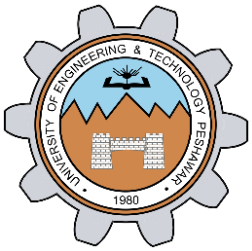
Milestone 3



Spring 2025

Group Members

Name	Registration Number
Hassan Zaib Jadoon	22PWCSE2144
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"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Submitted to:

Engr. Summeyea Salahuddin

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SQL Database Tables and Queries

Users Table

```sql
CREATE TABLE users (
    id BIGINT UNSIGNED AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(255) NOT NULL,
    email VARCHAR(255) UNIQUE NOT NULL,
    email_verified_at TIMESTAMP NULL,
    password VARCHAR(255) NOT NULL,
    role ENUM('user', 'admin') DEFAULT 'user',
    remember_token VARCHAR(100) NULL,
    created_at TIMESTAMP NULL,
    updated_at TIMESTAMP NULL
);
```

Purpose: Manages user authentication and authorization

Key Features:

- Unique email constraint
- Role-based access control
- Email verification support
- Remember token for persistent login
- Timestamps for audit trail

Events Table

```sql
CREATE TABLE events (
    id BIGINT UNSIGNED AUTO_INCREMENT PRIMARY KEY,
    title VARCHAR(255) NOT NULL,
    description TEXT NOT NULL,
    date DATE NOT NULL,
    time TIME NOT NULL,
    venue VARCHAR(255) NOT NULL,
    capacity INT NOT NULL,
    price DECIMAL(8,2) NOT NULL,
    image VARCHAR(255) NULL,
    status ENUM('active', 'inactive', 'cancelled') DEFAULT 'active',
    user_id BIGINT UNSIGNED NOT NULL,
    created_at TIMESTAMP NULL,
    updated_at TIMESTAMP NULL,
    FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE CASCADE
);
```

Purpose: Stores comprehensive event information

Key Features:

- Event ownership through user_id
- Status management for event lifecycle
- Image support for event promotion
- Decimal precision for pricing
- Cascading delete for data integrity

Seats Table

```
CREATE TABLE seats (
  id BIGINT UNSIGNED AUTO_INCREMENT PRIMARY KEY,
  event_id BIGINT UNSIGNED NOT NULL,
  seat_number VARCHAR(255) NOT NULL,
  row VARCHAR(255) NOT NULL,
  section VARCHAR(255) DEFAULT 'main',
  status ENUM('available', 'booked', 'reserved') DEFAULT 'available',
  price DECIMAL(8,2) NULL,
  created_at TIMESTAMP NULL,
  updated_at TIMESTAMP NULL,
  UNIQUE KEY unique_seat (event_id, seat_number),
  FOREIGN KEY (event_id) REFERENCES events(id) ON DELETE CASCADE
);
```

Purpose: Manages individual seat allocation and pricing

Key Features:

- Unique seat identification per event
- Section-based organization
- Individual seat pricing capability
- Real-time status tracking
- Referential integrity with events

Bookings Table

```
CREATE TABLE bookings (
  id BIGINT UNSIGNED AUTO_INCREMENT PRIMARY KEY,
  user_id BIGINT UNSIGNED NOT NULL,
  event_id BIGINT UNSIGNED NOT NULL,
  ticket_number VARCHAR(255) UNIQUE NOT NULL,
  qr_code TEXT NOT NULL,
  status ENUM('pending', 'confirmed', 'cancelled') DEFAULT 'pending',
  quantity INT DEFAULT 1,
  selected_seats JSON NULL,
  total_amount DECIMAL(10,2) DEFAULT 0.00,
  booking_date TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
```

```
    created_at TIMESTAMP NULL,
    updated_at TIMESTAMP NULL,
    FOREIGN KEY (user_id) REFERENCES users(id) ON DELETE CASCADE,
    FOREIGN KEY (event_id) REFERENCES events(id) ON DELETE CASCADE
);
```

Purpose: Manages booking transactions and ticket generation

Key Features:

- Unique ticket number generation
- QR code storage for digital tickets
- JSON storage for flexible seat selection
- Comprehensive booking status tracking

METADATA

Table: users

Column Name	*Data Type*	*Constraints*	*Key Type*
id	BIGINT UNSIGNED	AUTO_INCREMENT, NOT NULL	PRIMARY KEY
name	VARCHAR(255)	NOT NULL	–
email	VARCHAR(255)	NOT NULL, UNIQUE	UNIQUE
email_verified_at	TIMESTAMP	NULL	–
password	VARCHAR(255)	NOT NULL	–
role	ENUM('user','admin')	DEFAULT 'user'	–
remember_token	VARCHAR(100)	NULL	–
created_at	TIMESTAMP	NULL	–
updated_at	TIMESTAMP	NULL	–

Table: events

Column Name	*Data Type*	*Constraints*	*Key Type*
id	BIGINT UNSIGNED	AUTO_INCREMENT, NOT NULL	PRIMARY KEY
title	VARCHAR(255)	NOT NULL	–
description	TEXT	NOT NULL	–
date	DATE	NOT NULL	–
time	TIME	NOT NULL	–
venue	VARCHAR(255)	NOT NULL	–
capacity	INT	NOT NULL	–
price	DECIMAL(8,2)	NOT NULL	–
image	VARCHAR(255)	NULL	–
status	ENUM('active','inactive','cancelled')	DEFAULT 'active'	–
user_id	BIGINT UNSIGNED	NOT NULL	FOREIGN KEY → users(id)
created_at	TIMESTAMP	NULL	–
updated_at	TIMESTAMP	NULL	–

Table: seats

Column Name	*Data Type*	*Constraints*	*Key Type*
id	BIGINT UNSIGNED	AUTO_INCREMENT, NOT NULL	PRIMARY KEY
event_id	BIGINT UNSIGNED	NOT NULL	FOREIGN KEY → events(id)
seat_number	VARCHAR(255)	NOT NULL	UNIQUE (event_id, seat_number)
row	VARCHAR(255)	NOT NULL	–
section	VARCHAR(255)	DEFAULT 'main'	–
status	ENUM('available','booked','reserved')	DEFAULT 'available'	–
price	DECIMAL(8,2)	NULL	–
created_at	TIMESTAMP	NULL	–
updated_at	TIMESTAMP	NULL	–

Table: bookings

Column Name	*Data Type*	*Constraints*	*Key Type*
id	BIGINT UNSIGNED	AUTO_INCREMENT, NOT NULL	PRIMARY KEY
user_id	BIGINT UNSIGNED	NOT NULL	FOREIGN KEY → users(id)
event_id	BIGINT UNSIGNED	NOT NULL	FOREIGN KEY → events(id)
ticket_number	VARCHAR(255)	NOT NULL, UNIQUE	UNIQUE
qr_code	TEXT	NOT NULL	–
status	ENUM('pending','confirmed','cancelled')	DEFAULT 'pending'	–
quantity	INT	DEFAULT 1	–
selected_seats	JSON	NULL	–
total_amount	DECIMAL(10,2)	DEFAULT 0.00	–
booking_date	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	–
created_at	TIMESTAMP	NULL	–
updated_at	TIMESTAMP	NULL	–

✅ KEYS Summary

Primary Keys

- `users.id`
- `events.id`
- `seats.id`
- `bookings.id`

Foreign Keys

- `events.user_id` → `users.id`
- `seats.event_id` → `events.id`
- `bookings.user_id` → `users.id`
- `bookings.event_id` → `events.id`

Unique Keys

- `users.email`
- `bookings.ticket_number`
- `seats.event_id + seat_number` (Composite Unique Constraint)

DATABASE QUERIES

Query 1: Select all events

```
SELECT * FROM events;
```

Query 2: Register a new user

```
INSERT INTO users (name, email, password)
VALUES ('Hassan Zaib', 'hassan@example.com', 'hashed_password');
```

Query 3: Book an event

```
INSERT INTO bookings (user_id, event_id, ticket_number, qr_code, status,
quantity, total_amount)
VALUES (2, 5, 'TKT10005', 'QR_DATA_HERE', 'pending', 2, 2000.00);
```

Query 4: Admin login verification

```
SELECT * FROM users
WHERE email = 'admin@example.com'
AND password = 'hashed_password'
AND role = 'admin';
```

Query 5: Fetch all available seats for a specific event

```
SELECT * FROM seats
WHERE event_id = 5
AND status = 'available';
```

Query 6: Update seat status after booking

```
UPDATE seats
SET status = 'booked'
WHERE id IN (10, 11, 12);
```

Query 7: Get all bookings for a specific user

```
SELECT * FROM bookings
WHERE user_id = 2;
```

Query 8: Cancel a booking

```
UPDATE bookings
SET status = 'cancelled'
```

```
WHERE id = 7;
```

Query 9: View event details along with admin info

```
SELECT events.*, users.name AS admin_name, users.email AS admin_email
FROM events
JOIN users ON events.user_id = users.id;
```

Query 10: Delete an event (admin-only operation)

```
DELETE FROM events
WHERE id = 4
AND user_id = 1;
```