IT2040 – Database Management Systems   **Semester 1, 2020**

Tutorial 05

Consider the following relations in a movie database.

Movie (<u>title</u>:char(25), year:int, length:float, language:char(15), type:char(1), directorName: char(30))

MovieStar (<u>name</u>: char (15), country:varchar(40), gender:char(1), birthdate: date)

StarsIn (<u>movieTitle</u>:char(25), <u>movieYear</u>:int, <u>starname</u>:char(15), role:varchar(15))

Theater (<u>theaterName</u>: char (20), country: varchar (40), city: varchar (20), capacity: int)

Show (<u>movieTitle</u>: char (25), <u>theaterName</u>: char (20), datetime: datetime, ticketPrice: real, spectators: int)

The attributes of the Movie relation are title of the movie, year it was made, language, filmtype which may be 'F' or 'D' for feature or documentary respectively and the name of the director of the movie. The MovieStar relation has attributes to record the name, country, gender ('M' or 'F'), and birthday of stars. StarsIn relation associates the movie with stars that acted in them and contains the role ('lead', 'support', or 'other') they played. The Theater relation has attributes to store the name, country, city and the capacity of theaters. Show relation stores information movies shown in theaters. It stores the title of the movie shown, theater where the movie is shown, price of the ticket to see the movie and the number of specters who are there to see the movie. The primary keys of all relations are underlined.

Write SQL statements to answer the following queries

1. Find the names of the directors who had worked with American stars. Assume that if an actor/actress stars in a movie the directed by a director the actor/actress works with that director.
2. Find the movies in English for which all seats are booked in a theater.
3. Display the names of stars who have acted in 3 or more movies in any year between 2017 and 2018.
4. Find the names of male stars who had only starred in lead roles in 2018.
5. Find the names of the stars who has appeared in same movie with 'Robert Downey'.
6. Find the names of feature movies which is viewed by at least 1 Million spectators in total.
7. Find the total income of each movie shown in theaters in America
8. Find the name of the theaters located in 'New York' which shows both 'The Passenger' and 'Jurassic World' on 1st January-2018.
9. Find the feature movies for which all shows have more than 200 spectators.
10. Find the name of the most popular movie. The most popular movie is the movie viewed by most spectators.

Movie

title	year	length	language	filmtype	DirectorName
Avengers	2018	3	English	F	Anthony Russo
Black Panther	2018	3	English	F	Ryan Coogler
Ghost in Shell	2017	2.5	English	D	Rupert Sanders
Jurrasic World	2018	2.75	English	D	Colin Trevorrow
Passengers	2016	2.75	English	F	Morten Tyldum
Spider-man	2018	2.5	English	F	Jon Watts

MovieStar

name	country	gender	birthdate
Bryce Howard	America	F	3/2/1981
Chadwick Boseman	America	M	11/29/1977
Chris Pratt	England	M	6/21/1979
Jennifer Lawrence	America	F	8/15/1990
Robert Downey	America	M	4/4/1963
Scarlett Johansson	America	F	11/22/1984
Tom Holland	England	M	6/1/1996

Theater

theaterName	country	city	capacity
Beverly	America	LA	300
Cinnemaworld	Australia	Melbourne	250
Electric	England	London	275
Grand Rex	France	Paris	300
Nitehawk	America	New York	200

StarsIn

movieTitle	movieYear	starname	role
Avengers	2018	Chadwick Boseman	lead
Avengers	2018	Robert Downey	lead
Avengers	2018	Scarlett Johansson	lead
Black Panther	2018	Chadwick Boseman	lead
Black Panther	2018	Robert Downey	support
Ghost in Shell	2017	Scarlett Johansson	lead
Jurrasic World	2018	Bryce Howard	lead
Jurrasic World	2018	Chris Pratt	lead
Passengers	2016	Chris Pratt	lead
Passengers	2016	Jennifer Lawrence	lead
Spider-man	2018	Robert Downey	support
Spider-man	2018	Tom Holland	lead

Show

movieTitle	theaterName	datetime	ticketPrice	spectators
Spider-man	Electric	00:00.0	200	275
Spider-man	Grand Rex	00:00.0	200	200
Avengers	Grand Rex	00:00.0	200	98
Black Panther	Beverly	00:00.0	200	205
Black Panther	Grand Rex	00:00.0	300	300
Passengers	Nitehawk	00:00.0	200	219
Ghost in Shell	Cinnemaworld	00:00.0	200	101
Black Panther	Grand Rex	00:00.0	200	200
Jurrasic World	Cinnemaworld	00:00.0	200	188
Black Panther	Nitehawk	00:00.0	200	219
Jurrasic World	Nitehawk	00:00.0	200	176