

Assignment 5

(TicketBookingSystem)

- **Task : 1 Database Design**

- Create the database named "TicketBookingSystem"

- ```
create database TicketBookingSystem;
use TicketBookingSystem;
```

- Write SQL scripts to create the mentioned tables with appropriate data types, constraints, and relationships.

- Venue

- ```
create Table venue(  
venue_id int primary key,  
venue_name varchar(100),  
address varchar(100)  
);
```

- EventTable

- ```
create table EventTable(
booking_id int,
event_id int primary key,
event_name varchar(100),
event_date varchar(100),
event_time time,
venue_id int,
total_seats varchar (100),
available_seats varchar (100),
ticket_price decimal(10,2),
event_type ENUM ('Movie', 'Sports', 'Concert'),
foreign key (booking_id) references BookingTable(booking_id),
foreign key (venue_id) references venue(venue_id)
);
```

- CustomerTable

- ```
create table CustomerTable(  
booking_id int,  
customer_id int primary key,  
customer_name varchar(50),  
email varchar(50),  
phone_number varchar(50),
```

```
foreign key (booking_id) references BookingTable(booking_id)
);
```

■ BookingTable

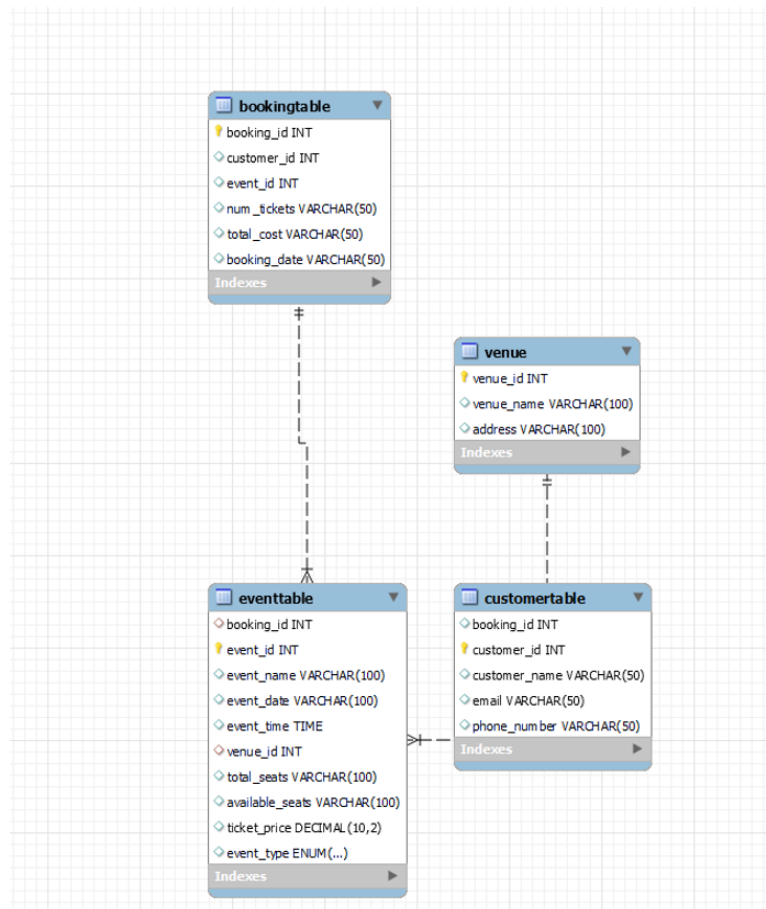
- ```
create table BookingTable(
booking_id int primary key,
customer_id int,
event_id int,
num_tickets varchar(50),
total_cost varchar(50),
booking_date varchar(50),
```

```
foreign key (customer_id) references CustomerTable(customer_id),
foreign key (event_id) references EventTable(event_id)
);
```

- Create an ERD (Entity Relationship Diagram) for the database.
- 4. Create appropriate Primary Key and Foreign Key constraints for referential integrity.

#### • Code Snippet : Task 1

#### • ERD (Entity Relationship Diagram)



- **Tasks 2: Select, Where, Between, AND, LIKE**

1. Write a SQL query to insert at least 10 sample records into each table.

a. Code snippet

i. Venue

```
1. insert into venue(venue_id , venue_name, address)
values
('1', 'Venue1', 'Address'),
('2', 'Venue2', 'Address2'),
('3', 'Venue3', 'Address3'),
('4', 'Venue4', 'Address4'),
('5', 'Venue5', 'Address5'),
('6', 'Venue6', 'Address6'),
('7', 'Venue7', 'Address7'),
('8', 'Venue8', 'Address8'),
('9', 'Venue9', 'Address9'),
('10', 'Venue10', 'Address10');
```

|   | venue_id | venue_name | address   |
|---|----------|------------|-----------|
| ▶ | 1        | Venue1     | Address   |
|   | 2        | Venue2     | Address2  |
|   | 3        | Venue3     | Address3  |
|   | 4        | Venue4     | Address4  |
|   | 5        | Venue5     | Address5  |
|   | 6        | Venue6     | Address6  |
|   | 7        | Venue7     | Address7  |
|   | 8        | Venue8     | Address8  |
|   | 9        | Venue9     | Address9  |
|   | 10       | Venue10    | Address10 |

ii. EventTable

```
insert into EventTable (event_id, event_name, event_date, event_time,
venue_id, total_seats, available_seats, ticket_price, event_type,
booking_id)
values
(1, 'Event1', '2024-01-20', '12:30:00', 1, '100', '100', 50.00,
'Concert', 1),
(2, 'Event2', '2024-02-15', '15:45:00', 2, '120', '120', 45.00, 'Sports',
2),
(3, 'Event3', '2024-03-10', '18:00:00', 3, '150', '150', 60.00, 'Movie',
3),
(4, 'Event4', '2024-04-05', '20:30:00', 4, '80', '80', 40.00, 'Concert',
4),
(5, 'Event5', '2024-05-22', '14:00:00', 5, '200', '200', 55.00, 'Sports',
5),
(6, 'Event6', '2024-06-18', '17:15:00', 6, '110', '110', 35.00, 'Movie',
6),
(7, 'Event7', '2024-07-12', '19:45:00', 7, '130', '130', 75.00,
'Concert', 7),
(8, 'Event8', '2024-08-28', '16:00:00', 8, '90', '90', 48.00, 'Sports',
8),
(9, 'Event9', '2024-09-14', '21:00:00', 9, '180', '180', 42.00, 'Movie',
9),
```

```
(10, 'Event10', '2024-10-30', '13:30:00', 10, '160', '160', 65.00,
'Concert', 10);
```

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_  |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|---------|
| ► | 1          | 1        | Event1     | 2024-01-20 | 12:30:00   | 1        | 100         | 100             | 50.00        | Concert |
|   | 2          | 2        | Event2     | 2024-02-15 | 15:45:00   | 2        | 120         | 120             | 45.00        | Sports  |
|   | 3          | 3        | Event3     | 2024-03-10 | 18:00:00   | 3        | 150         | 150             | 60.00        | Movie   |
|   | 4          | 4        | Event4     | 2024-04-05 | 20:30:00   | 4        | 80          | 80              | 40.00        | Concert |
|   | 5          | 5        | Event5     | 2024-05-22 | 14:00:00   | 5        | 200         | 200             | 55.00        | Sports  |
|   | 6          | 6        | Event6     | 2024-06-18 | 17:15:00   | 6        | 110         | 110             | 35.00        | Movie   |
|   | 7          | 7        | Event7     | 2024-07-12 | 19:45:00   | 7        | 130         | 130             | 75.00        | Concert |

### iii. CustomerTable

```
insert into
CustomerTable(customer_id,customer_name,email,phone_number,booking_id)
values
(1001, 'John Doe', 'john.doe@example.com', '+1234567890', 1),
(1002, 'Jane Smith', 'jane.smith@example.com', '+9876543210', 2),
(1003, 'Bob Johnson', 'bob.johnson@example.com', '+1122334455', 3),
(1004, 'Alice Lee', 'alice.lee@example.com', '+9988776655', 4),
(1005, 'Charlie Brown', 'charlie.brown@example.com', '+1122334455', 5),
(1006, 'Eva Martinez', 'eva.martinez@example.com', '+9988776655', 6),
(1007, 'David Wang', 'david.wang@example.com', '+1122334455', 7),
(1008, 'Sophia Kim', 'sophia.kim@example.com', '+9988776655', 8),
(1009, 'Michael Garcia', 'michael.garcia@example.com', '+1122334455', 9),
(1010, 'Olivia Rodriguez', 'olivia.rodriguez@example.com', '+9988776655',
10);
```

|   | booking_id | customer_id | customer_name | email                     | phone_number |
|---|------------|-------------|---------------|---------------------------|--------------|
| ► | 1          | 1001        | John Doe      | john.doe@example.com      | +1234567890  |
|   | 2          | 1002        | Jane Smith    | jane.smith@example.com    | +9876543210  |
|   | 3          | 1003        | Bob Johnson   | bob.johnson@example.com   | +1122334455  |
|   | 4          | 1004        | Alice Lee     | alice.lee@example.com     | +9988776655  |
|   | 5          | 1005        | Charlie Brown | charlie.brown@example.com | +1122334455  |
|   | 6          | 1006        | Eva Martinez  | eva.martinez@example.com  | +9988776655  |
|   | 7          | 1007        | David Wang    | david.wang@example.com    | +1122334455  |

### iv. BookingTable

```
insert into BookingTable(booking_id,
customer_id,event_id,total_cost,booking_date)
values
(1, 1001, 1, 75.00, '2024-01-25 14:45:00'),
(2, 1002, 3, 50.00, '2024-02-10 18:30:00'),
(3, 1003, 5, 100.00, '2024-03-05 20:15:00'),
(4, 1004, 2, 60.00, '2024-04-12 16:00:00'),
(5, 1005, 4, 85.00, '2024-05-20 19:30:00'),
(6, 1006, 6, 70.00, '2024-06-08 15:45:00'),
(7, 1007, 8, 120.00, '2024-07-15 21:00:00'),
(8, 1008, 7, 90.00, '2024-08-28 17:30:00'),
(9, 1009, 9, 55.00, '2022-09-14 14:00:00'),
(10, 1010, 10, 110.00, '2023-10-30 19:45:00');
```

|   | booking_id | customer_id | event_id | num_tickets | total_cost | booking_date        |
|---|------------|-------------|----------|-------------|------------|---------------------|
| ▶ | 1          | 1001        | 1        | NULL        | 75.00      | 2024-01-25 14:45:00 |
|   | 2          | 1002        | 3        | NULL        | 50.00      | 2024-02-10 18:30:00 |
|   | 3          | 1003        | 5        | NULL        | 100.00     | 2024-03-05 20:15:00 |
|   | 4          | 1004        | 2        | NULL        | 60.00      | 2024-04-12 16:00:00 |
|   | 5          | 1005        | 4        | NULL        | 85.00      | 2024-05-20 19:30:00 |
|   | 6          | 1006        | 6        | NULL        | 70.00      | 2024-06-08 15:45:00 |
|   | 7          | 1007        | 8        | NULL        | 120.00     | 2024-07-15 21:00:00 |

2. Write a SQL query to list all Events.

a. `select * from eventtable;`

3. Write a SQL query to select events with available tickets.

a. `SELECT *FROM EventTable WHERE available_seats > 0;`

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| ▶ | 1          | 1        | Event1     | 2024-01-20 | 12:30:00   | 1        | 100         | 100             | 50.00        | Concert    |
|   | 2          | 2        | Event2     | 2024-02-15 | 15:45:00   | 2        | 120         | 120             | 45.00        | Sports     |
|   | 3          | 3        | Event3     | 2024-03-10 | 18:00:00   | 3        | 150         | 150             | 60.00        | Movie      |
|   | 4          | 4        | Event4     | 2024-04-05 | 20:30:00   | 4        | 80          | 80              | 40.00        | Concert    |
|   | 5          | 5        | Event5     | 2024-05-22 | 14:00:00   | 5        | 200         | 200             | 55.00        | Sports     |
|   | 6          | 6        | Event6     | 2024-06-18 | 17:15:00   | 6        | 110         | 110             | 35.00        | Movie      |

4. Write a SQL query to select events name partial match with 'cup'.

a. `SELECT *FROM EventTable WHERE event_name LIKE '%cup%';`

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| * | NULL       | NULL     | NULL       | NULL       | NULL       | NULL     | NULL        | NULL            | NULL         | NULL       |

5. Write a SQL query to select events with ticket price range is between 1000 to 2500.

a. `SELECT *FROM EventTable WHERE ticket_price BETWEEN 1000 AND 2500;`

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| * | NULL       | NULL     | NULL       | NULL       | NULL       | NULL     | NULL        | NULL            | NULL         | NULL       |

6. Write a SQL query to retrieve events with dates falling within a specific range.

a. `SELECT *FROM EventTable  
WHERE event_date BETWEEN '2024-02-01' AND '2024-03-01';`

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| ▶ | 2          | 2        | Event2     | 2024-02-15 | 15:45:00   | 2        | 120         | 120             | 45.00        | Sports     |
| * | NULL       | NULL     | NULL       | NULL       | NULL       | NULL     | NULL        | NULL            | NULL         | NULL       |

7. Write a SQL query to retrieve events with available tickets that also have "Concert" in their name.

a. 

```
SELECT *FROM EventTable
WHERE available_seats > 0 AND event_name LIKE '%Concert%';
```

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| * | NULL       | NULL     | NULL       | NULL       | NULL       | NULL     | NULL        | NULL            | NULL         | NULL       |

8. Write a SQL query to retrieve users in batches of 5, starting from the 6th user.

a. 

```
SELECT *FROM CustomerTable
ORDER BY customer_id
LIMIT 5 OFFSET 5;
```

| booking_id | customer_id | customer_name    | email                        | phone_number |
|------------|-------------|------------------|------------------------------|--------------|
| 6          | 1006        | Eva Martinez     | eva.martinez@example.com     | +9988776655  |
| 7          | 1007        | David Wang       | david.wang@example.com       | +1122334455  |
| 8          | 1008        | Sophia Kim       | sophia.kim@example.com       | +9988776655  |
| 9          | 1009        | Michael Garcia   | michael.garcia@example.com   | +1122334455  |
| 10         | 1010        | Olivia Rodriguez | olivia.rodriguez@example.com | +9988776655  |
| NULL       | NULL        | NULL             | NULL                         | NULL         |

9. Write a SQL query to retrieve bookings details contains booked no of ticket more than 4.

a. 

```
SELECT *FROM BookingTable
WHERE CAST(num_tickets AS SIGNED) > 4;
```

|   | booking_id | customer_id | event_id | num_tickets | total_cost | booking_date |
|---|------------|-------------|----------|-------------|------------|--------------|
| * | NULL       | NULL        | NULL     | NULL        | NULL       | NULL         |

10. Write a SQL query to retrieve customer information whose phone number end with '000'.

a. 

```
SELECT *
FROM CustomerTable
WHERE phone_number LIKE '%000';
```

|   | booking_id | customer_id | customer_name | email | phone_number |
|---|------------|-------------|---------------|-------|--------------|
| * | NULL       | NULL        | NULL          | NULL  | NULL         |

11. Write a SQL query to retrieve the events in order whose seat capacity more than 15000.

- a. 

```
SELECT *
FROM EventTable
WHERE CAST(total_seats AS SIGNED) > 15000
ORDER BY total_seats;
```

|   | booking_id | customer_id | customer_name | email | phone_number |
|---|------------|-------------|---------------|-------|--------------|
| * | NULL       | NULL        | NULL          | NULL  | NULL         |

12. Write a SQL query to select events name not start with 'x', 'y', 'z'

- a. 

```
SELECT *
FROM EventTable
WHERE SUBSTRING(event_name, 1, 1) NOT IN ('x', 'y', 'z');
```

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| ▶ | 1          | 1        | Event1     | 2024-01-20 | 12:30:00   | 1        | 100         | 100             | 50.00        | Concert    |
|   | 2          | 2        | Event2     | 2024-02-15 | 15:45:00   | 2        | 120         | 120             | 45.00        | Sports     |
|   | 3          | 3        | Event3     | 2024-03-10 | 18:00:00   | 3        | 150         | 150             | 60.00        | Movie      |
|   | 4          | 4        | Event4     | 2024-04-05 | 20:30:00   | 4        | 80          | 80              | 40.00        | Concert    |
|   | 5          | 5        | Event5     | 2024-05-22 | 14:00:00   | 5        | 200         | 200             | 55.00        | Sports     |
|   | 6          | 6        | Event6     | 2024-06-18 | 17:15:00   | 6        | 110         | 110             | 35.00        | Movie      |

### **Tasks 3: Aggregate functions, Having, Order By, GroupBy and Joins:**

1. Write a SQL query to List Events and Their Average Ticket Prices.

- a. 

```
SELECT event_id, event_name,
AVG(ticket_price) AS average_ticket_price
FROM EventTable
GROUP BY event_id, event_name;
```

| event_id | event_name | average_ticket_price |
|----------|------------|----------------------|
| 1        | Event1     | 50.000000            |
| 2        | Event2     | 45.000000            |
| 3        | Event3     | 60.000000            |
| 4        | Event4     | 40.000000            |
| 5        | Event5     | 55.000000            |
| 6        | Event6     | 35.000000            |

2. Write a SQL query to Calculate the Total Revenue Generated by Events.

- a. 

```
SELECT BookingTable.event_id, EventTable.event_name,
SUM(CAST(BookingTable.total_cost AS DECIMAL(10, 2))) AS total_revenue
FROM BookingTable
JOIN EventTable ON BookingTable.event_id = EventTable.event_id
GROUP BY
BookingTable.event_id, EventTable.event_name
LIMIT 0, 1000;
```

|   | event_id | event_name | total_revenue |
|---|----------|------------|---------------|
| ▶ | 1        | Event1     | 75.00         |
|   | 3        | Event3     | 50.00         |
|   | 5        | Event5     | 100.00        |
|   | 2        | Event2     | 60.00         |
|   | 4        | Event4     | 85.00         |
|   | 6        | Event6     | 70.00         |

3. Write a SQL query to find the event with the highest ticket sales.

a. `SELECT e.event_id,e.event_name,  
SUM(CAST(b.num_tickets AS SIGNED)) AS total_tickets_sold  
FROM BookingTable b  
JOIN EventTable e ON b.event_id = e.event_id  
GROUP BY e.event_id, e.event_name  
ORDER BY total_tickets_sold DESC  
LIMIT 1;`

|   | event_id | event_name | total_tickets_sold |
|---|----------|------------|--------------------|
| ▶ | 1        | Event1     | NULL               |

4. Write a SQL query to Calculate the Total Number of Tickets Sold for Each Event.

a. `SELECT event_id,event_name,  
SUM(CAST(num_tickets AS SIGNED)) AS total_tickets_sold  
FROM BookingTable  
JOIN EventTable ON BookingTable.event_id = EventTable.event_id  
GROUP BY event_id, event_name;`

|   | event_id | event_name | total_tickets_sold |
|---|----------|------------|--------------------|
| ▶ | 1        | Event1     | NULL               |
|   | 3        | Event3     | NULL               |
|   | 5        | Event5     | NULL               |
|   | 2        | Event2     | NULL               |
|   | 4        | Event4     | NULL               |
|   | 6        | Event6     | NULL               |

5. Write a SQL query to Find Events with No Ticket Sales.

a. `SELECT *  
FROM EventTable  
WHERE event_id NOT IN (SELECT DISTINCT event_id FROM BookingTable);`

|   | booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_type |
|---|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|------------|
| * | NULL       | NULL     | NULL       | NULL       | NULL       | NULL     | NULL        | NULL            | NULL         | NULL       |

6. Write a SQL query to Find the User Who Has Booked the Most Tickets.



- a. 

```
SELECT CustomerTable.customer_id, CustomerTable.customer_name,
SUM(CAST(BookingTable.num_tickets AS SIGNED)) AS total_tickets_booked
FROM BookingTable
JOIN CustomerTable ON BookingTable.customer_id = CustomerTable.customer_id
GROUP BY
CustomerTable.customer_id, CustomerTable.customer_name
ORDER BY total_tickets_booked DESC
LIMIT 1;
```

|   | customer_id | customer_name | total_tickets_booked |
|---|-------------|---------------|----------------------|
| ▶ | 1001        | John Doe      | NULL                 |

7. Write a SQL query to List Events and the total number of tickets sold for each month.

- a. 

```
SELECT EventTable.event_id, EventTable.event_name,
MONTH(BookingTable.booking_date) AS month,
SUM(CAST(BookingTable.num_tickets AS SIGNED)) AS total_tickets_sold
FROM BookingTable
JOIN EventTable ON BookingTable.event_id = EventTable.event_id
GROUP BY
EventTable.event_id, EventTable.event_name, month
ORDER BY
EventTable.event_id, month
LIMIT 0, 1000;
```

|   | event_id | event_name | month | total_tickets_sold |
|---|----------|------------|-------|--------------------|
| ▶ | 1        | Event1     | 1     | NULL               |
|   | 2        | Event2     | 4     | NULL               |
|   | 3        | Event3     | 2     | NULL               |
|   | 4        | Event4     | 5     | NULL               |
|   | 5        | Event5     | 3     | NULL               |
|   | 6        | Event6     | 6     | NULL               |

8. Write a SQL query to calculate the average Ticket Price for Events in Each Venue.

- a. 

```
SELECT venue.venue_id, venue.venue_name,
AVG(EventTable.ticket_price) AS average_ticket_price
FROM EventTable
JOIN venue ON EventTable.venue_id = venue.venue_id
GROUP BY venue.venue_id, venue.venue_name
LIMIT 0, 1000;
```

|   | venue_id | venue_name | average_ticket_price |
|---|----------|------------|----------------------|
| ▶ | 1        | Venue1     | 50.000000            |
|   | 2        | Venue2     | 45.000000            |
|   | 3        | Venue3     | 60.000000            |
|   | 4        | Venue4     | 40.000000            |
|   | 5        | Venue5     | 55.000000            |
|   | 6        | Venue6     | 35.000000            |
|   | 7        | Venue7     | 75.000000            |

9. Write a SQL query to calculate the total Number of Tickets Sold for Each Event Type.

a. `SELECT event_type,  
SUM(CAST(num_tickets AS SIGNED)) AS total_tickets_sold  
FROM BookingTable  
JOIN EventTable ON BookingTable.event_id = EventTable.event_id  
GROUP BY  
event_type;`

|   | event_type | total_tickets_sold |
|---|------------|--------------------|
| ▶ | Concert    | NULL               |
|   | Movie      | NULL               |
|   | Sports     | NULL               |

10. Write a SQL query to calculate the total Revenue Generated by Events in Each Year.

a. `SELECT YEAR(booking_date) AS year,  
SUM(CAST(total_cost AS DECIMAL(10, 2))) AS total_revenue  
FROM BookingTable  
GROUP BY year;`

|   | year | total_revenue |
|---|------|---------------|
| ▶ | 2024 | 815.00        |

11. Write a SQL query to list users who have booked tickets for multiple events.

a. `SELECT customer_id, customer_name  
FROM CustomerTable  
WHERE  
customer_id IN ( SELECT customer_id  
FROM BookingTable  
GROUP BY customer_id  
HAVING  
COUNT(DISTINCT event_id) > 1  
);`

|   | customer_id | customer_name |
|---|-------------|---------------|
| ▶ | NULL        | NULL          |

12. Write a SQL query to calculate the Total Revenue Generated by Events for Each User.

a. 

```
SELECT CustomerTable.customer_id, CustomerTable.customer_name,
SUM(CAST(BookingTable.total_cost AS DECIMAL(10, 2))) AS total_revenue
FROM BookingTable
JOIN CustomerTable ON BookingTable.customer_id = CustomerTable.customer_id
GROUP BY
CustomerTable.customer_id, CustomerTable.customer_name
LIMIT 0, 1000;
```

|   | customer_id | customer_name | total_revenue |
|---|-------------|---------------|---------------|
| ▶ | 1001        | John Doe      | 75.00         |
|   | 1002        | Jane Smith    | 50.00         |
|   | 1003        | Bob Johnson   | 100.00        |
|   | 1004        | Alice Lee     | 60.00         |
|   | 1005        | Charlie Brown | 85.00         |

13. Write a SQL query to calculate the Average Ticket Price for Events in Each Category and Venue.

a. 

```
SELECT event_type,venue_name,
AVG(ticket_price) AS average_ticket_price
FROM EventTable
JOIN venue ON EventTable.venue_id = venue.venue_id
GROUP BY event_type, venue_name;
```

|   | event_type | venue_name | average_ticket_price |
|---|------------|------------|----------------------|
| ▶ | Concert    | Venue1     | 50.000000            |
|   | Sports     | Venue2     | 45.000000            |
|   | Movie      | Venue3     | 60.000000            |
|   | Concert    | Venue4     | 40.000000            |
|   | Sports     | Venue5     | 55.000000            |

14. Write a SQL query to list Users and the Total Number of Tickets They've Purchased in the Last 30 Days.

a. 

```
SELECT CustomerTable.customer_id,
CustomerTable.customer_name,
SUM(CAST(BookingTable.num_tickets AS SIGNED)) AS total_tickets_purchased
FROM BookingTable
JOIN CustomerTable ON BookingTable.customer_id = CustomerTable.customer_id
WHERE
booking_date >= DATE_SUB(CURDATE(), INTERVAL 30 DAY)
GROUP BY CustomerTable.customer_id, CustomerTable.customer_name
LIMIT 0, 1000;
```

|   | customer_id | customer_name | total_tickets_purchased |
|---|-------------|---------------|-------------------------|
| ▶ | 1001        | John Doe      | NULL                    |
|   | 1002        | Jane Smith    | NULL                    |
|   | 1003        | Bob Johnson   | NULL                    |
|   | 1004        | Alice Lee     | NULL                    |
|   | 1005        | Charlie Brown | NULL                    |

#### **TASK 4 : Subquery and its types**

1. Calculate the Average Ticket Price for Events in Each Venue Using a Subquery.

a. `SELECT venue_id,venue_name,  
(SELECT AVG(ticket_price) FROM EventTable WHERE venue_id = venue.venue_id) AS  
average_ticket_price  
FROM venue;`

|   | venue_id | venue_name | average_ticket_price |
|---|----------|------------|----------------------|
| ▶ | 1        | Venue1     | 50.000000            |
|   | 2        | Venue2     | 45.000000            |
|   | 3        | Venue3     | 60.000000            |
|   | 4        | Venue4     | 40.000000            |
|   | 5        | Venue5     | 55.000000            |

2. Find Events with More Than 50% of Tickets Sold using subquery.

a. `SELECT EventTable.*  
FROM EventTable  
JOIN (SELECT event_id, COUNT(*) AS booking_count  
FROM BookingTable  
GROUP BY event_id  
) AS EventBookings ON EventTable.event_id = EventBookings.event_id  
WHERE EventBookings.booking_count > 0.5 * EventTable.total_seats  
LIMIT 0, 1000;`

| booking_id | event_id | event_name | event_date | event_time | venue_id | total_seats | available_seats | ticket_price | event_typ |
|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|-----------|
|------------|----------|------------|------------|------------|----------|-------------|-----------------|--------------|-----------|

3. Calculate the Total Number of Tickets Sold for Each Event.

a. `SELECT event_id,event_name,  
(SELECT SUM(CAST(num_tickets AS SIGNED)) FROM BookingTable WHERE  
BookingTable.event_id = EventTable.event_id) AS total_tickets_sold FROM  
EventTable;`

|   | event_id | event_name | total_tickets_sold |
|---|----------|------------|--------------------|
| ▶ | 1        | Event1     | NULL               |
|   | 2        | Event2     | NULL               |
|   | 3        | Event3     | NULL               |
|   | 4        | Event4     | NULL               |
|   | 5        | Event5     | NULL               |

4. Find Users Who Have Not Booked Any Tickets Using a NOT EXISTS Subquery.

- a. `SELECT *FROM CustomerTable  
WHERE NOT EXISTS (SELECT 1 FROM BookingTable WHERE BookingTable.customer_id =  
CustomerTable.customer_id);`

|   | booking_id | customer_id | customer_name | email | phone_number |
|---|------------|-------------|---------------|-------|--------------|
| * | NULL       | NULL        | NULL          | NULL  | NULL         |

5. List Events with No Ticket Sales Using a NOT IN Subquery.

- a. `SELECT * FROM EventTable  
WHERE event_id NOT IN (SELECT DISTINCT event_id FROM BookingTable);`

|   | booking_id | customer_id | customer_name | email | phone_number |
|---|------------|-------------|---------------|-------|--------------|
| * | NULL       | NULL        | NULL          | NULL  | NULL         |

6. Calculate the Total Number of Tickets Sold for Each Event Type Using a Subquery in the FROM Clause.

- a. `SELECT event_type,  
(SELECT SUM(CAST(num_tickets AS SIGNED)) FROM BookingTable WHERE  
BookingTable.event_id = EventTable.event_id) AS total_tickets_sold  
FROM EventTable  
GROUP BY event_type;`

|   | event_type | total_tickets_sold |
|---|------------|--------------------|
| ► | Concert    | NULL               |
|   | Sports     | NULL               |
|   | Movie      | NULL               |
|   | Concert    | NULL               |
|   | Sports     | NULL               |

7. Find Events with Ticket Prices Higher Than the Average Ticket Price Using a Subquery in the WHERE Clause.

- a. `SELECT *FROM EventTable  
WHERE ticket_price > (SELECT AVG(ticket_price) FROM EventTable);`

8. Calculate the Total Revenue Generated by Events for Each User Using a Correlated Subquery.

- a. `SELECT customer_id, customer_name,  
(SELECT SUM(CAST(total_cost AS DECIMAL(10, 2))) FROM BookingTable WHERE  
BookingTable.customer_id = CustomerTable.customer_id) AS total_revenue  
FROM CustomerTable;`

|   | customer_id | customer_name | total_revenue |
|---|-------------|---------------|---------------|
| ▶ | 1001        | John Doe      | 75.00         |
|   | 1002        | Jane Smith    | 50.00         |
|   | 1003        | Bob Johnson   | 100.00        |
|   | 1004        | Alice Lee     | 60.00         |
|   | 1005        | Charlie Brown | 85.00         |

9. List Users Who Have Booked Tickets for Events in a Given Venue Using a Subquery in the WHERE Clause.

- a. `SELECT *FROM CustomerTable  
WHERE customer_id IN (SELECT DISTINCT customer_id FROM BookingTable WHERE  
BookingTable.event_id IN (SELECT event_id FROM EventTable WHERE venue_id =  
1));`

|   | booking_id | customer_id | customer_name | email                | phone_number |
|---|------------|-------------|---------------|----------------------|--------------|
| ▶ | 1          | 1001        | John Doe      | john.doe@example.com | +1234567890  |
| * | NULL       | NULL        | NULL          | NULL                 | NULL         |

10. Calculate the Total Number of Tickets Sold for Each Event Category Using a Subquery with GROUP BY.

- a. `SELECT event_type,  
(SELECT SUM(CAST(num_tickets AS SIGNED)) FROM BookingTable WHERE  
BookingTable.event_id = EventTable.event_id) AS total_tickets_sold  
FROM EventTable  
GROUP BY  
event_type;`

11. Find Users Who Have Booked Tickets for Events in each Month Using a Subquery with DATE\_FORMAT.

- a. 

```
SELECT EventTable.event_type,
COALESCE(SUM(CAST(EventBookings.num_tickets AS SIGNED)), 0) AS
total_tickets_sold
FROM EventTable
LEFT JOIN (SELECT event_id,
SUM(CAST(num_tickets AS SIGNED)) AS num_tickets
FROM BookingTable
GROUP BY
event_id
) AS EventBookings ON EventTable.event_id = EventBookings.event_id
GROUP BY
EventTable.event_type
LIMIT 0, 1000;
```

|   | event_type | total_tickets_sold |
|---|------------|--------------------|
| ► | Concert    | 0                  |
|   | Sports     | 0                  |
|   | Movie      | 0                  |

12. Calculate the Average Ticket Price for Events in Each Venue Using a Subquery.

- a. 

```
SELECT venue_id, venue_name,
(SELECT AVG(ticket_price) FROM EventTable WHERE venue_id = venue.venue_id) AS
average_ticket_price
FROM venue;
```

|   | venue_id | venue_name | average_ticket_price |
|---|----------|------------|----------------------|
| ► | 1        | Venue1     | 50.000000            |
|   | 2        | Venue2     | 45.000000            |
|   | 3        | Venue3     | 60.000000            |
|   | 4        | Venue4     | 40.000000            |
|   | 5        | Venue5     | 55.000000            |