

DBMS PROJECT

Movie Theatre Management

Box Office Management

1) Project Title

Movie Theatre Management

A Box Office Management System

2) Team Members with their ID's and Email id

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3) Project Description

Movies can have tremendous influence in shaping young lives towards ideals and objectives of normal adult life; we took our project for developing a box office management of a theatre.

Our project helps to inquire for movies, details about the movie, and timing of movies and also help book tickets.

The user can look for movies going on in the theatre, see how many seats are available in a particular show, what is the price of a movie ticket in different categories, what time is a movie playing etc.

This project is only for a single movie theatre and it can be modified to different theatre accordingly to its screens and seats.

4) Entity Relation Model

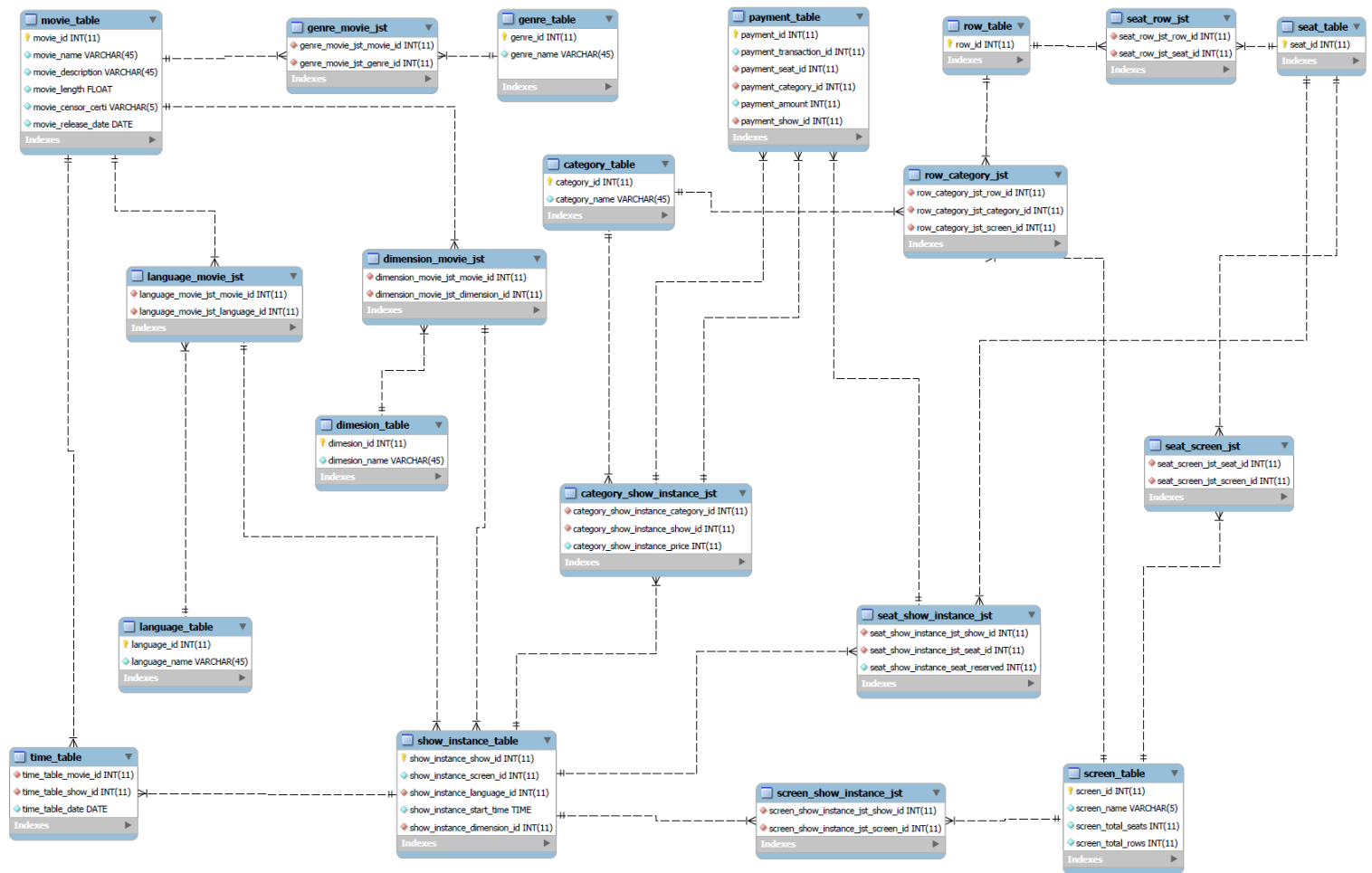


Fig 1: ER Diagram

**5) Relational Database Schema including tables, attributes of each table,
Primary key, secondary keys, foreign keys, constraints etc.**

1) Entity 1: movie_table

Attributes	Datatype	Constraints
movie_id	INT(11)	Primary Key
movie_name	Varchar(45)	Not Null
movie_description	Varchar(45)	Not Null
movie_length	FLOAT	Not Null
movie_censor_certi	Varchar(5)	Not Null
movie_release_date	DATE	Not Null

2) Entity 2: language_movie

Attributes	Datatype	Constraints
language_id	INT(11)	Primary Key
language_name	VARCHAR(45)	Not Null

3) Entity 3: language_movie_jst

Attributes	Datatype	Constraints
language_movie_jst_movie_id	INT(11)	Foreign Key
language_movie_jst_language_name	VARCHAR(45)	Not Null

4) Entity 4: genre_table

Attributes	Datatype	Constraints
genre_id	INT(11)	Primary Key
genre_name	VARCHAR(45)	Not Null

5) Entity 5: genre_movie_jst

Attributes	Datatype	Constraints
genre_movie_jst_movie_id	INT(11)	Foreign Key
genre_movie_jst_genre_id	INT(11)	Not Null

6) Entity 6: dimension_table

Attributes	Data type	Constraints
dimension_id	INT(11)	Primary key
dimension_name	VARCHAR(45)	not null

7) Entity 7: time_table

Attributes	Data type	Constraints
time_table_movie_id	INT(11)	Foreign key
time_table_show_id	INT(11)	Foreign key
time_table_date	DATE	not null

8) Entity 8: show_instance_table

Attributes	Data type	Constraints
show_instance_show_id	INT(11)	Primary key
show_instance_screen_id	INT(11)	not null
show_instance_language_id	INT(11)	Foreign key
show_instance_start_time	TIME	not null
show_instance_dimension_id	INT(11)	Foreign key

9) Entity 9: dimension_movie_jst

Attributes	Data type	Constraints
dimension_movie_jst_movie_id	INT(11)	Foreign key
dimension_movie_jst_dimension_id	INT(11)	Foreign key

10) Entity 10: category_table

Attributes	Data type	Constraints
category_id	INT(11)	Primary key
category_name	VARCHAR(45)	not null

11) Entity 11: category_show_instance_jst

Attributes	Data type	Constraints
category_show_instance_category_id	INT(11)	Foreign key
category_show_instance_show_id	INT(11)	Foreign key
category_show_instance_price	INT(11)	not null

12) Entity 12: payment_table

Attributes	Data type	Constraints
payment_id	INT(11)	Primary key
payment_transaction_id	INT(11)	not null
payment_seat_id	INT(11)	Foreign key
payment_category_id	INT(11)	Foreign key
payment_amount	INT(11)	not null
payment_show_id	INT(11)	Foreign key

13) Entity 13: row_table

Attributes	Data type	Constraints
row_id	INT(11)	Primary_key

14) Entity 14: screen_show_instance_jst

Attributes	Data type	Constraints
screen_show_instance_jst_show_id	INT(11)	Foreign key
screen_show_instance_jst_screen_id	INT(11)	Foreign key

15) Entity 15: seat_show_instance_jst

Attributes	Data type	Constraints
seat_show_instance_jst_show_id	INT(11)	Foreign key
seat_show_instance_jst_seat_id	INT(11)	Foreign key
seat_show_instance_seat_reserved	INT(11)	not null

16) Entity 16: row_category_jst

Attributes	Data type	Constraints
row_category_jst_row_id	INT(11)	Foreign key
row_category_jst_category_id	INT(11)	Foreign key
row_category_jst_screen_id	INT(11)	Foreign key

17) Entity 17: seat_row_jst

Attributes	Data type	Constraints
seat_row_jst_row_id	INT(11)	Foreign key
seat_row_jst_seat_id	INT(11)	Foreign key

18) Entity 18: seat_table

Attributes	Data type	Constraints
seat_id	INT(11)	Primary key

19) Entity 19: screen_table

Attributes	Data type	Constraints
screen_id	INT(11)	Primary key
screen_name	VARCHAR(45)	not null
screen_total_seats	INT(11)	not null
screen_total_rows	INT(11)	not null

20) Entity 18: seat_screen_jst

Attributes	Data type	Constraints
seat_screen_jst_seat_id	INT(11)	Foreign Key
seat_screen_jst_screen_id	INT(11)	Foreign key

5) List of Queries

- Which movies are playing on a particular date?
SELECT movie_name FROM movie_table WHERE movie_id in (SELECT time_table_movie_id FROM time_table WHERE time_table_date = '2017-04- 20');

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie name			
Begum Jaan			
Fast and Furious 8			
Naam Shabana			
Wrong Side Raju			
Sakhavu			

- What is the description of a particular movie?
SELECT movie_description FROM movie_table WHERE movie_name = 'Sakhavu';

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie description			
A Malayalam Movie about a Politician			

- What is the length of a particular movie?

SELECT movie_length FROM movie_table WHERE movie_name = 'Fast and Furious 8';

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie length			
▶ 137			

- What is the Censor Certification of a particular movie?

SELECT movie_censor_certi FROM movie_table WHERE movie_name = 'Wrong Side Raju';

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie censor certi			
▶ U/A			

- What is the Release Date of a particular movie?

SELECT movie_release_date FROM movie_table WHERE movie_name = 'Naam Shabana';

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie release date			
▶ 2017-03-31			

- What are the 3D/2D movies playing in the theatre?

SELECT movie_name FROM movie_table WHERE movie_id in (SELECT dimension_movie_jst_movie_id FROM dimension_movie_jst WHERE dimension_movie_jst_dimension_id in(SELECT dimension_id FROM dimension_table WHERE dimension_name = '2D'));

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie name			
▶ Fast and Furious 8			

SELECT movie_name FROM movie_table WHERE movie_id in (SELECT dimension_movie_jst_movie_id FROM dimension_movie_jst WHERE dimension_movie_jst_dimension_id in(SELECT dimension_id FROM dimension_table WHERE dimension_name = '3D'));

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie_name			
Fast and Furious 8			
Begum Jaan			
Sakhavu			
Wrong Side Raju			
Naam Shabana			

- What are the movies playing of a particular language?
SELECT movie_name FROM movie_table WHERE movie_id in (SELECT
language_movie_jst_movie_id FROM language_movie_jst WHERE
language_movie_jst_language_id
in(SELECT language_id FROM language_table WHERE language_name = 'Hindi'));

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie_name			
Fast and Furious 8			

SELECT movie_name FROM movie_table WHERE movie_id in (SELECT
language_movie_jst_movie_id FROM language_movie_jst WHERE
language_movie_jst_language_id
in(SELECT language_id FROM language_table WHERE language_name = 'English'));

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie_name			
Fast and Furious 8			
Begum Jaan			
Sakhavu			
Naam Shabana			

- What are the movies currently playing of a particular genre?
SELECT movie_name FROM movie_table WHERE movie_id in (SELECT
genre_movie_jst_movie_id FROM genre_movie_jst WHERE
genre_movie_jst_genre_id
in(SELECT genre_id FROM genre_table WHERE genre_name = 'Thriller'));

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie_name			
Fast and Furious 8			
Wrong Side Raju			
Naam Shabana			

- What are the movies releasing soon?

```
SELECT movie_name FROM movie_table WHERE movie_release_date > '2017-04-20';
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie name			
Baahubali 2			
Guardians of the Galaxy vol2			

- Is a particular movie available in 3D/2D?

```
SELECT movie_table.movie_name
,dimension_movie_jst.dimension_movie_jst_movie_id
,dimension_table.dimension_name FROM ((dimension_movie_jst
INNER JOIN movie_table ON movie_table.movie_id =
dimension_movie_jst.dimension_movie_jst_movie_id)
INNER JOIN dimension_table ON dimension_table.dimension_id =
dimension_movie_jst.dimension_movie_jst_dimension_id
AND movie_table.movie_name = 'Baahubali 2';
AND dimension_table.dimension_name = '3D');
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
movie name	dimension movie jst movie id	dimension name	

- Is a particular seat of a particular show available?

```
SELECT seat_show_instance_seat_reserved FROM seat_show_instance_jst WHERE
seat_show_instance_jst_seat_id in (SELECT seat_row_jst_seat_id FROM
seat_row_jst WHERE seat_row_jst_seat_name = 'A8' and
seat_show_instance_jst_show_id = '2' ;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
seat show instance seat reserved			
0			

- What is the dimension of the movie of a show with the show_id=x?
SELECT dimension_name FROM dimension_table WHERE dimension_id in (SELECT
show_instance_dimension_id FROM show_instance_table WHERE
show_instance_show_id = '1');

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
dimension name			
2D			

- What is the start time of the movie of a show with the show_id=x?
SELECT show_instance_start_time FROM show_instance_table WHERE
show_instance_show_id = '2';

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
screen name			
1			

- What is the screen number of the movie of a show with the show_id=x?
SELECT screen_name FROM screen_table WHERE screen_id in (SELECT
show_instance_screen_id FROM show_instance_table WHERE
show_instance_show_id = '1');

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
language name			
Hindi			

- What is the language of the movie of a show with the show_id=x?
SELECT language_name FROM language_table WHERE language_id in (SELECT
show_instance_language_id FROM show_instance_table WHERE
show_instance_show_id = '1');

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
screen name			
1			

- What is the price of movie ticket at a particular time?
SELECT category_table.category_name,
category_show_instance_jst.category_show_instance_price,
category_show_instance_jst.category_show_instance_show_id

```
FROM category_show_instance_jst
INNER JOIN category_table ON
category_show_instance_jst.category_show_instance_show_id = '1'AND
category_show_instance_jst.category_show_instance_category_id =
category_table.category_id;
```

category name	category show instance price	category show instance show id
GOLD	80	1
SILVER	110	1
BRONZE	130	1

- Which movies are starting at a particular time?
SELECT show_instance_table.show_instance_show_id ,
category_table.category_name ,
category_show_instance_jst.category_show_instance_price
FROM ((category_show_instance_jst
INNER JOIN category_table ON
category_show_instance_jst.category_show_instance_category_id =
category_table.category_id)
INNER JOIN show_instance_table ON show_instance_table.show_instance_show_id
= category_show_instance_jst.category_show_instance_show_id
AND show_instance_table.show_instance_start_time = '09:00:00');

movie name
Begum Jaan
Naam Shabana

- What is the price of GOLD(or any category) category of a show?
SELECT category_table.category_name,
category_show_instance_jst.category_show_instance_price,
category_show_instance_jst.category_show_instance_show_id
FROM category_show_instance_jst
INNER JOIN category_table ON
category_show_instance_jst.category_show_instance_show_id = '1'
AND category_show_instance_jst.category_show_instance_category_id =
category_table.category_id
AND category_table.category_name = 'GOLD';

Result Grid Filter Rows: Export: Wrap Cell Content:									
	category name	category show instance price	category show instance show id						
▶	GOLD	80	1						

- How many seats a particular screen has?
SELECT screen_total_seats FROM screen_table WHERE screen_id = '2';

Result Grid Filter Rows: Export: Wrap Cell Content:									
	screen total seats								
▶	100								

- How many rows a particular screen has?
SELECT screen_total_rows FROM screen_table WHERE screen_id = '1';

Result Grid Filter Rows: Export: Wrap Cell Content:									
	screen total rows								
▶	10								

- What is the price of movie ticket of a given show id?
SELECT category_table.category_name,
category_show_instance_jst.category_show_instance_price,
category_show_instance_jst.category_show_instance_show_id
FROM category_show_instance_jst
INNER JOIN category_table ON
category_show_instance_jst.category_show_instance_show_id = '1' AND
category_show_instance_jst.category_show_instance_category_id =
category_table.category_id;

Result Grid Filter Rows: Export: Wrap Cell Content:									
	category name	category show instance price	category show instance show id						
▶	GOLD	120	1						
	SILVER	100	1						
	BRONZE	80	1						

- What is the price of movie ticket of all the shows in a day?

```
SELECT category_table.category_name,
category_show_instance_jst.category_show_instance_price,
category_show_instance_jst.category_show_instance_show_id
FROM category_show_instance_jst
INNER JOIN category_table ON
category_show_instance_jst.category_show_instance_category_id =
category_table.category_id;
```

category name	category show instance price	category show instance show id
GOLD	120	1
SILVER	100	1
BRONZE	80	1

- In a screen, which rows are of which category?

```
SELECT category_table.category_name, row_category_jst.row_category_jst_row_id
FROM row_category_jst
INNER JOIN category_table ON row_category_jst.row_category_jst_screen_id = '1'
AND row_category_jst.row_category_jst_category_id = category_table.category_id;
```

category name	row category jst row id
GOLD	8
GOLD	9
GOLD	10
SILVER	4
SILVER	5
SILVER	6
SILVER	7
BRONZE	1
BRONZE	2
BRONZE	3

- Which row has which seats?

```
SELECT seat_row_jst_seat_name FROM seat_row_jst WHERE seat_row_jst_row_id = '3';
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
seat_row_jst	seat_name			
C1				
C2				
C3				
C4				
C5				
C6				
C7				
C8				
C9				
C10				

- In a screen, which rows are of which category?

```
SELECT category_table.category_name, row_category_jst.row_category_jst_row_id
FROM row_category_jst
INNER JOIN category_table ON row_category_jst.row_category_jst_screen_id = '1'
AND row_category_jst.row_category_jst_category_id = category_table.category_id
AND category_table.category_name = 'GOLD';
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
category_name	row_category_jst_row_id			
GOLD	8			
GOLD	9			
GOLD	10			

6) Normalised form of tables

All the tables in our database schema are in 4th normal form.

7) Stored Procedures

➔ To insert time table

```
DELIMITER $$
```

```
CREATE PROCEDURE complete_time_table(IN show_id INT(11), screen_id INT(11),
language_id INT(11), start_time TIME, dimension_id INT(11), movie_id INT(11), date_insert
DATE)
```

```
BEGIN
```

```
INSERT INTO show_instance_table VALUES (show_id , screen_id , language_id , start_time ,
dimension_id , movie_id);
```

```
INSERT INTO time_table VALUES (movie_id, show_id, date_insert, start_time);
```

```

END $$
DELIMITER ;
call complete_time_table (19,1,1,'09:00:00',1,2,'2017-04-21');

```

➔ To insert payment details of 1 seat booking

```

DELIMITER $$
CREATE PROCEDURE payment (IN payment_id INT(11), transaction_id INT(11), seat_id
INT(11),show_id INT(11))
BEGIN
DECLARE total_amount INT(11);
SELECT category_show_instance_price INTO total_amount FROM
category_show_instance_jst WHERE category_show_instance_category_id IN (SELECT
row_category_jst_row_id FROM row_category_jst WHERE row_category_jst_row_id IN
(SELECT seat_row_jst_row_id FROM seat_row_jst WHERE seat_row_jst_seat_id = seat_id))
AND category_show_instance_jst.category_show_instance_show_id = show_id;
INSERT INTO payment_table VALUES (payment_id,transaction_id, seat_id, 100, show_id);
UPDATE `theatre`.`seat_show_instance_jst` SET `seat_show_instance_seat_reserved`='1'
WHERE `seat_show_instance_jst_show_id`= show_id AND
`seat_show_instance_jst_seat_id` = seat_id;
END $$
DELIMITER ;
call payment(2,1002,2,1);

```

➔ To insert movie details

```

delimiter //
create procedure insert_genre_movie_jst(in movie_id int(11) , in genre_name varchar(45))
begin
declare genre_id_var int(11);

select genre_id into genre_id_var from genre_table where genre_table.genre_name =
genre_name;
insert into genre_movie_jst (genre_movie_jst_movie_id , genre_movie_jst_genre_id)
values (movie_id , genre_id_var);
end //
delimiter //
create procedure insert_language_1(in movie_id int(11) , in language_name_1 varchar(45))
begin
declare language_id_var int(11);

select language_id into language_id_var from language_table where
language_table.language_name = language_name_1;
insert into language_movie_jst values (movie_id , language_id_var);

end //

```



```

delimiter //
create procedure insert_language_2(in movie_id int(11) , in language_name_1 varchar(45) ,
in language_2 varchar(45))
begin
    declare language_id_var int(11);

    select language_id into language_id_var from language_table where
language_table.language_name = language_name_1;
    insert into language_movie_jst (language_movie_jst_movie_id ,
language_movie_jst_language_id) values (movie_id , language_id_var);

    select language_id into language_id_var from language_table where
language_table.language_name = language_name_2;
    insert into language_movie_jst (language_movie_jst_movie_id ,
language_movie_jst_language_id) values (movie_id , language_id_var);

end //
delimiter //
create procedure insert_language_3(in movie_id int(11) , in language_name_1 varchar(45) ,
in language_name_2 varchar(45) , in language_3 varchar(45))
begin
    declare language_id_var int(11);

    select language_id into language_id_var from language_table where
language_table.language_name = language_name_1;
    insert into language_movie_jst (language_movie_jst_movie_id ,
language_movie_jst_language_id) values (movie_id , language_id_var);

    select language_id into language_id_var from language_table where
language_table.language_name = language_name_2;
    insert into language_movie_jst (language_movie_jst_movie_id ,
language_movie_jst_language_id) values (movie_id , language_id_var);

    select language_id into language_id_var from language_table where
language_table.language_name = language_name_3;
    insert into language_movie_jst (language_movie_jst_movie_id ,
language_movie_jst_language_id) values (movie_id , language_id_var);
end //
delimiter //
create procedure insert_dimension_1(in movie_id int(11) , in dimension_name_1
varchar(45))
begin
    declare dimension_id_var int(11);

```

```

    select dimension_id into dimension_id_var from dimension_table where
dimension_table.dimension_name = dimension_name_1;
    insert into dimension_movie_jst (dimension_movie_jst_movie_id ,
dimension_movie_jst_dimension_id) values (movie_id , dimension_id_var);
end //
delimiter //
create procedure insert_dimension_2(in movie_id int(11) , in dimension_name_1
varchar(45) , in dimension_name_2 varchar(45))
begin
    declare dimension_id_var int(11);

    select dimension_id into dimension_id_var from dimension_table where
dimension_table.dimension_name = dimension_name_1;
    insert into dimension_movie_jst (dimension_movie_jst_movie_id ,
dimension_movie_jst_dimension_id) values (movie_id , dimension_id_var);
    select dimension_id into dimension_id_var from dimension_table where
dimension_table.dimension_name = dimension_name_2;
    insert into dimension_movie_jst (dimension_movie_jst_movie_id ,
dimension_movie_jst_dimension_id) values (movie_id , dimension_id_var);

end //

delimiter //
create procedure insert_movies(in movie_name varchar(45) , in movie_description
varchar(45) , in movie_length float , in movie_censor_certi varchar(45) , in
movie_release_date date , in language_sequence varchar(10) , in dimension_sequence
char(2) , in genre_name varchar(45))
begin
    declare movie_id_var int(11);

    insert into movie_table (movie_name , movie_description , movie_length ,
movie_censor_certi , movie_release_date) values (movie_name , movie_description ,
movie_length , movie_censor_certi , movie_release_date);

    select movie_id into movie_id_var from movie_table where movie_table.movie_name =
movie_name;

    call insert_genre_movie_jst(movie_id_var , genre_name);

case
when (language_sequence = '001')
then call insert_language_1(movie_id_var , 'Tamil');

when (language_sequence = '010')

```

```

then call insert_language_1(movie_id_var , 'English');

when (language_sequence = '011')
then call insert_language_2(movie_id_var , 'English' , 'Tamil');
when (language_sequence = '100')
then call insert_language_1(movie_id_var , 'Hindi');

when (language_sequence = '101')
then call insert_language_2(movie_id_var , 'Hindi' , 'Tamil');
when (language_sequence = '110')
then call insert_language_2(movie_id_var , 'Hindi' , 'English');

when (language_sequence = '111')
then call insert_language_3(movie_id_var , 'Hindi' , 'English' , 'Tamil');
end case;

case
when (dimension_sequence = '11')
then call insert_dimension_2(movie_id_var , '2D' , '3D');

when (dimension_sequence = '10')
then call insert_dimension_1(movie_id_var , '2D');
end case;
end //
delimiter ;

```

➔ To insert price details of different shows

```

DELIMITER $$
CREATE PROCEDURE set_price (IN show_id INT(11), gold_price INT(11), silver_price INT(11),
bronze_price INT(11))
BEGIN
INSERT INTO category_show_instance_jst VALUES (1, show_id, gold_price);
INSERT INTO category_show_instance_jst VALUES (2, show_id, silver_price);
INSERT INTO category_show_instance_jst VALUES (3, show_id, bronze_price);

END $$
DELIMITER ;

```