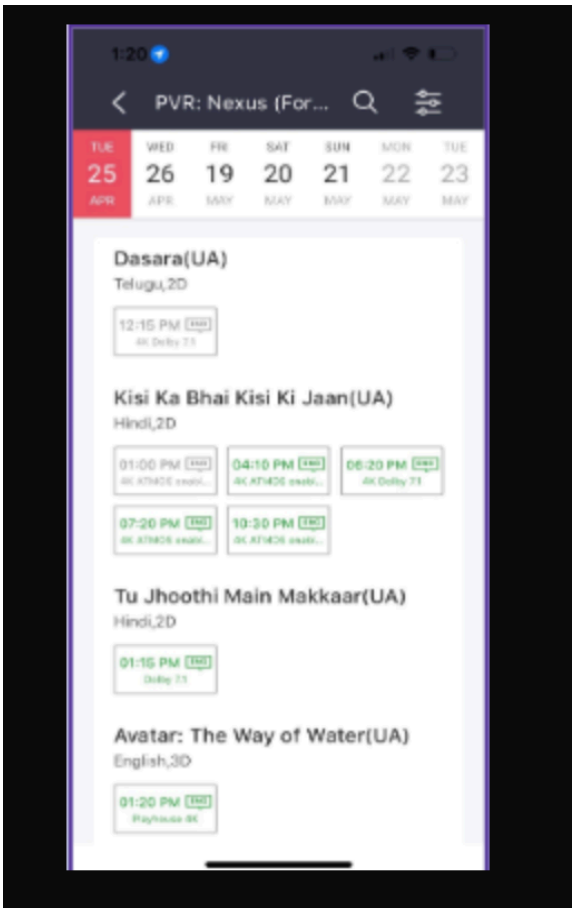
Problem Statement:

Bookmyshow is a ticketing platform where you can book tickets for a movie show. The image attached represents that for a given theatre we can see the next 7 dates. As one chooses the date, we get list of all shows running in that theatre along with the show timings.

P1 - As part of this assignment, we need to list down all the entities, their attributes and the table structures for the scenario mentioned in the previous slide. You also need to write the SQL queries required to create these tables along with few sample entries. Ensure the tables follow 1NF, 2NF, 3NF and BCNF rules.

P2 - Write a query to list down all the shows on a given date at a given theatre along with their respective show timings.



Submission guidelines

Expected output of this assignment is a doc with a list of all tables, their attributes, a few example rows, SQL for P1 and P2 solutions as a PR on Github. Ensure the SQL queries are directly executable on MySQL database.

Solution P1:

P1: As part of this assignment, we need to list down all the entities, their attributes and the table structures for the scenario mentioned in the previous slide. You also need to write the SQL queries required to create these tables along with few sample entries. Ensure the tables follow 1NF, 2NF, 3NF and BCNF rules.

TABLES/ENTITIES

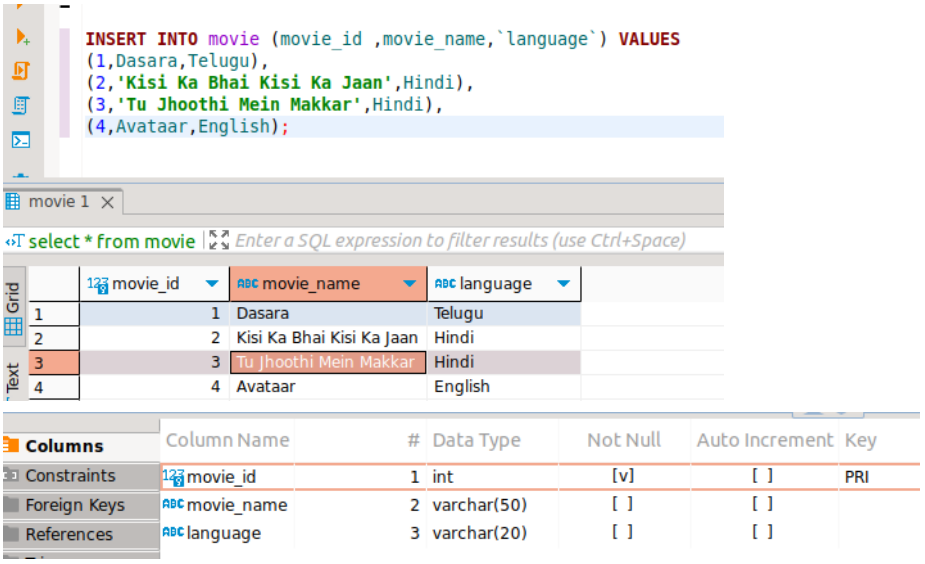
1. movie
2. theatre
3. showtimes

ATTRIBUTES

movie:

- movie_name
- language

```
CREATE TABLE movie (
  movie_id int NOT NULL,
  movie_name varchar(50) DEFAULT NULL,
  language varchar(20) DEFAULT NULL,
  PRIMARY KEY (movie_id)
)
INSERT INTO movie (movie_id ,movie_name,`language`) VALUES
(1,Dasara,Telugu),
(2,'Kisi Ka Bhai Kisi Ka Jaan',Hindi),
(3,'Tu Jhoothi Mein Makkar',Hindi),
(4,Avataar,English);
```

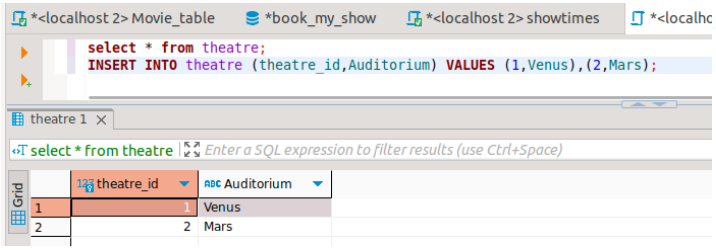


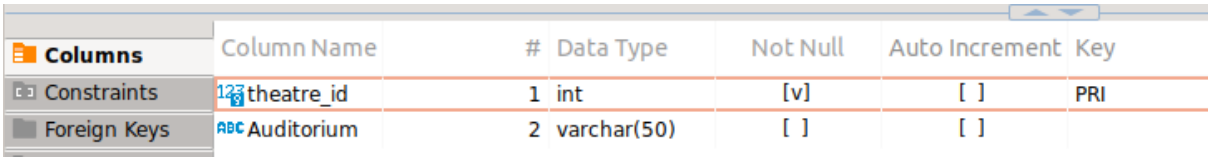
theatre:

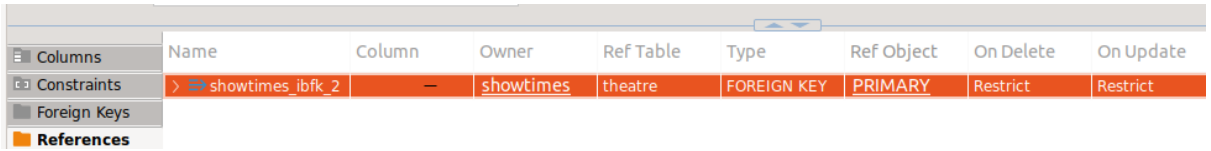
- Theatre_id
- Auditorium

```
CREATE TABLE theatre (
  theatre_id int NOT NULL,
```

```
 Auditorium varchar(50),
 PRIMARY KEY (theatre_id)
)
INSERT INTO theatre (theatre_id,Auditorium) VALUES (1,Venus),(2,Mars);
```







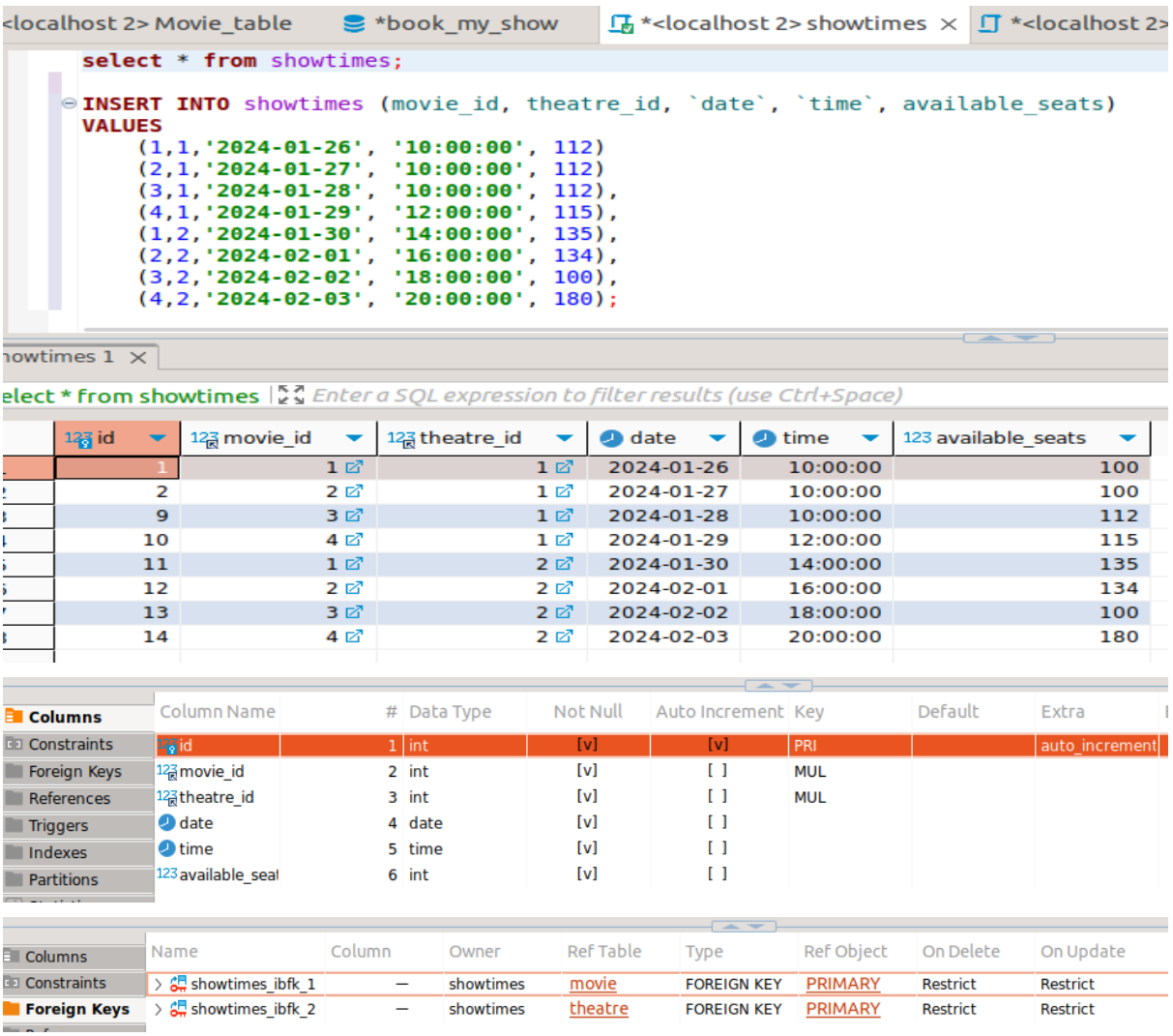
Showtimes:

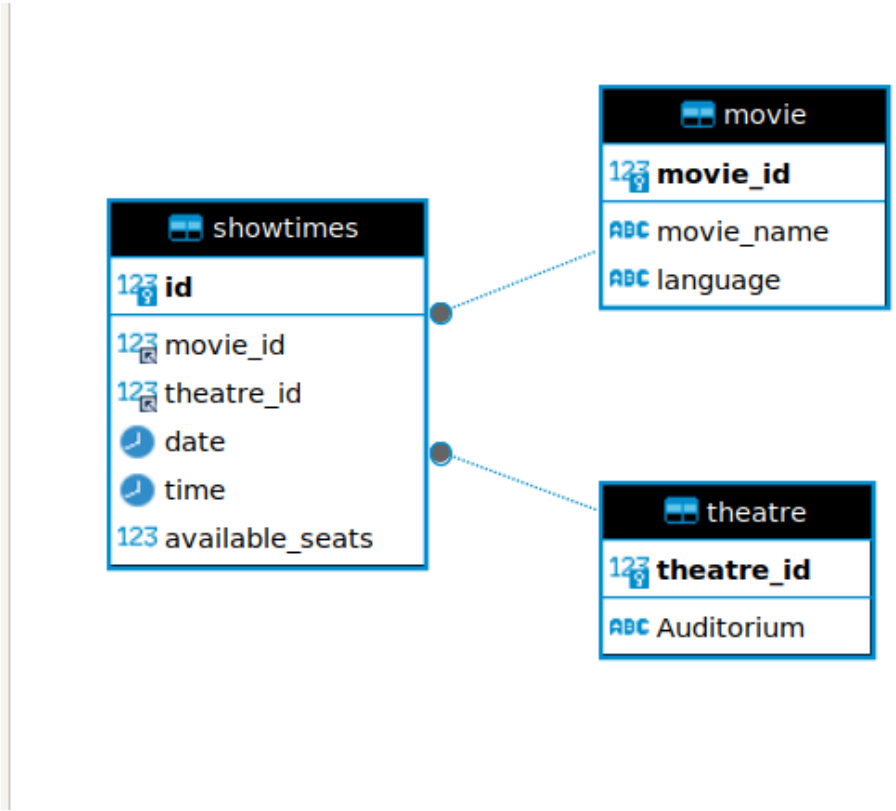
- id
- movie_id
- theatre_id
- date
- time
- available_seats

Query used:

```
CREATE TABLE showtimes(
id INT NOT NULL AUTO_INCREMENT,
movie_id INT NOT NULL,
theatre_id INT NOT NULL,
date DATE NOT NULL,
time TIME NOT NULL,
available_seats INT NOT NULL,
PRIMARY KEY (id),
FOREIGN KEY (movie_id) REFERENCES movie(movie_id),
FOREIGN KEY (theatre_id) REFERENCES theatre (theatre_id)
)

INSERT INTO showtimes (movie_id, theatre_id, `date`, `time`, available_seats)
VALUES
        (1,1,'2024-01-26', '10:00:00', 112)
        (2,1,'2024-01-27', '10:00:00', 112)
        (3,1,'2024-01-28', '10:00:00', 112),
        (4,1,'2024-01-29', '12:00:00', 115),
        (1,2,'2024-01-30', '14:00:00', 135),
        (2,2,'2024-02-01', '16:00:00', 134),
        (3,2,'2024-02-02', '18:00:00', 100),
        (4,2,'2024-02-03', '20:00:00', 180);
```


*book_my_show
*<localhost 2> showtimes
select * from showtimes;
INSERT INTO showtimes (movie_id, theatre_id, `date`, `time`, available_seats)
VALUES
(1,1,'2024-01-26', '10:00:00', 112)
(2,1,'2024-01-27', '10:00:00', 112)
(3,1,'2024-01-28', '10:00:00', 112),
(4,1,'2024-01-29', '12:00:00', 115),
(1,2,'2024-01-30', '14:00:00', 135),
(2,2,'2024-02-01', '16:00:00', 134),
(3,2,'2024-02-02', '18:00:00', 100),
(4,2,'2024-02-03', '20:00:00', 180);
Enter a SQL expression to filter results (use Ctrl+Space)
id
movie_id
theatre_id
date
time
available_seats
1 1 1 2024-01-26 10:00:00 100
2 2 1 2024-01-27 10:00:00 100
9 3 1 2024-01-28 10:00:00 112
10 4 1 2024-01-29 12:00:00 115
11 1 2 2024-01-30 14:00:00 135
12 2 2 2024-02-01 16:00:00 134
13 3 2 2024-02-02 18:00:00 100
14 4 2 2024-02-03 20:00:00 180
Columns
Constraints
Foreign Keys
References
Triggers
Indexes
Partitions
Column Name # Data Type Not Null Auto Increment Key Default Extra
id 1 int [v] [v] PRI auto_increment
movie_id 2 int [v] [ ] MUL
theatre_id 3 int [v] [ ] MUL
date 4 date [v] [ ]
time 5 time [v] [ ]
available_seat 6 int [v] [ ]
Columns
Constraints
Foreign Keys
Name Column Owner Ref Table Type Ref Object On Delete On Update
showtimes_ibfk_1 — showtimes movie FOREIGN KEY PRIMARY Restrict Restrict
showtimes_ibfk_2 — showtimes theatre FOREIGN KEY PRIMARY Restrict Restrict



Solution P2:

```
SELECT m.movie_name, s.time, s.available_seats
FROM showtimes s
INNER JOIN movie m ON s.movie_id = m.movie_id
WHERE s.date='2024-01-29' AND s.theatre_id = 1;
```