**P1: Entity-Attribute-Table Structures**

Entities:

1. Theatre
2. Movie
3. Show
4. Ticket

Attributes and Table Structures:

1. Theatre:
   * theatre\_id (Primary Key)
   * theatre\_name
   * location
   * capacity

CREATE TABLE Theatre (

theatre\_id INT PRIMARY KEY,

theatre\_name VARCHAR(255),

location VARCHAR(255),

capacity INT

);

1. Movie:
   * movie\_id (Primary Key)
   * movie\_name
   * duration
   * genre
   * rating

CREATE TABLE Movie (

movie\_id INT PRIMARY KEY,

movie\_name VARCHAR(255),

duration INT,

genre VARCHAR(255),

rating FLOAT

);

1. Show:
   * show\_id (Primary Key)
   * theatre\_id (Foreign Key referencing Theatre)
   * movie\_id (Foreign Key referencing Movie)
   * date
   * time

CREATE TABLE Show (

show\_id INT PRIMARY KEY,

theatre\_id INT,

movie\_id INT,

date DATE,

time TIME,

FOREIGN KEY (theatre\_id) REFERENCES Theatre(theatre\_id),

FOREIGN KEY (movie\_id) REFERENCES Movie(movie\_id)

);

1. Ticket:
   * ticket\_id (Primary Key)
   * show\_id (Foreign Key referencing Show)
   * seat\_number
   * price

CREATE TABLE Ticket (

ticket\_id INT PRIMARY KEY,

show\_id INT,

seat\_number VARCHAR(10),

price DECIMAL(10,2),

FOREIGN KEY (show\_id) REFERENCES Show(show\_id)

);

**Sample Entries:**

-- Sample entries for Theatre table

INSERT INTO Theatre (theatre\_id, theatre\_name, location, capacity) VALUES

(1, 'ABC Cinema', 'New York', 200),

(2, 'XYZ Theatre', 'Los Angeles', 150);

-- Sample entries for Movie table

INSERT INTO Movie (movie\_id, movie\_name, duration, genre, rating) VALUES

(1, 'The Shawshank Redemption', 142, 'Drama', 9.3),

(2, 'Inception', 148, 'Sci-Fi', 8.8);

-- Sample entries for Show table

INSERT INTO Show (show\_id, theatre\_id, movie\_id, date, time) VALUES

(1, 1, 1, '2024-03-25', '18:00:00'),

(2, 1, 2, '2024-03-25', '21:00:00');

-- Sample entries for Ticket table

INSERT INTO Ticket (ticket\_id, show\_id, seat\_number, price) VALUES

(1, 1, 'A1', 12.50),

(2, 1, 'A2', 12.50),

(3, 2, 'B1', 15.00);

**P2: SQL Query to list shows on a given date at a given theatre with timings:**

SELECT M.movie\_name, S.time

FROM Show S

JOIN Movie M ON S.movie\_id = M.movie\_id

WHERE S.theatre\_id = [theatre\_id\_value]

AND S.date = '[desired\_date]';

Replace [theatre\_id\_value] with the desired theatre ID and [desired\_date] with the desired date. This query will give you the movie names and their respective show timings at the specified theatre on the specified date.