows in set (0.009 sec)
```