**BookMyShow Database Design and Queries**

**Entities and Attributes**

**1. Theatre**

* theatre\_id (Primary Key, INT, AUTO\_INCREMENT)
* name (VARCHAR(255), NOT NULL)
* location (VARCHAR(255), NOT NULL)

**2. Movie**

* movie\_id (Primary Key, INT, AUTO\_INCREMENT)
* title (VARCHAR(255), NOT NULL)
* genre (VARCHAR(100), NOT NULL)
* duration (INT, NOT NULL) -- duration in minutes
* language (VARCHAR(50), NOT NULL)
* rating (DECIMAL(2,1), CHECK (rating BETWEEN 0 AND 10))

**3. Show**

* show\_id (Primary Key, INT, AUTO\_INCREMENT)
* movie\_id (Foreign Key, INT, REFERENCES Movie(movie\_id))
* theatre\_id (Foreign Key, INT, REFERENCES Theatre(theatre\_id))
* show\_date (DATE, NOT NULL)
* show\_time (TIME, NOT NULL)

**SQL Queries**

**P1: Create Tables**

CREATE TABLE Theatre (

theatre\_id INT AUTO\_INCREMENT PRIMARY KEY,

name VARCHAR(255) NOT NULL,

location VARCHAR(255) NOT NULL

);

CREATE TABLE Movie (

movie\_id INT AUTO\_INCREMENT PRIMARY KEY,

title VARCHAR(255) NOT NULL,

genre VARCHAR(100) NOT NULL,

duration INT NOT NULL,

language VARCHAR(50) NOT NULL,

rating DECIMAL(2,1) CHECK (rating BETWEEN 0 AND 10)

);

CREATE TABLE ShowDetails (

show\_id INT AUTO\_INCREMENT PRIMARY KEY,

movie\_id INT NOT NULL,

theatre\_id INT NOT NULL,

show\_date DATE NOT NULL,

show\_time TIME NOT NULL,

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

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

);

**Sample Data**

INSERT INTO Theatre (name, location) VALUES

('PVR Cinemas', 'Bangalore'),

('INOX', 'Mumbai');

INSERT INTO Movie (title, genre, duration, language, rating) VALUES

('Interstellar', 'Sci-Fi', 169, 'English', 8.6),

('Dangal', 'Drama', 161, 'Hindi', 8.4);

INSERT INTO ShowDetails (movie\_id, theatre\_id, show\_date, show\_time) VALUES

(1, 1, '2025-03-18', '18:30:00'),

(2, 2, '2025-03-18', '20:00:00');

**P2: Query to List Shows on a Given Date at a Given Theatre**

SELECT M.title, S.show\_time

FROM ShowDetails S

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

JOIN Theatre T ON S.theatre\_id = T.theatre\_id

WHERE S.show\_date = '2025-03-18' AND T.name = 'PVR Cinemas';