BookMyShow – SQL Case Study Solution

P1: Database Design

Entities & Attributes (Normalized till BCNF)

**Theatre**

theatre\_id(PK)

name

address

contact\_number

**Screen**

screen\_id(PK)

theatre\_id(FK-Theatre)

screen\_name

screen\_type(IMAX, Playhouse, etc.)

**Movie**

movie\_id(PK)

title

language

duration

censor\_rating

**Format/Technology**

format\_id(PK)

format\_name(2D, 3D, IMAX, Dolby, etc.)

**Show**

show\_id (PK)

movie\_id(FK → Movie)

theatre\_id(FK → Theatre)

screen\_id(FK → Screen)

format\_id(FK → Format)

show\_date

show\_time

price

**Relationships**

* A **Theatre** has many **Screens**.
* A **Movie** can run in multiple **Theatres**.
* A **Show** ties together: (Movie + Theatre + Screen + Format + Date + Time + Price).

Table Structures (SQL)

**CREATE TABLE Theatre (**

**theatre\_id INT AUTO\_INCREMENT PRIMARY KEY,**

**name VARCHAR(100) NOT NULL,**

**address VARCHAR(255),**

**contact\_number VARCHAR(15)**

**);**

**CREATE TABLE Screen(**

**screen\_id INT AUTO\_INCREMENT PRIMARY KEY,**

**theatre\_id INT,**

**screen\_name INT,**

**screen\_type INT,**

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

**);**

CREATE TABLE Movie (

movie\_id INT AUTO\_INCREMENT PRIMARY KEY,

title VARCHAR(100) NOT NULL,

language VARCHAR(50),

duration INT,

censor\_rating VARCHAR(10)

);

CREATE TABLE Format (

format\_id INT AUTO\_INCREMENT PRIMARY KEY,

format\_name VARCHAR(50) NOT NULL

);

CREATE TABLE Show (

show\_id INT AUTO\_INCREMENT PRIMARY KEY,

movie\_id INT,

theatre\_id INT,

screen\_id INT,

format\_id INT,

show\_date DATE,

show\_time TIME,

price DECIMAL(10,2),

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

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

FOREIGN KEY (screen\_id) REFERENCES Screen(screen\_id),

FOREIGN KEY (format\_id) REFERENCES Format(format\_id)

);

-- Theatre

INSERT INTO Theatre (name, address, contact\_number)

VALUES ('PVR: Nexus Forum', 'Bengaluru, Karnataka', '9876543210');

-- Screens

INSERT INTO Screen (theatre\_id, screen\_name, screen\_type)

VALUES (1, 'Screen 1', 'Standard'),

(1, 'Screen 2', 'IMAX');

-- Movies

INSERT INTO Movie (title, language, duration, censor\_rating)

VALUES ('Dasara', 'Telugu', 150, 'UA'),

('Kisi Ka Bhai Kisi Ki Jaan', 'Hindi', 160, 'UA'),

('Avatar: The Way of Water', 'English', 190, 'UA');

Sample Data

-- Format

INSERT INTO Format (format\_name)

VALUES ('2D'), ('3D'), ('4K Dolby 7.1');

-- Shows

INSERT INTO Show (movie\_id, theatre\_id, screen\_id, format\_id, show\_date, show\_time, price)

VALUES

(1, 1, 1, 1, '2025-04-26', '12:15:00', 250.00),

(2, 1, 1, 3, '2025-04-26', '16:10:00', 300.00),

(2, 1, 1, 3, '2025-04-26', '20:20:00', 320.00),

(3, 1, 2, 2, '2025-04-26', '19:20:00', 350.00);

**P2 - Requirement:** List down all the shows on a given date at a given theatre along with their timings.

SELECT

m.title AS movie\_name,

s.show\_time,

f.format\_name,

sc.screen\_name,

sh.price

FROM Show sh

JOIN Movie m ON sh.movie\_id = m.movie\_id

JOIN Theatre t ON sh.theatre\_id = t.theatre\_id

JOIN Screen sc ON sh.screen\_id = sc.screen\_id

JOIN Format f ON sh.format\_id = f.format\_id

WHERE t.name = 'PVR: Nexus Forum'

AND sh.show\_date = '2025-04-26'

ORDER BY m.title, sh.show\_time;