CPCS241-Database I-Spring2018-Project

Design a database for cinema

Group No: 2

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PART I: Analysis

1 Problem Definition and Data Requirements

1.1 Problem Description

This project about design a database for ticketing system for Cinema in Jeddah. To avoid the problems of manual booking, which is very difficult to maintain and to keep a full record about the daily purchase of ticket. It create many problem such as duplication of data and information, black ticket, waste staff' time and Difficulty managing and tracking sales and so on.

1.2 Data Requirements

1-The Movietable which will contains:

- The movie title.
- The movie director.
- The movie description.
- The movie duration.
- The movie id number.
- The movie rating.
- The movie start_time.
- The movie genera.

The movie id is the primary key.

2-The Auditoriumtable which will contains:

- The auditorium name.
- The auditorium id number.

- The auditorium number_of_seats.

The auditorium id is the primary key.

4-The Seattable which will contains:

- The seat id number.
- The seats row number.
- The seat number.
- The auditorium id number

The seat id and auditorium id are primary key
The auditorium id is a foreign key reference to Auditorium table.

5- The Reservation typetable which will contains:

- The type for each reservation.
- The id for each reservation type.

The Reservation type id is primary key

6- The employee table which will contains:

- The employee name.
- The employee user name.
- The employee password.
- The employee id number.

The id number is a primary key.

7- The seat reserved table which will contains:

- The seat reserved id number.
- The seat reserved price.
- The reservation id number.
- The seat id number

The seat reserved id number is a primary key.
The seat id and the reservation id are foreign keys references to seat table and the reservation table respectively.

8- The reservation table which will contains:

- The id number.
- The contact number for each person made a reservation
- The employee reserved id number
- The reservation type id number
- The movie id number
- The show time
- The auditorium id

The Reservation id number is a primary key.
The employee reserved id, the reservation type id and movie id and the auditoriumid are foreign keys references to employee's table and reservation table and movie's table ,auditorium'stable respectively.

1.3 Business Rules

1- The first movie will start at 16:00.
2- The last movie will start at 20:00.
3- Each cinema hall has one movie to show at time.
4- Customer can make many booking.
5- A booking can consist of one or many seats for the same movie at specific show time . If he want another movie or the same movie but in different show time, a new reservation will be made.
6- Cinema has a seat capacity.
7- The reservation type can be from application, online or in-person.

1.4 Intended Output of the system

In designing this database is expected to get answers to these questions which will help the Cinema officials todevelop the cinema and increasing profits by Providing customer requirements

- How many reservations profits per month?
- How many reservations made by the application, online or in-person every month?
- What are the most viewed movies in each month?

PART II: DATA BASE DEISGN

2.1 ER Diagram Design

2.1.1 ER Entities

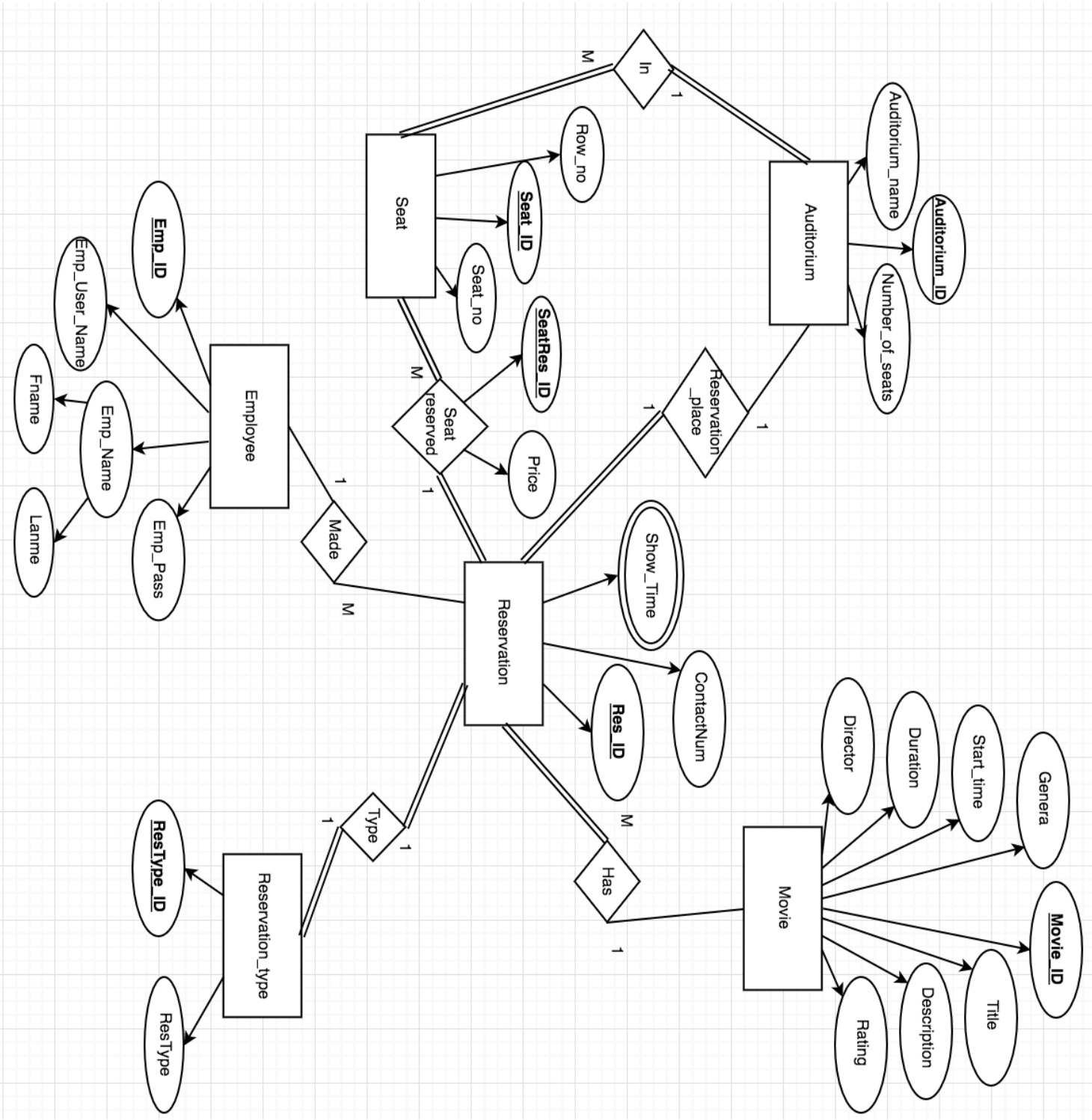
Entity/Type	Attribute	Attribute Constraint	Attribute Type	Justification
Movie	Movie_ID	UNIQUE (PK)	Atomic	...
	Duration	NOT NULL	Atomic	...
	Title	NOT NULL	Atomic	...
	Director	NOT NULL	Atomic	...
	Description	NOT NULL	Atomic	...
	Rating	NOT NULL	Atomic	...
	Start_time	NOT NULL	multivalue	...
	Genera	NOT NULL	multivalue	...

Employee	Emp_User_Name	NOT NULL	Atomic	...
	Emp_Name	NOT NULL	Composite	FName&LName
	Emp_ID	UNIQUE (PK)	Atomic	...
	Password	NOT NULL	Atomic	...
Reservation	Show_time	NOT NULL	Atomic	...
	Res_ID	NOT NULL	Atomic	...
	ContactNum	NOT NULL	Atomic	...
Seat	Seat_no	NOT NULL	Atomic	...
	Row_no	NOT NULL	Atomic	...
	Seat_ID	UNIQUE (PK)	Atomic	...
Reservation type	ResType	NOT NULL	Atomic	...
	ResType_ID	UNIQUE (PK)	Atomic	...
Auditorium	Number_of_seats	NOT NULL	Atomic	...
	Auditorium_Name	NOT NULL	Atomic	...
	Auditorium_ID	UNIQUE (PK)	Atomic	...

2.1.2 ER Relationships

Relationship	Entities	Participation	Cardinality Ratio	Justification
Made	Reservation, Employee	Many-Partial	M-1	...
Has	Reservation, Movie	Many-Partial	M-1	...
Type	Reservation, Reservationtype	Partial-Partial	1-1	...
Seat_reserved	Reservation, Auditorium	Partial-Partial	1-1	...
In	Seat, Auditorium	Many-Partial	M-1	...
Seat_reserved	Seat, Reservation	Many-Partial	M-1	...

2.1.3 ER diagram

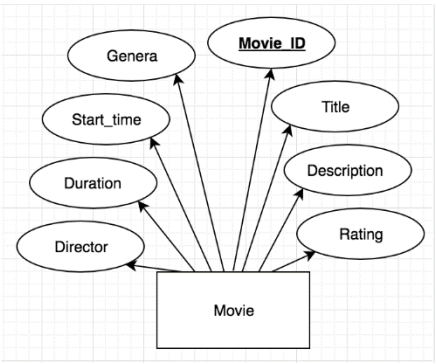


2.2 ER-to- logical schema mapping

2.2.1 Mapping of Regular Entity Types

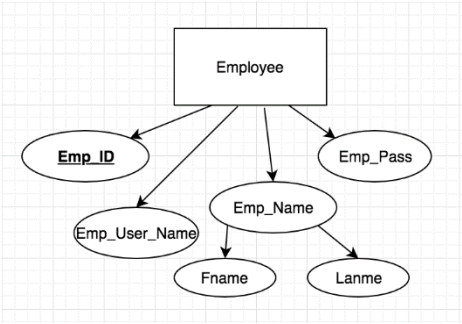
Movie

Movie_ID	Title	Director	Duration	Description	Rating	Start_time	Genera



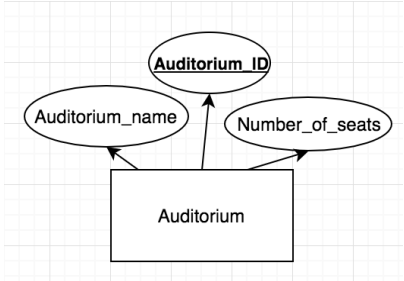
Employee

Emp_ID	Emp_Pass	Emp_FName	Emp_LName	Emp_User_Name



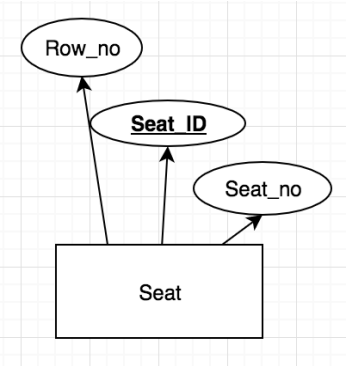
Auditorium

Auditorium_ID	Number_of_seats	Auditorium_name



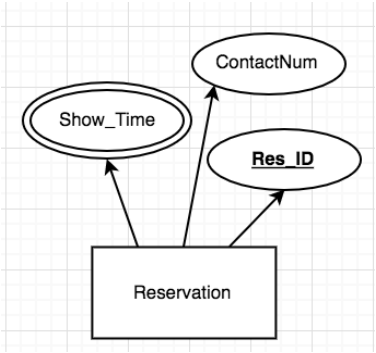
Seat

Seat_ID	Row_no	Seat_no	**Auditorium_ID**



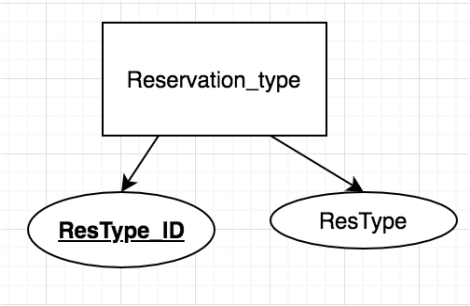
Reservation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time



Reservation type

ResType_ID	ResType



2.2.2 Mapping of Weak Entity Types

the system does not have weak entity relationship.

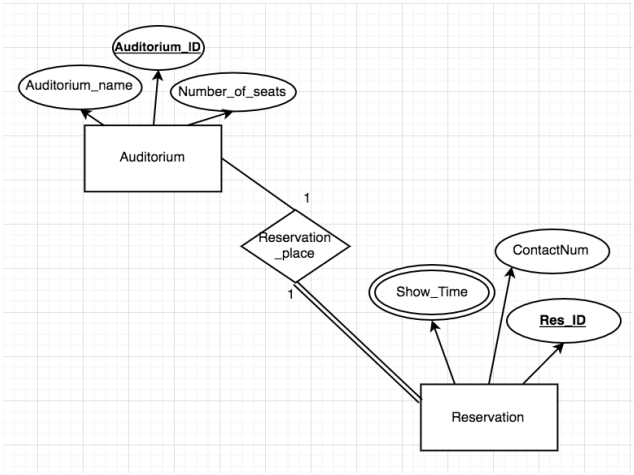
2.2.3 Mapping of binary 1-1 relationship types

Auditorium

Auditorium_ID	Number_of_seats	Auditorium_name

Reservation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time

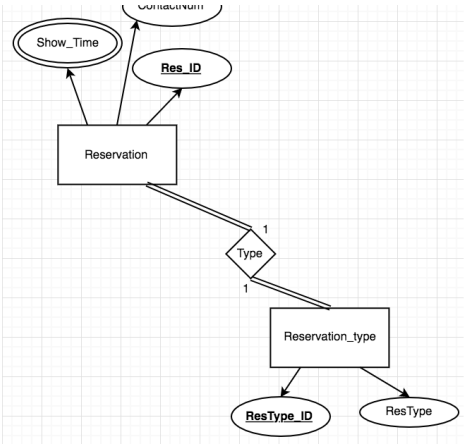


Reservation type

ResType_ID	ResType

Reservation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time



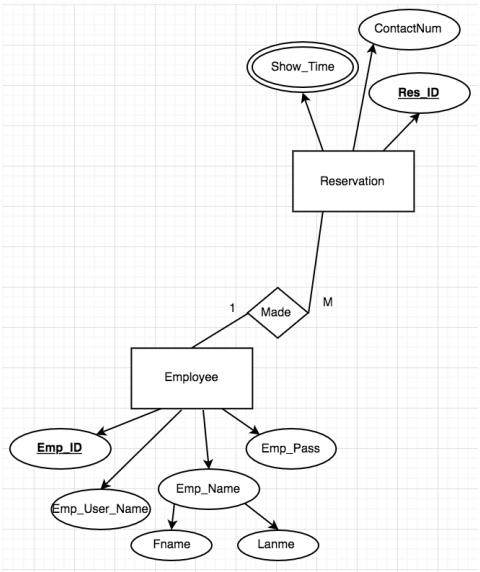
2.2.4 Mapping of binary 1-N relationship types

Employee

Emp_ID	Emp_Pass	Emp_FName	Emp_LName	Emp_User_Name

Reservation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time



Seat

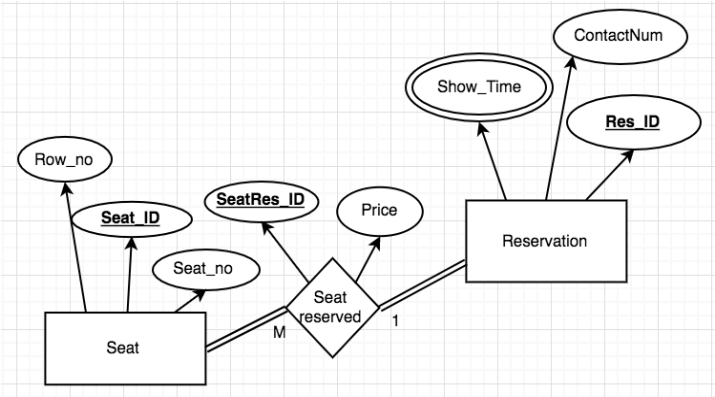
Seat_ID	Row_no	Seat_no	**Auditorium_ID**

Reservation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time

Seat reserved

SeatRes_ID	**Res_ID**	Seat_ID	Price

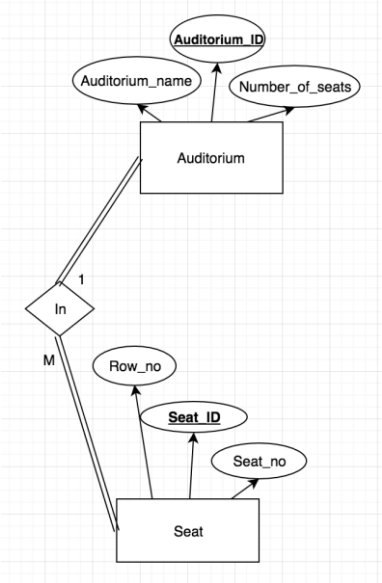


Seat

Seat_ID	Row_no	Seat_no	**Auditorium_ID**

Auditorium

Auditorium_ID	Number_of_seats	Auditorium_name

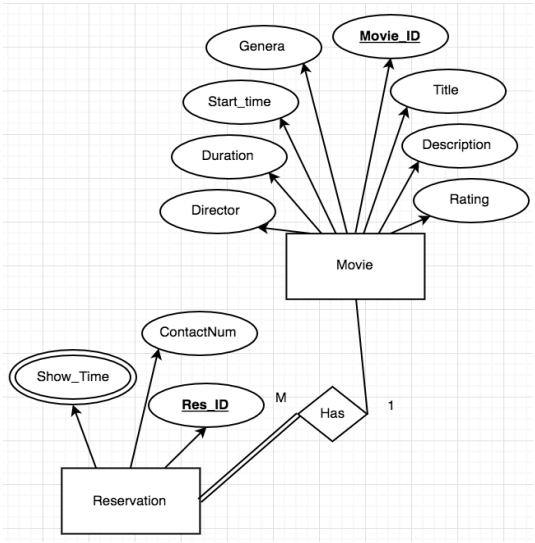


Movie

Movie_ID	Title	Director	Duration	Description	Rating	Start_time	Genera

Reservation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time



2.2.5 Mapping of binary M-N relationship types

the system does not have M-N relationship

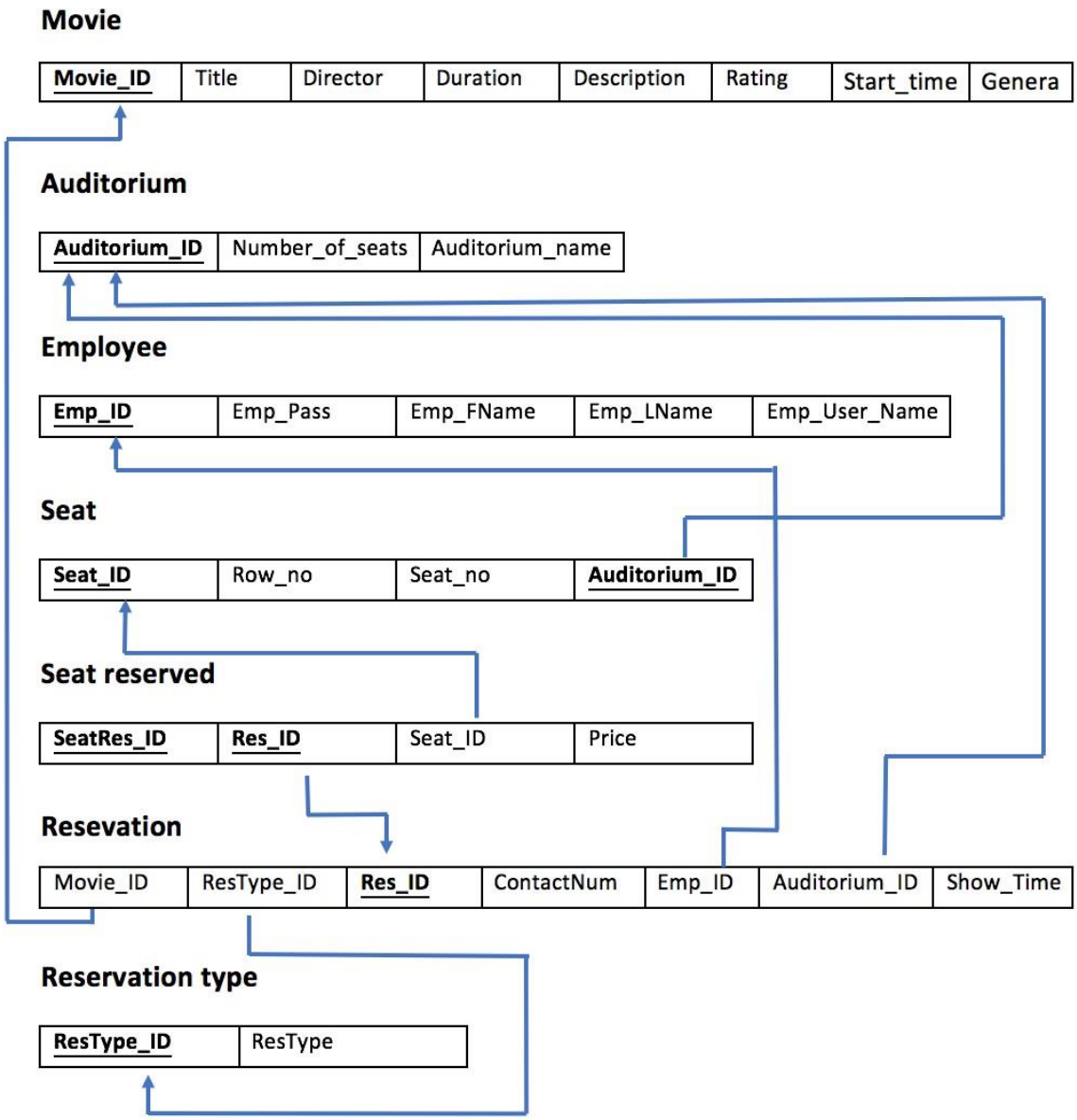
2.2.6 Mapping of multivalued attributes

the system does not have multivalued relationship

2.2.7 Mapping of n-ary relationship types

the system does not have n-ary relationship

2.2.8 Schema Diagram



2.3 Normalization

2.3.1 First Normal Form

Movie

Movie_ID	Title	Director	Duration	Description	Rating	start_time	genera

Table is not on first normal form
Reason : because the movie start time and genera are multivalues entity.

Movie_Genera

Movie_ID	**Genera**

Movie_Time

Movie_ID	**Start_time**

Movie

Movie_ID	Title	Director	Duration	Description	Rating

Auditorium

Auditorium_ID	Number_of_seats	Auditorium_name

Table on first normal form
Reason : because there are no multivalued or nested relation .

Employee

Emp_ID	Emp_Pass	Emp_FName	Emp_LName	Emp_User_Name

Table on first normal form
Reason : because there are no multivalued or nested relation .

Seat

Seat_ID	Row_no	Seat_no	**Auditorium_ID**

Table is not on first normal form
Reason : because each auditorium has a set of rows and each row has a set of seats number so there is a nested relation .

Seat

Seat_ID	**Auditorium_ID**

Seat_position

Seat_ID	**Row_no**	Seat_no

Seat reserved

SeatRes_ID	**Res_ID**	Seat_ID	Price

Table is not on first normal form
Reason : because maybe there will be multiple seats in one reservation

Seat reserved

SeatRes_ID	**Res_ID**	Price

SeatReserved_position

SeatRes_ID	**Seat_ID**

Resevation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Emp_ID	Auditorium_ID	Show_Time

Table is not on first normal form
Reason : because maybe one employee make more than one reservation

Resevation

Movie_ID	ResType_ID	**Res_ID**	ContactNum	Auditorium_ID	Show_Time

Reservation_Employee

Emp_ID	Res_ID

Reservation type

ResType_ID	ResType

Table on first normal form
Reason : because there are no multivalued or nested relation .

2.3.2 Second Normal Form

Movie_Genera

Movie_ID	**Genera**

Table on second normal form
Reason :

- It is in first normal form
- There is no non primary key attribute, so there is no problem in the second normal form

Movie_Time

Movie_ID	**Start_time**

Table on second normal form
Reason :

- It is in first normal form
- There is no non primary key attribute, so there is no problem in the second normal form

Movie

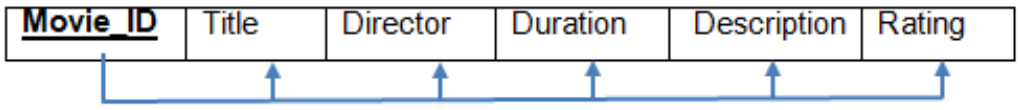


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

Auditorium

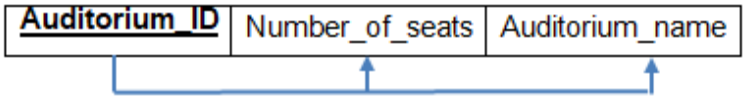


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

Employee

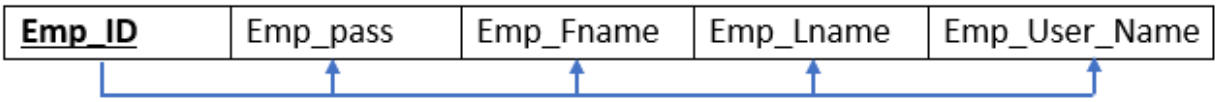


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

Seat

Seat ID	Auditorium ID

Table on second normal form
Reason :

- It is in first normal form
- There is no non primary key attribute, so there is no problem in the second normal form

Seat_position

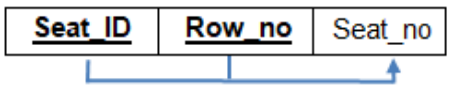


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

Seat_reserved

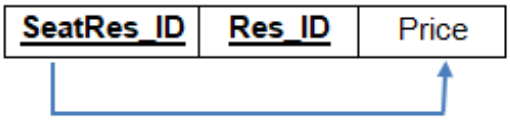


Table is not in the second normal form
Reason :

- It is in first normal form
- The seat price is non primary key depends on the part of the primary key

Seat_price

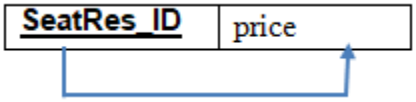


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

SeatReserved_position

SeatRes_ID	Seat_ID

Table on second normal form
Reason :

- It is in first normal form
- There is no non primary key attribute, so there is no problem in the second normal form

Resevation

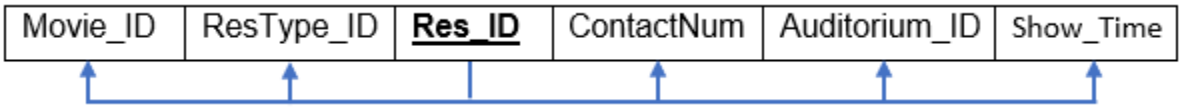


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

Reservation_Employee

Emp_ID	Res_ID

Table on second normal form
Reason :

- It is in first normal form
- There is no non primary key attribute, so there is no problem in the second normal form

Reservation type

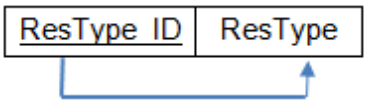


Table on second normal form
Reason :

- It is in first normal form
- All non-key attributes are fully functional dependent on the primary key

2.3.3 Third Normal Form

Movie_Genera

Movie_ID	Genera

Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Movie_Time

Movie_ID	Start_time

Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Movie

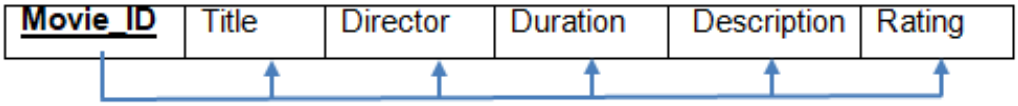


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Auditorium

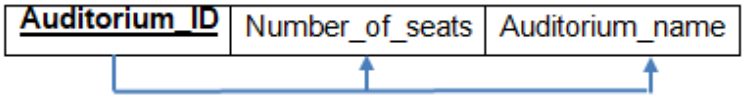


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Employee

Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

eat

Seat_ID	Auditorium_ID

Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Seat_position

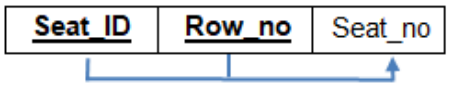


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Seat_reserved

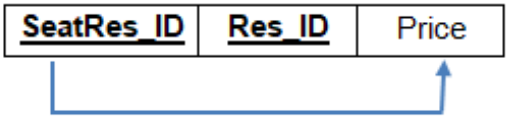


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Seat_price

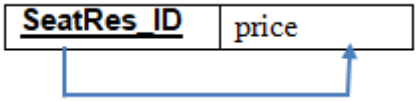


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

SeatReserved_position

SeatRes_ID	Seat_ID

Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Resevation

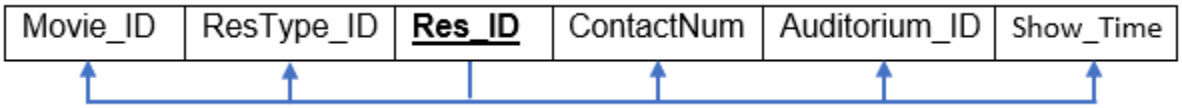


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Reservation_Employee

Emp_ID	Res_ID

Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

Reservation type

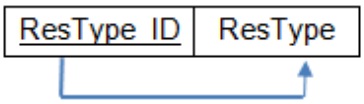


Table on third normal form
Reason :

- It is in first normal form
- It is in second normal form
- There is no transitive dependency, so there is no problem in the third normal form

2.4 Final DB Schema

Movie

Movie_ID	Title	Director	Duration	Description	Rating

Movie_Time

Movie_ID	Start_time

Movie_Genera

Movie_ID	Genera

Auditorium

Auditorium_ID	Number_of_seats	Auditorium_name

Employee

Emp_ID	Emp_Pass	Emp_Fname	Emp_Lname	Emp_User_Name

Reservation_Employee

Emp_ID	Res_ID

Seat

Seat_ID	Auditorium_ID

Seat_position

Seat_ID	Row_no	Seat_no

Seat_reserved

SeatRes_ID	Res_ID

Seat Price

SeatRes_ID	Price

SeatReserved_position

SeatRes_ID	Seat_ID

Resevation

Movie_ID	ResType_ID	Res_ID	ContactNum	Auditorium_ID	Show_Time

Reservation type

ResType_ID	ResType

PART III: IMPLEMENTATION

3.1 Table Creation Script

3.1.1 <Movie> TABLE

```
create table Movie (

Movie_ID number(9),

Title varchar(30),

Director varchar(30),

Duration varchar(20),

Description varchar(250),

Rating varchar(30)

);
insert into movie values(121212121,'Balck panther','Ryan Coogler','134 min','Challa, the King of Wakanda, rises to the throne in the isolated, technologically advanced African nation, but his claim is challenged by a vengeful outsider who was a childhood victim of Challas father mistake.','7.7/10');


insert into movie values(123456789,'A Quiet place','John krasinski','90 min','A family is forced to live in silence while hiding from creatures that hunt by sound','8.1/10');


insert into movie values(145698752,'Rampage','Brad peyton','107 min','When three different animals become infected with a dangerous pathogen, a primatologist and a geneticist team up to stop them from destroying Chicago.','6.5/10');


insert into movie values(154789625,'12 Strong','Nicolai Fuglsig','130 min','12 Strong tells the story of the first Special Forces team deployed to Afghanistan after 9/11; under the leadership of a new captain, the team must work with an Afghan warlord to take down the Taliban','6.6/10');
```

insert into movie values(784596324,'Incredibles 2','Brad Bird','90 min','Bob Parr (Mr. Incredible) is left to care for Jack-Jack while Helen 6(Elastigirl) is out saving the world.','6/10');

insert into movie values(667865478,'Peter Rabbit','Will Gluck','95 min','Feature adaptation of Beatrix Potters classic tale of a rebellious rabbit trying to sneak into a farmers vegetable garden.','6.6/10');

insert into movie values(456378594,'Ocean 8','Gary Ross','110 min','Debbie Ocean gathers a crew to attempt an impossible heist at New York City yearly Met Gala.','7/10');

insert into movie values(546789543,'The Titan','Lennart Ruff','97 min','A military family takes part in a ground-breaking experiment of genetic evolution and space exploration.','4.9/10');

insert into movie values(326578946,'Coco','Lee unkrich','105 min','Aspiring musician Miguel, confronted with his family ancestral ban on music, enters the Land of the Dead to find his great-great-grandfather, a legendary singer.','8.5/10');

insert into movie values(435442544,'Kidnap',' Luis Prieto','95 min','A mother stops at nothing to recover her kidnapped son.','5.9/10');

3.1.2 <Employee> TABLE

```
create table Employee (

Emp_ID number(7),

Emp_pass varchar(20),

Emp_Fname varchar(20),

Emp_Lname varchar(20),

Emp_User_Name varchar(20));
```

```
insert into  employee values (1512018,'ER456gt','ahmad','khaled','AK00001');

insert into  employee values (1502018,'HJ894jk','muhamed','salem','MS00001');

insert into  employee values (1522018,'WE567gh','omar','yahya','OY00001');

insert into  employee values (1532018,'AS345hg','basem','fahed','BF00001');

insert into  employee values (1542018,'FB890pl','adnan','muhammed','AM00001');

insert into  employee values (1552018,'OK986JK','abdurhman','muhammed','AM00002');

insert into  employee values (1562018,'FY653gs','saleh','khaled','SK00001');

insert into  employee values (1572018,'JH234yh','husain','naher','HN00001');

insert into  employee values (1582018,'CV098ij','zaher','eyad','ZE00001');

insert into  employee values (1592018,'PL876tf','muheson','ahmad','MA00001');
```

3.1.3 <Seat> TABLE

```
create table Seat (

Seat_ID varchar(9),

Auditorium_ID number(10));

insert into  seat values('AAA0000',1110000);

insert into  seat values('BBB0000',1110001);

insert into  seat values('CCC0000',1110002);

insert into  seat values('DDD0000',1110003);

insert into  seat values('EEE0000',1110004);

insert into  seat values('FFF0000',1110005);

insert into  seat values('HHH0000',1110006);

insert into  seat values('III0000',1110007);

insert into  seat values('JJJ0000',1110008);

insert into  seat values('KKK0000',1110009);
```

3.1.4 <Reservation> TABLE

```
create table Reservation (

Movie_ID number(9),

ResType_ID number(10),

Res_ID number(10),

ContactNum varchar(20),

Auditorium_ID number(10),

Show_time varchar(20));

Insert into Reservation values(121212121, 1000000001, 000000001, '0556667778', 1110000,
'20:00 pm');


Insert into Reservation values(154789625, 1000000002, 000000002, '0553338899', 1110001,
'19:00 pm');

Insert into Reservation values(145698752, 1000000003, 000000003, '0555378464', 1110002,
'18:45 pm');

Insert into Reservation values(154789625, 1000000004, 000000004, '0564746472', 1110003,
'19:00 pm');

Insert into Reservation values(784596324, 2000000001, 000000005, '0556642866', 1110004,
'16:00 pm');

Insert into Reservation values(784596324, 2000000002, 000000006, '0556777777', 1110005,
'19:30 pm');

Insert into Reservation values(784596324, 2000000003, 000000007, '0553333333', 1110006,
'16:00 pm');

Insert into Reservation values(121212121, 2000000004, 000000008, '0556111111', 1110007,
'20:00 pm');

Insert into Reservation values(145698752, 2000000005, 000000009, '0556600000', 1110008,
'18:45 pm');
```

```
Insert into Reservation values(145698752, 2000000006, 000000010, '0556333355', 1110009,
'18:45 pm');
```

3.1.5 <Auditorium> TABLE

```
create table Auditorium (

Auditorium_ID number(10),

Number_of_seats number(10),

Auditorium_name varchar(30)

);
insert into  auditorium values (1110000,50,'A auditorium');

insert into  auditorium values (1110001,90,'B auditorium');

insert into  auditorium values (1110002,100,'C auditorium');

insert into  auditorium values (1110003,60,'D auditorium');

insert into  auditorium values (1110004,60,'E auditorium');

insert into  auditorium values (1110005,80,'F auditorium');

insert into  auditorium values (1110006,80,'H auditorium');

insert into  auditorium values (1110007,30,'I auditorium');

insert into  auditorium values (1110008,60,'J auditorium');

insert into  auditorium values (1110009,50,'K auditorium');
```

3.1.6 <Reservation type> TABLE

```
create table Reservation_type (

ResType_ID number(10),

ResType varchar(30));

Insert into Reservation_type values(1000000001, 'Online');

Insert into Reservation_type values(1000000002, 'In-Person');

Insert into Reservation_type values(1000000003, 'Online');
```

Insert into Reservation_type values(1000000004, 'Online');

Insert into Reservation_type values(2000000001, 'Online');

Insert into Reservation_type values(2000000002, 'In-Person');

Insert into Reservation_type values(2000000003, 'In-Person');

Insert into Reservation_type values(2000000004, 'Online');

Insert into Reservation_type values(2000000005, 'In-Person');

Insert into Reservation_type values(2000000006, 'Online');

3.1.7 <Movie Genera> TABLE

create table Movie_Genera (

Movie_ID number(9),

Genera varchar(25));

insert into Movie_Genera values(121212121,'Action');

insert into Movie_Genera values(123456789,'Drama');

insert into Movie_Genera values(123456789,'Horror');

insert into Movie_Genera values(145698752,'Sci-Fi');

insert into Movie_Genera values(154789625,'History');

insert into Movie_Genera values(784596324,'Animation');

insert into Movie_Genera values(784596324,'Adventure');

insert into Movie_Genera values(667865478,'Animation');

insert into Movie_Genera values(456378594,'Crime');

insert into Movie_Genera values(546789543,'Thriller');

insert into Movie_Genera values(326578946,'Comedy');

insert into Movie_Genera values(435442544,'Drama');

insert into Movie_Genera values(435442544,'Action');

3.1.8 <Movie Time> TABLE

```
create table Movie_Time (

Movie_ID number(9),

Start_time varchar(10));

insert into movie_Time values(121212121,'20:00 pm');

insert into movie_Time values(123456789,'19:30 pm');

insert into movie_Time values(145698752,'18:45 pm');

insert into movie_Time values(154789625,'19:00 pm');

insert into movie_Time values(784596324,'16:00 pm');

insert into movie_Time values(784596324,'19:30 pm');

insert into movie_Time values(667865478,'16:30 pm');

insert into movie_Time values(456378594,'20:00 pm');

insert into movie_Time values(546789543,'17:00 pm');

insert into movie_Time values(326578946,'17:00 pm');

insert into movie_Time values(326578946,'20:00 pm');

insert into movie_Time values(435442544,'19:30 pm');
```

3.1.9 <Seat position> TABLE

```
create table Seat_position (

Seat_ID varchar(9),

Row_no varchar(1),

Seat_no number(3));

insert into  seat_position values('AAA0000','1',1);

insert into  seat_position values('BBB0000','1',1);
```

```
insert into  seat_position values('CCC0000','1',1);

insert into  seat_position values('DDD0000','1',1);

insert into  seat_position values('EEE0000','1',1);

insert into  seat_position values('FFF0000','1',1);

insert into  seat_position values('HHH0000','1',1);

insert into  seat_position values('III0000','1',1);

insert into  seat_position values('JJJ0000','1',1);

insert into  seat_position values('KKK0000','1',1);
```

3.1.10 <Seat reserved> TABLE

```
create table Seat_reserved (

SeatRes_ID number(10),

Res_ID number(10));
Insert into Seat_reserved values(1800000001, 000000001);

Insert into Seat_reserved values(1800000002, 000000002);

Insert into Seat_reserved values(1800000003, 000000003);

Insert into Seat_reserved values(1800000004, 000000004);

Insert into Seat_reserved values(1800000005, 000000005);

Insert into Seat_reserved values(1800000006, 000000006);

Insert into Seat_reserved values(1800000007, 000000007);

Insert into Seat_reserved values(1800000008, 000000008);

Insert into Seat_reserved values(1800000009, 000000009);

Insert into Seat_reserved values(1800000010, 000000010);
```

3.1.11 <Seat price> TABLE

```
create table Seat_price (

SeatRes_ID number(10),

Price number(10));

Insert into Seat_price values(1800000001, 25);

Insert into Seat_price values(1800000002, 20);

Insert into Seat_price values(1800000003, 20);

Insert into Seat_price values(1800000004, 20);

Insert into Seat_price values(1800000005, 25);

Insert into Seat_price values(1800000006, 20);

Insert into Seat_price values(1800000007, 20);

Insert into Seat_price values(1800000008, 20);

Insert into Seat_price values(1800000009, 20);

Insert into Seat_price values(1800000010, 20);
```

3.1.12 <Seat Reserved position> TABLE

```
create table SeatReserved_position (

SeatRes_ID number(10),

Seat_ID varchar(9) );

Insert into SeatReserved_position values(1800000001, 'AAA0000');

Insert into SeatReserved_position values(1800000002, 'BBB0000');

Insert into SeatReserved_position values(1800000003, 'CCC0000');

Insert into SeatReserved_position values(1800000004, 'DDD0000');

Insert into SeatReserved_position values(1800000005, 'EEE0000');
```

Insert into SeatReserved_position values(1800000006, 'FFF0000');

Insert into SeatReserved_position values(1800000007, 'HHH0000');

Insert into SeatReserved_position values(1800000008, 'III0000');

Insert into SeatReserved_position values(1800000009, 'JJJ0000');

Insert into SeatReserved_position values(1800000010, 'KKK0000');

3.1.13 <Reservation Employee> TABLE

```
create table Reservation_Employee (
Emp_ID number(10),
Res_ID number(10));
```

insert into reservation_employee values(1512018,000000001);

insert into reservation_employee values(1512018,000000002);

insert into reservation_employee values(1532018,000000003);

insert into reservation_employee values(1542018,000000004);

insert into reservation_employee values(1562018,000000005);

insert into reservation_employee values(1542018,000000006);

insert into reservation_employee values(1522018,000000007);

insert into reservation_employee values(1582018,000000008);

insert into reservation_employee values(1582018,000000009);

insert into reservation_employee values(1572018,000000010);

3.2 Constraints Script

alter table movie

add primary key (movie_id);

alter table movie_time

```
add constraint pk_movie_time primary key (movie_id,start_time);

alter table movie_genera
add constraint pk_movie_genera primary key (movie_id,genera);

alter table auditorium
add primary key (auditorium_id);

alter table employee
add primary key (emp_id);

alter table reservation_employee
add constraint pk_reservation_employee primary key (emp_id,res_id);

alter table seat
add primary key (seat_id);

alter table seat_position
add constraint pk_seat_position primary key (seat_id,row_no);

alter table seat_reserved
add primary key ( seatres_id );

alter table seat_price
```

```
add primary key (seatres_id);

alter table seatreserved_position
add constraint pk_seatreserved_position primary key (seatres_id,seat_id);

alter table reservation
add primary key (res_id);

alter table reservation_type
add primary key (restype_id);

alter table movie_time
add foreign key ( movie_id ) references movie( movie_id);

alter table movie_genera
add foreign key ( movie_id ) references movie( movie_id);
alter table reservation_employee
add foreign key ( emp_id ) references employee(emp_id)
add foreign key ( res_id ) references reservation(res_id);

alter table seat
add foreign key ( auditorium_id) references auditorium( auditorium_id);

alter table seat_reserved
add foreign key (res_id) references reservation(res_id);
```

alter table seatreserved_position

add foreign key (seatres_id) references seat_reserved(seatres_id);

alter table seat_price

add foreign key (seatres_id) references seat_reserved(seatres_id);

alter table seat_position

add foreign key (seat_id) references seat(seat_id);

alter table reservation

add foreign key (movie_id, show_time) references movie_time (movie_id , start_time)

add foreign key (restype_id) references reservation_type(restype_id)

add foreign key (auditorium_id) references auditorium (auditorium_id);

3.3 Report Query Script

3.3.1 <the most watched>

Query in natural language (ENGLISH)

Retrieve the most viewed movie title

SQL script

```
SQL> select title from movie where movie_id in
  2  (select movie_id from reservation group by movie_id
  3  having count(*)=(select MAX(count(*)) from reservation group by movie_id));
```

Caption of the first five rows of the output

```
TITLE
------------------------------
Rampage
Incredibles 2
```

3.3.2 <the financial revernues>

Query in natural language (ENGLISH)

Retrieve the sum of the financial revenues

SQL script

```
SQL> select sum(price) from seat_price;
```

Caption of the first five rows of the output

```
SUM(PRICE)
----------
       210
```

3.3.3 <the seat reserved number>

Query in natural language (ENGLISH)

Retrieve the number of seat reserved for each reservation

SQL script

```
SQL> select count(*) from seat_reserved group by res_id;
```

Caption of the first five rows of the output

```
  COUNT(*)
----------
         1
         1
         1
         1
         1
         1
         1
         1
         1
         1

10 rows selected.
```

3.3.4 <Non-watch movie>

Query in natural language (ENGLISH)

Retrieve the movie title, which is not viewed

SQL script

```
SQL> select title
  2  from movie m
  3  where not exists
  4  (select * from reservation r
  5  where m.movie_id=r.movie_id);
```

Caption of the first five rows of the output

```
TITLE
------------------------------
A Quiet place
Coco
Kidnap
Ocean 8
The Titan
Peter Rabbit

6 rows selected.
```

3.3.5 <employee Reservation>

Query in natural language (ENGLISH)

Retrieve the employee name, who made two or more reservation

SQL script

```
SQL> select emp_fname, emp_lname
  2  from employee e
  3  where ( select count(*)
  4  from reservation_employee r
  5  where e.emp_id = r.emp_id ) = 2;
```

Caption of the first five rows of the output

```
EMP_FNAME            EMP_LNAME
-------------------- --------------------
ahmad                khaled
adnan                muhammed
zaher                eyad
```

APPENDIX

MOVIE_ID	TITLE	DIRECTOR	DURATION	DESCRIPTION	RATING
121212121	Balck panther	Ryan Coogler	134 min	Challa, the King of Wakanda, rises to the throne in the isolated, technologically advanced African nation, but his claim is challenged by a vengeful outsider who was a childhood victim of Challas father mistake.	7.7/10
123456789	A Quiet place	John krasinski	90 min	A family is forced to live in silence while hiding from creatures that hunt by sound	8.1/10
145698752	Rampage	Brad peyton	107 min	When three different animals become infected with a dangerous pathogen, a primatologist and a geneticist team up to stop them from destroying Chicago.	6.5/10
154789625	12 Strong	Nicolai Fuglsig	130 min	12 Strong tells the story of the first Special Forces team deployed to Afghanistan after 9/11; under the leadership of a new captain, the team must work with an Afghan warlord to take down the Taliban	6.6/10
784596324	Incredibles 2	Brad Bird	90 min	Bob Parr (Mr. Incredible) is left to care for Jack-Jack while Helen 6(Elastigirl) is out saving the world.	6/10
667865478	Peter Rabbit	Will Gluck	95 min	Feature adaptation of Beatrix Potters classic tale of a rebellious rabbit trying to sneak into a farmers vegetable garden.	6.6/10
456378594	Ocean 8	Gary Ross	110 min	Debbie Ocean gathers a crew to attempt an impossible heist at New York City yearly Met Gala.	7/10
546789543	The Titan	Lennart Ruff	97 min	A military family takes part in a ground-breaking experiment of genetic evolution and space exploration.	4.9/10
326578946	Coco	Lee unkrich	105 min	Aspiring musician Miguel, confronted with his family ancestral ban on music, enters the Land of the Dead to find his great-great-grandfather, a legendary singer.	8.5/10
435442544	Kidnap	Luis Prieto	95 min	A mother stops at nothing to recover her kidnapped son.	5.9/10

EMP_ID	EMP_PASS	EMP_FNAME	EMP_LNAME	EMP_USER_NAME
1502018	HJ894jk	muhamed	salem	MS00001
1522018	WE567gh	omar	yahya	OY00001
1532018	AS345hg	basem	fahed	BF00001
1542018	FB890pl	adnan	muhammed	AM00001
1552018	OK986JK	abdurhman	muhammed	AM00002
1562018	FY653gs	saleh	khaled	SK00001
1572018	JH234yh	husain	naher	HN00001
1582018	CV098ij	zaher	eyad	ZE00001
1592018	PL876tf	muheson	ahmad	MA00001
1512018	ER456gt	ahmad	khaled	AK00001

MOVIE_ID	START_TIME
121212121	20:00 pm
123456789	19:30 pm
145698752	18:45 pm
154789625	19:00 pm
784596324	16:00 pm
784596324	19:30 pm
667865478	16:30 pm
456378594	20:00 pm
546789543	17:00 pm
326578946	17:00 pm
326578946	20:00 pm
435442544	19:30 pm

MOVIE_ID	GENERA
121212121	Action
123456789	Drama
123456789	Horror
145698752	Sci-Fi
154789625	History
784596324	Animation
784596324	Adventure
667865478	Animation
456378594	Crime
546789543	Thriller
326578946	Comedy
435442544	Drama
435442544	Action

MOVIE_ID	RESTYPE_ID	RES_ID	CONTACTNUM	AUDITORIUM_ID	SHOW_TIME
121212121	1000000001	1	0556667778	1110000	20:00 pm
154789625	1000000002	2	0553338899	1110001	19:00 pm
145698752	1000000003	3	0555378464	1110002	18:45 pm
154789625	1000000004	4	0564746472	1110003	19:00 pm
784596324	2000000001	5	0556642866	1110004	16:00 pm
784596324	2000000002	6	0556777777	1110005	19:30 pm
784596324	2000000003	7	0553333333	1110006	16:00 pm
121212121	2000000004	8	0556111111	1110007	20:00 pm
145698752	2000000005	9	0556600000	1110008	18:45 pm
145698752	2000000006	10	0556333355	1110009	18:45 pm

RESTYPE_ID	RESTYPE
1000000001	Online
1000000002	In-Person
1000000003	Online
1000000004	Online
2000000001	Online
2000000002	In-Person
2000000003	In-Person
2000000004	Online
2000000005	In-Person
2000000006	Online

AUDITORIUM_ID	NUMBER_OF_SEATS	AUDITORIUM_NAME
1110000	50	A auditorium
1110001	90	B auditorium
1110002	100	C auditorium
1110003	60	D auditorium
1110004	60	E auditorium
1110005	80	F auditorium
1110006	80	H auditorium
1110007	30	I auditorium
1110008	60	J auditorium
1110009	50	K auditorium

EMP_ID	RES_ID
1512018	1
1512018	2
1532018	3
1542018	4
1562018	5
1542018	6
1522018	7
1582018	8
1582018	9
1572018	10

SEAT_ID	AUDITORIUM_ID
AAA0000	1110000
BBB0000	1110001
CCC0000	1110002
DDD0000	1110003
EEE0000	1110004
FFF0000	1110005
HHH0000	1110006
III0000	1110007
JJJ0000	1110008
KKK0000	1110009

SEAT_ID	ROW_NO	SEAT_NO
AAA0000	1	1
BBB0000	1	1
CCC0000	1	1
DDD0000	1	1
EEE0000	1	1
FFF0000	1	1
HHH0000	1	1
III0000	1	1
JJJ0000	1	1
KKK0000	1	1

SEATRES_ID	PRICE
1800000001	25
1800000002	20
1800000003	20
1800000004	20
1800000005	25
1800000006	20
1800000007	20
1800000008	20
1800000009	20
1800000010	20

SEATRES_ID	SEAT_ID
1800000001	AAA0000
1800000002	BBB0000
1800000003	CCC0000
1800000004	DDD0000
1800000005	EEE0000
1800000006	FFF0000
1800000007	HHH0000
1800000008	III0000
1800000009	JJJ0000
1800000010	KKK0000

SEATRES_ID	RES_ID
1800000001	1
1800000002	2
1800000003	3
1800000004	4
1800000005	5
1800000006	6
1800000007	7
1800000008	8
1800000009	9
1800000010	10