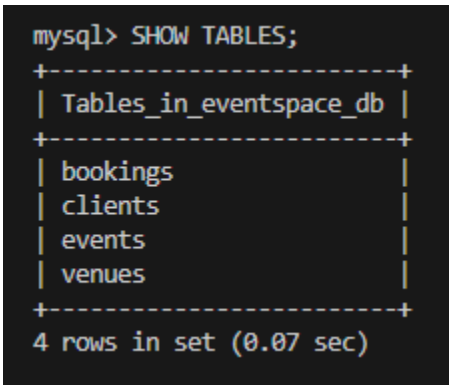
Database Schema

EventSpace uses a normalized relational database to model real-world event planning workflows, where clients book events at venues on specific dates. The schema was designed to prevent redundancy while supporting both transactional operations and analytical queries.

The database was normalized to BCNF. Functional dependencies were carefully analyzed to avoid data redundancy and anomalies. Foreign keys were defined with constraints to ensure referential integrity.

Entities: Clients, Venues, Events, Bookings



Relationships:
A client can book multiple events
An event occurs at one venue
A booking connects a client, event, and venue with specific dates

Tables:

clients(client_id, name, email, created_at)

```
mysql> DESCRIBE clients;
+------------+--------------+------+-----+-------------------+-------------------+
| Field      | Type         | Null | Key | Default           | Extra             |
+------------+--------------+------+-----+-------------------+-------------------+
| id         | int          | NO   | PRI | NULL              | auto_increment    |
| name       | varchar(100) | NO   |     | NULL              |                   |
| email      | varchar(100) | NO   | UNI | NULL              |                   |
| created_at | timestamp    | YES  |     | CURRENT_TIMESTAMP | DEFAULT_GENERATED |
+------------+--------------+------+-----+-------------------+-------------------+
4 rows in set (0.04 sec)
```

venues(venue_id, venue_name, venue_adr, capacity, facilities)

```
mysql> DESCRIBE venues;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| venue_id   | int          | NO   | PRI | NULL    | auto_increment |
| venue_name | varchar(100) | YES  |     | NULL    |                |
| venue_adr  | varchar(255) | YES  |     | NULL    |                |
| capacity   | int          | YES  |     | NULL    |                |
| facilities | text         | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

events(event_id, event_name, event_type, event_date, description)

```
mysql> DESCRIBE events;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| event_id    | int          | NO   | PRI | NULL    | auto_increment |
| event_name  | varchar(100) | YES  |     | NULL    |                |
| event_type  | varchar(100) | YES  |     | NULL    |                |
| event_date  | date         | YES  |     | NULL    |                |
| description | text         | YES  |     | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

bookings(booking_id, booking_date, event_date, client_id, venue_id, event_id)

```
mysql> DESCRIBE bookings;
+--------------+------+------+-----+---------+----------------+
| Field        | Type | Null | Key | Default | Extra          |
+--------------+------+------+-----+---------+----------------+
| booking_id   | int  | NO   | PRI | NULL    | auto_increment |
| booking_date | date | YES  |     | NULL    |                |
| event_date   | date | YES  |     | NULL    |                |
| client_id    | int  | YES  | MUL | NULL    |                |
| venue_id     | int  | YES  | MUL | NULL    |                |
| event_id     | int  | YES  | MUL | NULL    |                |
+--------------+------+------+-----+---------+----------------+
6 rows in set (0.00 sec)
```

Example Query:

```
mysql> SELECT
    ->   b.booking_id,
    ->   c.name AS client,
    ->   e.event_name,
    ->   v.venue_name,
    ->   b.event_date
    -> FROM bookings b
    -> JOIN clients c ON b.client_id = c.id
    -> JOIN events e ON b.event_id = e.event_id
    -> JOIN venues v ON b.venue_id = v.venue_id
    -> LIMIT 10;
+------------+------------------+--------------------+----------------------+------------+
| booking_id | client           | event_name         | venue_name           | event_date |
+------------+------------------+--------------------+----------------------+------------+
|         63 | Miguel Williams  | Charity Gala       | The Riverside Lounge | 2026-03-26 |
|        116 | Amanda Boyd      | Housewarming Party | The Riverside Lounge | 2025-10-21 |
|        143 | Eric Mendoza     | Open House         | The Riverside Lounge | 2025-06-01 |
|        201 | Ashlee Thompson  | Art Exhibition     | The Riverside Lounge | 2025-05-25 |
|        267 | Amanda Boyd      | Team Lunch         | The Riverside Lounge | 2025-11-21 |
|        355 | Amanda White     | Ashley's Birthday  | The Riverside Lounge | 2025-11-22 |
|        370 | Ashley Watts     | Community Fair     | The Riverside Lounge | 2025-10-18 |
|        397 | Laura Johnson    | Travis's Birthday  | The Riverside Lounge | 2025-06-01 |
|        414 | Kathleen Hodges  | Charity Gala       | The Riverside Lounge | 2025-12-22 |
|        422 | Nathaniel Guzman | Anniversary Party  | The Riverside Lounge | 2026-02-13 |
+------------+------------------+--------------------+----------------------+------------+
10 rows in set (0.00 sec)
```

Sample Data:

```
mysql> SELECT * FROM clients LIMIT 5;
+----+----------------+---------------------------+---------------------+
| id | name           | email                     | created_at          |
+----+----------------+---------------------------+---------------------+
|  1 | Justin Woodard | justin.woodard@example.com | 2025-04-21 14:15:53 |
|  2 | Kelly Walsh    | kelly.walsh@example.com    | 2025-04-21 14:15:53 |
|  3 | Nicholas White | nicholas.white@example.com | 2025-04-21 14:15:53 |
|  4 | Courtney Fowler | courtney.fowler@example.com | 2025-04-21 14:15:53 |
|  5 | Lisa Turner    | lisa.turner@example.com    | 2025-04-21 14:15:53 |
+----+----------------+---------------------------+---------------------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM events LIMIT 5;
+----------+------------------+------------+------------+---------------------------+
| event_id | event_name       | event_type | event_date | description               |
+----------+------------------+------------+------------+---------------------------+
|        1 | Family Reunion   | Social     | 2025-08-16 | This event is invite only. |
|        2 | Friends Gathering | Social     | 2026-04-16 | This event is invite only. |
|        3 | Friends Gathering | Social     | 2025-10-13 | This event is invite only. |
|        4 | Friends Gathering | Social     | 2026-02-04 | This event is invite only. |
|        5 | Team Lunch       | Corporate  | 2025-09-23 | This event is invite only. |
+----------+------------------+------------+------------+---------------------------+
5 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM bookings LIMIT 5;
+------------+--------------+------------+-----------+----------+----------+
| booking_id | booking_date | event_date | client_id | venue_id | event_id |
+------------+--------------+------------+-----------+----------+----------+
|          1 | 2024-12-16   | 2025-06-10 |         1 |       26 |       75 |
|          2 | 2024-10-19   | 2026-02-26 |        33 |       45 |       18 |
|          3 | 2025-02-25   | 2025-09-06 |         4 |       49 |       73 |
|          4 | 2024-07-28   | 2025-09-05 |        72 |       31 |       26 |
|          5 | 2025-01-18   | 2025-06-03 |        43 |       14 |       53 |
+------------+--------------+------------+-----------+----------+----------+
5 rows in set (0.00 sec)
```

ER Diagram: