**P1: Entities, Attributes, and Table Structures**

**A. Identified Entities & Attributes**

Based on the brief and provided image:

**1. Theatre**

* **TheatreID** (*Primary Key*)
* **TheatreName**
* **Address**
* **City**

**2. Movie**

* **MovieID** (*Primary Key*)
* **Title**
* **Certification**
* **Language**
* **Format** (e.g., 2D, 3D)
* **Other Attributes** (optional): Duration, Genre

**3. Show**

* **ShowID** (*Primary Key*)
* **TheatreID** (*Foreign Key*)
* **MovieID** (*Foreign Key*)
* **ShowDate** (DATE)
* **ShowTime** (TIME)
* **ScreenType** (e.g., 4K, Playhouse)

**B. Table Structures (Normalized: 1NF, 2NF, 3NF, BCNF)**

**1. Theatre Table**

CREATE TABLE Theatre (

TheatreID INT PRIMARY KEY AUTO\_INCREMENT,

TheatreName VARCHAR(100) NOT NULL,

Address VARCHAR(255),

City VARCHAR(50)

);

## ****2. Movie Table****

CREATE TABLE Movie (

MovieID INT PRIMARY KEY AUTO\_INCREMENT,

Title VARCHAR(100) NOT NULL,

Certification VARCHAR(10),

Language VARCHAR(30),

Format VARCHAR(10) -- e.g., 2D, 3D

);

## ****3. Show Table****

CREATE TABLE Show (

ShowID INT PRIMARY KEY AUTO\_INCREMENT,

TheatreID INT NOT NULL,

MovieID INT NOT NULL,

ShowDate DATE NOT NULL,

ShowTime TIME NOT NULL,

ScreenType VARCHAR(50),

FOREIGN KEY (TheatreID) REFERENCES Theatre(TheatreID),

FOREIGN KEY (MovieID) REFERENCES Movie(MovieID)

);

## ****C. Sample Entries****

## ****Sample Data for Theatre****

INSERT INTO Theatre (TheatreName, Address, City)

VALUES

('PVR: Nexus (Forum Mall)', 'Forum Mall, Bengaluru', 'Bengaluru');

## ****Sample Data for Movie****

INSERT INTO Movie (Title, Certification, Language, Format)

VALUES

('Dasara', 'UA', 'Telugu', '2D'),

('Kisi Ka Bhai Kisi Ki Jaan', 'UA', 'Hindi', '2D'),

('Tu Jhoothi Main Makkaar', 'UA', 'Hindi', '2D'),

('Avatar: The Way of Water', 'UA', 'English', '3D');

## ****Sample Data for Show****

INSERT INTO Show (TheatreID, MovieID, ShowDate, ShowTime, ScreenType)

VALUES

(1, 1, '2023-04-25', '12:15:00', NULL), -- Dasara

(1, 2, '2023-04-25', '13:00:00', '4K Dolby 7.1'),

(1, 2, '2023-04-25', '16:10:00', '4K Dolby 7.1'),

(1, 2, '2023-04-25', '16:45:00', '4K Dolby 7.1'),

(1, 2, '2023-04-25', '20:20:00', '4K Dolby 7.1'),

(1, 2, '2023-04-25', '19:20:00', '4K Dolby 7.1'),

(1, 2, '2023-04-25', '22:30:00', '4K Dolby 7.1'),

(1, 3, '2023-04-25', '16:15:00', '4K Dolby 7.1'),

(1, 4, '2023-04-25', '12:40:00', 'Playhouse 3D');

## ****D. Example Table Structures****

## | Theatre |

| **TheatreID** | **TheatreName** | **Address** | **City** |
| --- | --- | --- | --- |
| 1 | PVR: Nexus (Forum Mall) | Forum Mall, Bengaluru | Bengaluru |

## | Movie |

| **MovieID** | **Title** | **Certification** | **Language** | **Format** |
| --- | --- | --- | --- | --- |
| 1 | Dasara | UA | Telugu | 2D |
| 2 | Kisi Ka Bhai Kisi Ki Jaan | UA | Hindi | 2D |
| 3 | Tu Jhoothi Main Makkaar | UA | Hindi | 2D |
| 4 | Avatar: The Way of Water | UA | English | 3D |

## | Show |

| **ShowID** | **TheatreID** | **MovieID** | **ShowDate** | **ShowTime** | **ScreenType** |
| --- | --- | --- | --- | --- | --- |
| 1 | 1 | 1 | 2023-04-25 | 12:15:00 | NULL |
| 2 | 1 | 2 | 2023-04-25 | 13:00:00 | 4K Dolby 7.1 |
| 3 | 1 | 2 | 2023-04-25 | 16:10:00 | 4K Dolby 7.1 |
| 4 | 1 | 2 | 2023-04-25 | 16:45:00 | 4K Dolby 7.1 |
| 5 | 1 | 2 | 2023-04-25 | 20:20:00 | 4K Dolby 7.1 |
| 6 | 1 | 2 | 2023-04-25 | 19:20:00 | 4K Dolby 7.1 |
| 7 | 1 | 2 | 2023-04-25 | 22:30:00 | 4K Dolby 7.1 |
| 8 | 1 | 3 | 2023-04-25 | 16:15:00 | 4K Dolby 7.1 |
| 9 | 1 | 4 | 2023-04-25 | 12:40:00 | Playhouse 3D |

## ****P2: SQL Query to List All Shows for a Theatre on a Date****

SELECT

m.Title AS MovieTitle,

m.Certification,

m.Language,

m.Format,

s.ShowTime,

s.ScreenType

FROM Show s

JOIN Movie m ON s.MovieID = m.MovieID

WHERE s.TheatreID = ? -- Supply the TheatreID here, e.g., 1

AND s.ShowDate = ?; -- Supply the date here, e.g., '2023-04-25'