# BookMyShow Assignment

## P1: Entities, Attributes, and Table Structures

Entities:  
1. Theatre  
 - theatre\_id (Primary Key)  
 - name  
 - location  
  
2. Movie  
 - movie\_id (Primary Key)  
 - title  
 - language  
 - format  
  
3. Showtime  
 - show\_id (Primary Key)  
 - movie\_id (Foreign Key)  
 - theatre\_id (Foreign Key)  
 - show\_date  
 - show\_time  
 - screen\_type

## SQL Scripts for Table Creation

CREATE TABLE Theatre (  
 theatre\_id INT PRIMARY KEY,  
 name VARCHAR(100),  
 location VARCHAR(100)  
);  
  
CREATE TABLE Movie (  
 movie\_id INT PRIMARY KEY,  
 title VARCHAR(100),  
 language VARCHAR(50),  
 format VARCHAR(10)  
);  
  
CREATE TABLE Showtime (  
 show\_id INT PRIMARY KEY,  
 movie\_id INT,  
 theatre\_id INT,  
 show\_date DATE,  
 show\_time TIME,  
 screen\_type VARCHAR(50),  
 FOREIGN KEY (movie\_id) REFERENCES Movie(movie\_id),  
 FOREIGN KEY (theatre\_id) REFERENCES Theatre(theatre\_id)  
);

## SQL Scripts for Sample Data

-- Theatre  
INSERT INTO Theatre VALUES (1, 'PVR: Nexus (Forum)', 'Bangalore');  
  
-- Movie  
INSERT INTO Movie VALUES  
(1, 'Dasara', 'Telugu', '2D'),  
(2, 'Kisi Ka Bhai Kisi Ki Jaan', 'Hindi', '2D'),  
(3, 'Tu Jhoothi Main Makkaar', 'Hindi', '2D'),  
(4, 'Avatar: The Way of Water', 'English', '3D');  
  
-- Showtime  
INSERT INTO Showtime VALUES  
(101, 1, 1, '2023-04-25', '12:10:00', '4K Dolby 7.1'),  
(102, 2, 1, '2023-04-25', '01:00:00', '4K ATMOS 4K'),  
(103, 2, 1, '2023-04-25', '04:10:00', '4K ATMOS 4K'),  
(104, 2, 1, '2023-04-25', '06:20:00', '4K Dolby 7.1'),  
(105, 3, 1, '2023-04-25', '01:15:00', '4K'),  
(106, 4, 1, '2023-04-25', '01:20:00', 'Playhouse 4K');

## P2: Query to List Shows

SELECT   
 M.title AS movie\_title,  
 M.language,  
 M.format,  
 S.show\_time,  
 S.screen\_type  
FROM   
 Showtime S  
JOIN   
 Movie M ON S.movie\_id = M.movie\_id  
JOIN   
 Theatre T ON S.theatre\_id = T.theatre\_id  
WHERE   
 T.name = 'PVR: Nexus (Forum)'  
 AND S.show\_date = '2023-04-25'  
ORDER BY   
 S.show\_time;

## Normalization (1NF, 2NF, 3NF, BCNF)

All tables follow 1NF (atomic values, no multi-valued attributes), 2NF (non-prime attributes fully dependent on primary keys), 3NF (no transitive dependencies), and BCNF (each determinant is a candidate key).