

Dr. B. R. Ambedkar National Institute of Technology, Jalandhar

Fundamentals Of Database Management Project (Theatre Management System)

Submitted By :-Love Sahajbir Singh- 19124035 Nishant Meena- 19124040

Submitted To :- Dr. Amritpal Singh

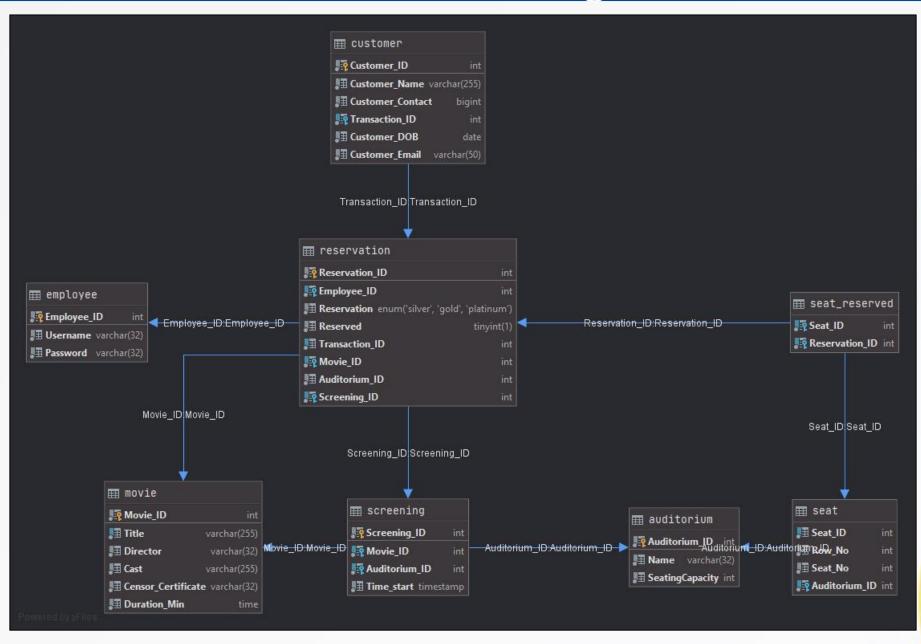
Introduction

- ➤ In this project, we have build a database for Theatre Management System.
- The main aim of this project is to store the details of Reservation, Customer, Movie, Employee, Auditorium, Screening, Seat, Seat Reserved.
- The main purpose of this type of database is to reduce the manual error involved in storing all these details. Due to automation, many loopholes that exist in the manual maintenance of the records can be removed.





Database Design



Creating Tables

Create table Reservation (Reservation ID int auto_increment primary key, Employee_ID int not null, Reservation enum ('Silver', 'Gold', 'Platinum') default 'Silver' not null, Reserved tinyint(1) default 0 not null, Transaction_ID int not null, Movie_ID int not null, Auditorium_ID int not null, Screening_ID int not null, constraint reservation_employee_Transaction_index unique (Transaction_ID));

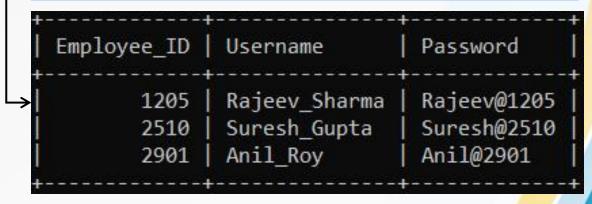
eservation_ID	Employee_ID	Reservation	Reserved	Transaction_ID	Movie_ID	Auditorium_ID	Screening_ID
101	2510	Silver	1	54678	1	1	139
102	2510	Silver	1	76543	1	1	139
103	2510	Silver	0	87765	1	1	139
104	2510	Gold	1	49869	1	1	139
105	2510	Gold	1	45698	1	1	139
106	2510	Gold	0	39849	1	1	139
107	2510	Platinum	1	45670	1	1	139
108	2510	Platinum	1	12987	1	1	139
109	2510	Platinum	0	72839	1	1	139
201	1205	Silver	1	83259	5	2	239
202	1205	Silver	1	76899	5	2	239
203	1205	Silver	0	56328	5	2	239
204	1205	Gold	1	50982	5	2	239
205	1205	Gold	1	57458	5	2	239
206	1205	Gold	0	52938	5	2	239
207	1205	Platinum	1	24378	5	2	239
208	1205	Platinum	1	63478	5	2	239
209	1205	Platinum	0	56788	5	2	239
301	2901	Silver	1	34780	8	3	339
302	2901	Silver	1	12378	8	3	339
303	2901	Silver	0	20394	8	3	339
304	2901	Gold	1	12347	8	3	339
305	2901	Gold	1	34798	8	3	339
306	2901	Gold	0	23489	8	3	339
307	2901	Platinum	1	39847	8	3	339
308	2901	Platinum	1	23748	8	3	339
309	2901	Platinum	0	39800	8	3	339

Create table customer (Customer_ID int not null primary key, Customer_Name varchar(255) not null, **Customer_Contact bigint not** null, Transaction_ID int not null, Customer DOB date not null, **Customer Email** varchar(50) not null, constraint Customer_Transaction_ID_u index unique (Transaction_ID));

stomer_ID	Customer_Name	Customer_Contact	Transaction_ID	Customer_DOB	Customer_Email
1	Jiya	9559834463	54678	2003-12-02	 jiya0212@gmail.com
2	Sahaj	6519160263	76543	2000-02-12	lovesahaj1225@protonmail.co
3	Anusha	8413049646	87765	2000-01-23	anusha2301@gmail.com
4	Bhavleen	7358958044	49869	1988-10-20	bhavleen2010@gmail.com
5	Naveen	8506972994	45698	1965-03-12	naveen1203@gmail.com
6	Aryan	9922528204	39849	1976-11-09	aryan0911@gmail.com
7	Surbhi	8131189118	45670	2012-08-30	surbhi3008@gmai.com
8	Manya	8844549128	12987	1991-01-18	manya1809@gmail.com
9	Ram	6286916457	72839	1960-02-28	ram2801@gmail.com
10	Shaurya	6031079825	83259	2009-09-05	shaurya342@gmail.com
11	Jahnavi	6719576060	76899	1990-12-05	jahnavi0512@gmail.com
12	Nishant	8869945831	56328	1985-10-25	nishant2510@gmail.com
13	Aanchal	7526550218	50982	1979-01-23	aanchal12301@gmail.com
14	Richa	6560319723	57458	1974-09-03	richa03019@gmail.com
15	Jatin	6719576060	52938	1982-06-24	jatin2401@gmail.com
16	Vivek	8979693405	24378	1970-09-21	vivek2120@gmail.com
17	Divya	6191852274	63478	1989-10-05	divya0401@gmail.com
18	Sonal	8837264694	56788	1976-07-17	sonal19198@gmail.com
19	Rajiv	7973786242	34780	1983-05-15	rajiv1234@gmail.com
20	Sumit	7088602806	12378	1988-11-25	sumit2551@gmail.com
21	Geeta	9571395450	20394	2000-07-24	geeta2113@gmail.com
22	Shivani	7772786691	12347	1997-09-25	shiv345@gmail.com
23	Sameer	8606019115	34798	1996-07-01	sam24@gmail.com
24	Reena	9089630929	23489	1990-05-04	reenam33@gmail.com
25	Bijoy	6235425961	39847	1997-04-21	bijoyy55@gmail.com
26	Ryan	7811169969	23748	1990-09-25	ryangold@gmail.com
27	Dev	6211269113	39800	1999-06-17	dev345@gmail.com

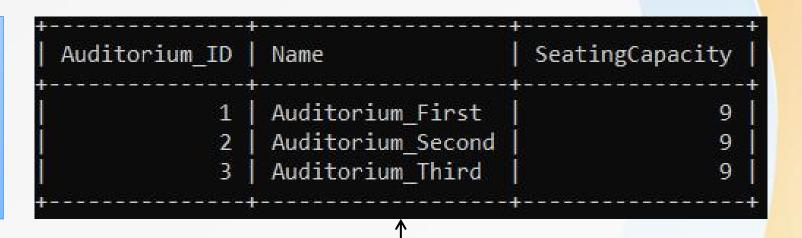
Create table Movie (Movie_ID int not null,
Title varchar(32) not null,
Director varchar(32) not null,
Cast varchar(255) not null,
Censor_Certificate varchar(32) not null,
Duration_Min time not null,
constraint PK_Movie primary key (Movie_ID));

Create table Employee (Employee_ID int not null, Username varchar(32) not null, Password varchar(32) not null, constraint PK_Employee primary key (Employee_ID));



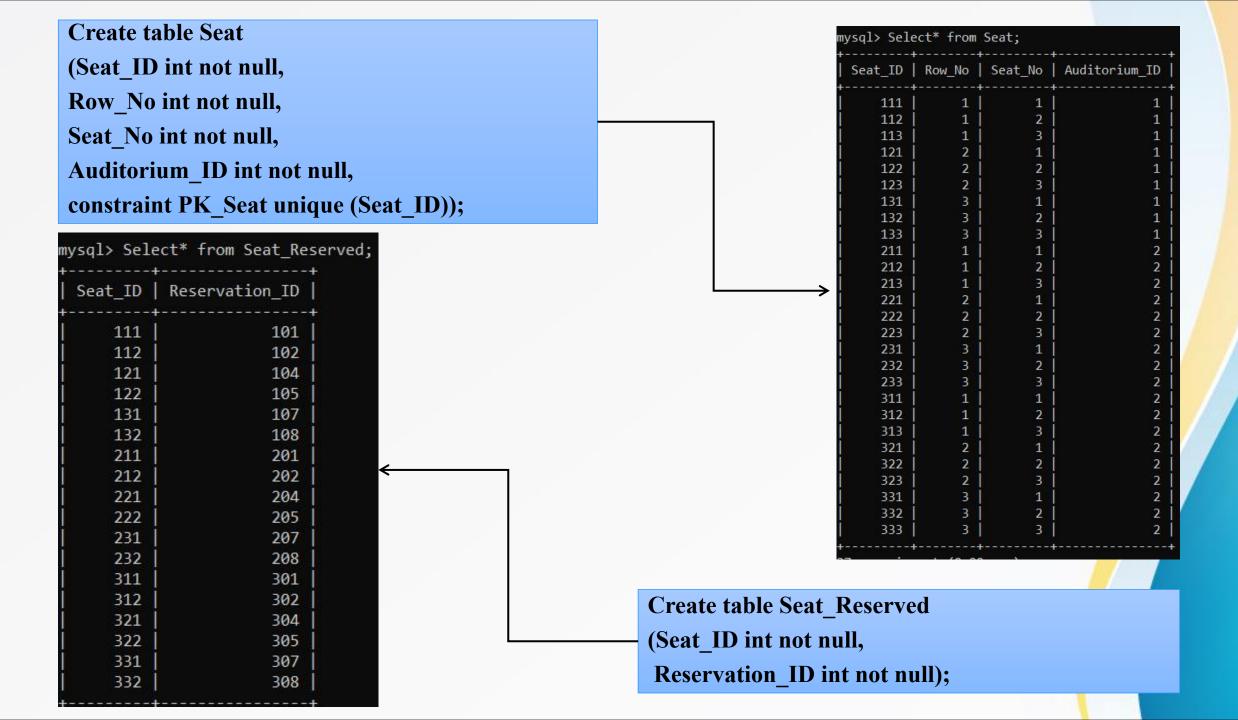
vie_ID	Title	Director	Cast	Censor_Certificate	Duration_Min
1	Jurassic Park	Steven Spielberg	Jeff Goldblum, Sam Neill, Laura Dern, Samuel L. Jackson, Richard Attenborough	PG-13	02:08:00
2	The Shining	Stanley Kubric	Jack Nicholson, Shelly Duvall, Danny Lloyd, Scatman Crothers, Joe Trukel	R	02:26:00
3	Good Will Hunting	Gus Van Sant	Matt Damon, Ben Affleck, Robin Williams, Casey Affleck, Minnie Driver	R	02:08:00
4	Knives Out	Rian Johnson	Ana de Armas, Chris Evans, Daniel Craig, Joseph Gordan-Levitt, Katherine Langford	PG-13	02:10:00
5	Dead Poet Society	Peter Weir	Robin Williams, Ethan Hawke, Robert Sean Leonard, Josh Charles, Gale Hansen	PG	02:08:00
6	The Godfather	Francis Ford Coppola	Al Pacino, Marlon Brando, James Caan, Diane Keaton, Talia Shire, John Cazale	R	02:55:00
7	The Lord of Rings	Peter Jackson	Elijah Wood, Iam McKellen, Orlando Bloom, Viggo Mortensen, Sean Astin, Sean Bean	PG-13	02:58:00
8	Star Wars - A New Hope	George Lucas	Carrie Fisher, James Earl Jones, Alec Guinness, Harrison Ford, Mark Hamil	PG	02:01:00
9	500 Days of Summer	Marc Webb	Joseph Gordan-Leviit, Zooey Deschanel, Matthew Fray Gubler, Chole Grace Moretz, Clark Gregg	PG-13	01:45:00
10	The Dark Knight	Christopher Nolan	Christian Bale, Gary Oldman, Heath Ledger, Micheal Cane, Morgan Freeman, Cillian Murphy	PG-13	02:32:00

Create table Auditorium
(Auditorium_ID int not null,
Name varchar(32) not null,
SeatingCapacity int not null,
constraint PK_Auditorium primary key
(Auditorium_ID));

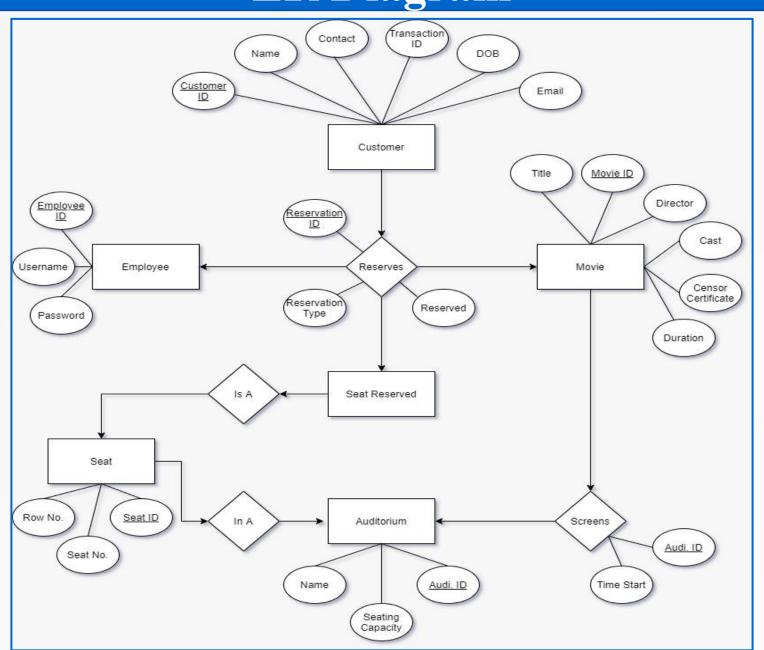


Create table Screening
(Screening_ID int not null,
Movie_ID int not null,
Auditorium_ID int not null,
Screening_Start timestamp,
constraint PK_Screening primary key
(Screening_ID));

Screening_ID	Movie_ID	Auditorium_ID	Screening_Start
420		+	
139	1		2020-11-26 13:30:00
239	5		2020-11-26 14:00:00
339	8	3	2020-11-26 12:30:00



ER Diagram



Descriptions of Database

Reservation Table

Field	Type	Null	Key	Default	Extra
Reservation_ID	int	NO	PRI	NULL	auto_increment
Employee_ID	int	NO		NULL	
Reservation	enum('Silver','Gold','Platinum')	NO		Silver	
Reserved	tinyint(1)	NO		0	
Transaction_ID	int	NO	UNI	NULL	
Movie_ID	int	NO		NULL	
Auditorium_ID	int	NO		NULL	
Screening_ID	int	NO		NULL	

Customer Table

Field	Type	Null	Key	Default	Extra
Customer_ID	int	NO	PRI	NULL	
Customer_Name	varchar(255)	NO		NULL	
Customer_Contact	bigint	NO		NULL	
Transaction ID	int	NO	UNI	NULL	ĺ
Customer DOB	date	NO		NULL	
Customer Email	varchar(50)	NO	j	NULL	j

Employee Table

Field	Type	Null	Key	Default	Extra
Auditorium_ID	int	NO NO	PRI	NULL	
Name	varchar(32)	NO	İ	NULL	İ
SeatingCapacity	int	NO		NULL	

Movie Table

Field	Type	Null	Key	Default	Extra
Employee_ID	int	NO	PRI	NULL	
Username	varchar(32)	NO		NULL	
Password	varchar(32)	NO		NULL	

Auditorium Table

Field	Type	Null	Key	Default	Extra
	+	t	t	+	+ I
Auditorium_ID	int	NO	PKT	NULL	
Name	varchar(32)	NO		NULL	
SeatingCapacity	int	NO		NULL	

Screening Table

Field	Type	Null	Key	Default	Extra
Screening_ID	int	NO	PRI	NULL	
Movie_ID	int	NO		NULL	
Auditorium_ID	int	NO		NULL	
Screening Start	timestamp	YES	ji i i	NULL	ĵi l

Seat Table

Field	Type	Null	Key	Default	Extra
Seat_ID	int	NO	PRI	NULL	
Row_No	int	NO		NULL	1
Seat_No	int	NO	l i	NULL	
Auditorium ID	int	NO		NULL	

Seat Reserved Table

Field	Type	Null	Key	Default	Extra
Seat_ID	int	NO		NULL	
Reservation ID	int	NO	ĺ	NULL	Ì

Assigning Foreign Key

```
mysal> Alter table Reservation
              add constraint reservation employee Employee ID fk
                      foreign key (Employee ID) references employee (Employee ID);
Query OK, 27 rows affected (0.09 sec)
Records: 27 Duplicates: 0 Warnings: 0
mysql>
mysal> Alter table Reservation
              add constraint reservation movie Movie ID fk
                      foreign key (Movie ID) references movie (Movie ID);
Query OK, 27 rows affected (0.07 sec)
Records: 27 Duplicates: 0 Warnings: 0
mysql>
mysal> Alter table Reservation
              add constraint reservation screening Screening ID fk
                      foreign key (Screening ID) references screening (Screening ID);
Ouery OK, 27 rows affected (0.07 sec)
Records: 27 Duplicates: 0 Warnings: 0
mysal>
mysql> Alter table seat reserved
   -> add constraint seat reserved reservation Reservation ID fk
   -> foreign key (Reservation ID) references reservation (Reservation ID);
Query OK, 18 rows affected (0.06 sec)
Records: 18 Duplicates: 0 Warnings: 0
mysql>
mysql> Alter table seat reserved
   -> add constraint seat reserved seat Seat ID fk
   -> foreign key (Seat ID) references seat (Seat ID);
Query OK, 18 rows affected (0.07 sec)
Records: 18 Duplicates: 0 Warnings: 0
mysal>
mysql> Alter table seat
   -> add constraint seat auditorium Auditorium ID fk
   -> foreign key (Auditorium ID) references auditorium (Auditorium ID);
Query OK, 27 rows affected (0.06 sec)
Records: 27 Duplicates: 0 Warnings: 0
```

```
mysql> Alter table screening
   -> add constraint screening auditorium Auditorium ID fk
   -> foreign key (Auditorium ID) references auditorium (Auditorium ID);
Query OK, 3 rows affected (0.07 sec)
Records: 3 Duplicates: 0 Warnings: 0
mysql>
mysal> Alter table screening
   -> add constraint screening movie Movie ID fk
   -> foreign key (Movie ID) references movie (Movie ID);
Ouery OK, 3 rows affected (0.07 sec)
Records: 3 Duplicates: 0 Warnings: 0
mysal>
mysal> Alter table Customer
              add constraint customer reservation Transaction ID fk
                      foreign key (Transaction ID) references reservation (Transaction ID);
Query OK, 27 rows affected (0.06 sec)
Records: 27 Duplicates: 0 Warnings: 0
```

Queries

Display all details from Reservation Table with Platinum Reservation Type.

Reservation_ID	Employee_ID	Reservation	Reserved	Transaction_ID	Movie_ID	Auditorium_ID	Screening_ID
107	2510	Platinum	1	45670	1	1	139
108	2510	Platinum	1	12987	1	1	139
109	2510	Platinum	0	72839	1	1	139
207	1205	Platinum	1	24378	5	2	239
208	1205	Platinum	1	63478	5	2	239
209	1205	Platinum	0	56788	5	2	239
307	2901	Platinum	1	39847	8	3	339
308	2901	Platinum	1	23748	8	3	339
309	2901	Platinum	0	39800	8	3	339

Display Transaction_ID with False Reservation Status.

Change Employee_ID size to 8 and change column Duration_Min column to Duration In Hours.

```
mysql> Alter table Reservation modify Employee_ID int(8) not null;
Query OK, 0 rows affected, 1 warning (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 1

mysql>
mysql> Alter table Movie rename column Duration_Min to Duration_In_Hours;
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

Display Transaction_ID which contains 67 in it.

Display Reservation Status with starting Transaction_ID as 87.

```
mysql> Select Reserved from Reservation where Transaction_ID like '87___';

+------
| Reserved |

+------
| 0 |

+------
```

Display distinct Employe_ID.

```
mysql> Select distinct Employee_Id from Reservation;
+-----
| Employee_Id |
+-----
| 2510 |
| 1205 |
| 2901 |
+-----
```

Display Reservation_ID, Employee_ID and Transaction_ID with True Reservation Status and Transaction_ID greater than 80000.

Display Movie Titles with PG-13 Censor_Certificate or Duration less than 2 hours.

Display Movie Titles Alphabeticlly.

ovie_ID	Title	Director	Cast	Censor_Certificate	Duration_In_Hours
9	500 Days of Summer	Marc Webb	Joseph Gordan-Leviit, Zooey Deschanel, Matthew Fray Gubler, Chole Grace Moretz, Clark Gregg	PG-13	01:45:00
5	Dead Poet Society	Peter Weir	Robin Williams, Ethan Hawke, Robert Sean Leonard, Josh Charles, Gale Hansen	PG	02:08:00
3	Good Will Hunting	Gus Van Sant	Matt Damon, Ben Affleck, Robin Williams, Casey Affleck, Minnie Driver	R	02:08:00
1	Jurassic Park	Steven Spielberg	Jeff Goldblum, Sam Neill, Laura Dern, Samuel L. Jackson, Richard Attenborough	PG-13	02:08:00
4	Knives Out	Rian Johnson	Ana de Armas, Chris Evans, Daniel Craig, Joseph Gordan-Levitt, Katherine Langford	PG-13	02:10:00
8	Star Wars - A New Hope	George Lucas	Carrie Fisher, James Earl Jones, Alec Guinness, Harrison Ford, Mark Hamil	PG	02:01:00
10	The Dark Knight	Christopher Nolan	Christian Bale, Gary Oldman, Heath Ledger, Micheal Cane, Morgan Freeman, Cillian Murphy	PG-13	02:32:00
6	The Godfather	Francis Ford Coppola	Al Pacino, Marlon Brando, James Caan, Diane Keaton, Talia Shire, John Cazale	R	02:55:00
7	The Lord of Rings	Peter Jackson	Elijah Wood, Iam McKellen, Orlando Bloom, Viggo Mortensen, Sean Astin, Sean Bean	PG-13	02:58:00
2	The Shining	Stanley Kubric	Jack Nicholson, Shelly Duvall, Danny Lloyd, Scatman Crothers, Joe Trukel	R	02:26:00

Display Censor_Certificate of Movie with Movie_ID 1,3,5.

Display Row_No and Seat_No with Seat_ID between 213 and 231.

```
mysql> Select Row_No,Seat_No from Seat where Seat_ID between 213 And 231;

+----+

| Row_No | Seat_No |

+----+

| 1 | 3 |

| 2 | 1 |

| 2 | 2 |

| 3 | 1 |

+----+
```

Display total reserved seats.

Count how many times each Employee has done reseravtions.

Display greatest and smallest Screening_ID.

Display Employee's Usernames in captital letters.

```
mysql> Select upper(Username) from Employee;

| upper(Username) |

+-----+
| RAJEEV_SHARMA |
| SURESH_GUPTA |
| ANIL_ROY |

+-----+
```

Display Movie Titles with 'A' in it.

Display Transaction_Id and a failure message when reservation is failed.

```
mysql> Select Transaction_ID , rpad(Reserved ,20,' Reservation Failed') as Reservation_Status from Reservation where Reserved=False;

| Transaction_ID | Reservation_Status |
| 87765 | 0 Reservation Failed |
| 39849 | 0 Reservation Failed |
| 72839 | 0 Reservation Failed |
| 56328 | 0 Reservation Failed |
| 52938 | 0 Reservation Failed |
| 52938 | 0 Reservation Failed |
| 20394 | 0 Reservation Failed |
| 23489 | 0 Reservation Failed |
| 39800 | 0 Reservation Failed |
```

Display login details of Employees.

Display Movie Title which is being presented in Auditorium_Second.

Display Username of Employee who is looking after Reservation of Jurassic Park.

Display Name of the Auditorium where Screening of Movie starts on 2020-11-26 at 14:00:00.

Display Customer_Name who has booked for Silver and Gold Reservation.

```
mysql> Select Customer_Name from Customer where Transaction_ID in(Select Transaction_ID from Reservation where Reservation in ('Silver','Gold'));
  Customer_Name
 Jiya
 Sahaj
  Anusha
  Bhavleen
  Naveen
  Aryan
  Shaurya
  Jahnavi
  Nishant
  Aanchal
  Richa
  Jatin
  Rajiv
  Sumit
  Geeta
  Shivani
  Sameer
  Reena
```

Display name and contact no. of people in auditorium first.

```
mysql> Select c.Customer_Name, c.Customer_Contact from reservation r join auditorium a on r.Auditorium_ID = a.Auditorium_ID
   -> join customer c on r.Transaction_ID = c.Transaction_ID where a.Name = 'Auditorium_First';
 Customer Name | Customer Contact
 Jiya
                       9559834463
 Sahaj
                       6519160263
 Anusha
                       8413049646
                       7358958044
 Bhavleen
 Naveen
                       8506972994
 Aryan
                       9922528204
 Surbhi
                       8131189118
                       8844549128
 Manya
                       6286916457
```

Display movie title which stars Robin Williams and start after 4 pm.

Display Employee's Username who booked for Star Wars - A New Hope

Display Seat_ID in Auditorium_Second.

```
mysql> Select distinct s.Seat ID from seat s join auditorium a on s.Auditorium ID = a.Auditorium ID
   -> where a.Name = 'Auditorium Second';
 Seat_ID
     211
     212
     213
     221
     222
     223
     231
     232
     233
     311
     312
     313
     321
     322
     323
     331
     332
     333
```

Create reservation and seat reserved view.

- mysql> Create view reservation_seat as select distinct reservation.*, seat_reserved.Seat_ID
- -> from reservation join seat_reserved on reservation.Reservation_ID = seat_reserved.Reservation_ID; Query OK, 0 rows affected (0.06 sec)

Display view Reservation_Seat.

eservation_ID	Employee_ID	Reservation	Reserved	Transaction_ID	Movie_ID	Auditorium_ID	Screening_ID	Seat_I
101	2510	Silver	1	54678	1	1	139	11
102	2510	Silver	1	76543	1	1	139	11
104	2510	Gold	1	49869	1	1	139	12
105	2510	Gold	1	45698	1	1	139	12
107	2510	Platinum	1	45670	1	1	139	13
108	2510	Platinum	1	12987	1	1	139	13
201	1205	Silver	1	83259	5	2	239	21
202	1205	Silver	1	76899	5	2	239	21
204	1205	Gold	1	50982	5	2	239	22
205	1205	Gold	1	57458	5	2	239	22
207	1205	Platinum	1	24378	5	2	239	2.
208	1205	Platinum	1	63478	5	2	239	2
301	2901	Silver	1	34780	8	3	339	31
302	2901	Silver	1	12378	8	3	339	31
304	2901	Gold	1	12347	8	3	339	32
305	2901	Gold	1	34798	8	3	339	32
307	2901	Platinum	1	39847	8	3	339	33
308	2901	Platinum	1	23748	8	3	339	33

Create index movie_title_index on movie(Title).

```
mysql> Create index movie_title_index on movie(Title);
Query OK, 0 rows affected (0.07 sec)
Records: 0 Duplicates: 0 Warnings: 0
```

Display Index

mysql> Show indexes from Movie;														
Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment	Visible	Expression
movie	0	PRIMARY	1	 Movie_ID	A	10	NULL	NULL		BTREE			YES	NULL
movie	1	movie_title_index	1	Title	A	10	NULL	NULL		BTREE	l	1	YES	NULL

Thank You!!!