

# INFO 6210

## Data Management and Database Design [Section 3]

### Normalization and Optimization

#### Assignment 3



#### Authors

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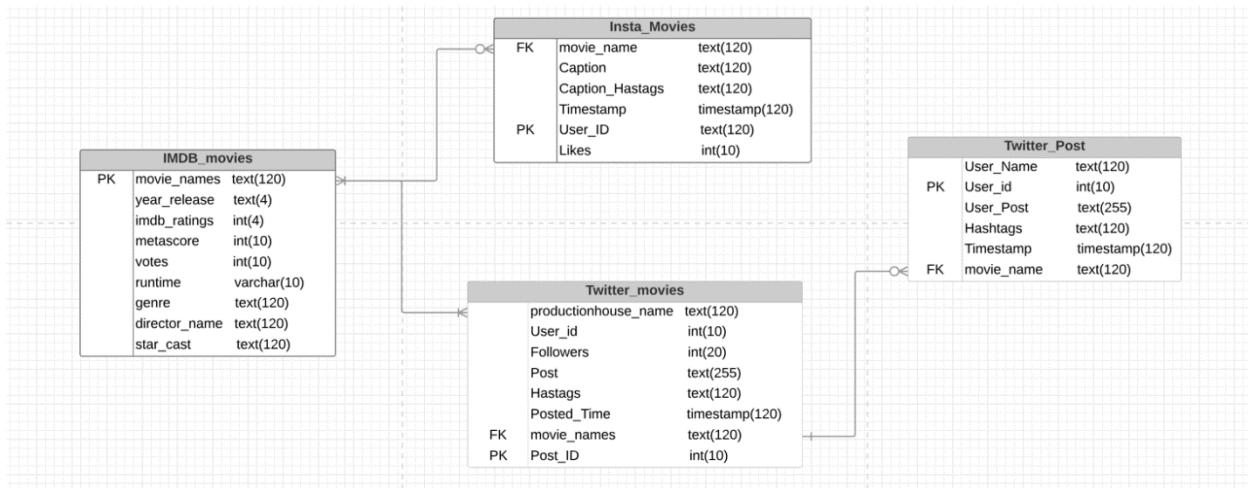
# Introduction

The assignment mainly contains 2 parts. Firstly is perform database normalization. Normalization is performed with its 1NF, 2NF and 3NF.

Second is to create Views on the use cases; creating indexes to improve the performance of queries, creating functions and stored procedures.

## Part-1 Normalization

- The below image was the conceptual schema from the second Assignment



First table to normalize is IMDB\_movies:

1NF:

Table:IMDB\_movies

Firstly, we created a Main table which contains the movie\_id and movie\_names.

Movie\_id is the primary key in this table.

Next, in the imdb\_movies table, genre and star\_cast columns were atomic and hence we have broken them down into separate entities.

We have also created a new table which stores the imdb\_ratings, votes, runtime and metascores into a separate table and it is linked with the main table via the movie\_id.

We have also created different tables which stores the director name and the star cast into different entities.

Finally, after breaking down into 1NF for the first table, we have got the following Normalized tables in 1NF:

movies

movie_id(PK)
movie_names

m\_ratings

movie_id(PK)
year_release
Imdb_ratings
metscores
votes
runtime

actor

actor_id(PK)
star_cast

m\_actor

movie_id
actor_id(PK)

director

director_id(PK)
director_name

m\_director

movie_id
director_id(PK)

genre

genre_id(PK)
genre

m\_genre

movie_id
genre_id(PK)

Table:Insta\_Movies

In this table, Caption\_Hashtags were violating the rule of 1NF as they were atomic and hence, we have split them and put it into a new table altogether.

Also, the Timestamp was having atomic values and hence we have split them as well.

After 1NF:

Insta\_post

movie_id(PK)
User_ID

User\_insta

User_ID(PK)
Caption
Likes
Date
Time

### Caption\_Hashtags

hashtag_id(PK)
Caption_Hashtags

### Insta\_hashtags

movie_id
hashtag_id(PK)

### Table: Twitter\_Movies

In this table, movie\_id has been added as a foreign key constraint and the timestamp has been split as they were atomic.

### actor

actor_id(PK)
star_cast

### m\_actor

movie_id
actor_id(PK)

### Table:Twitter\_Post

In this table, movie\_id has been added as a foreign key constraint and the timestamp has been split as they were atomic.

After 1NF we have,

### Tweet\_movies

movie_id
User_ID(PK)

## User\_twitter

User_Id(PK)
User_Name
User_Post
Date
Time

2NF:

All requirements of the first normal form are met, there is no calculated data in any of the tables and there is no partial dependencies.

Each and every table is connected via the movie\_id from the main table.

Hence, 2NF is satisfied.

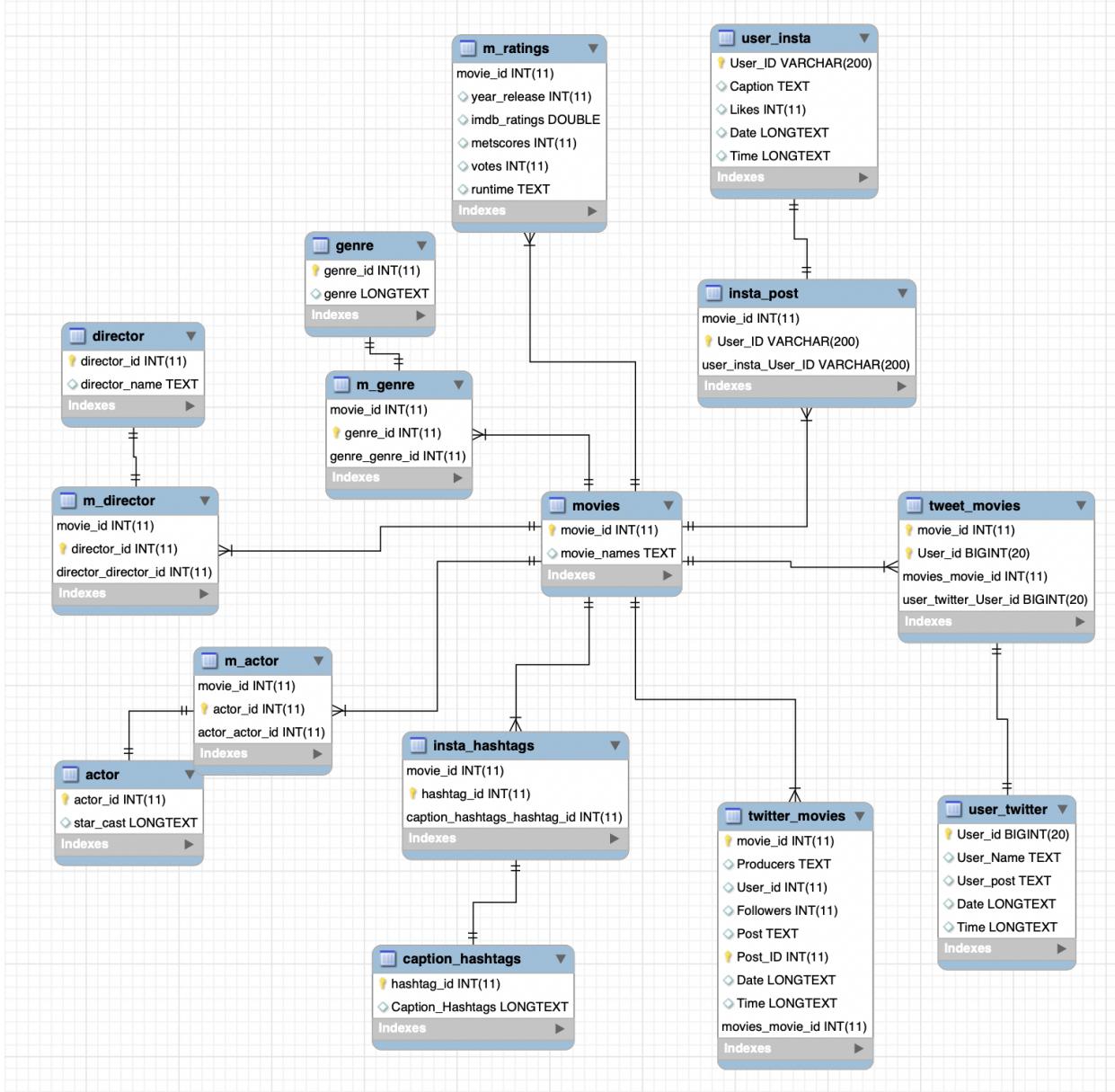
3NF:

All requirements of 2NF are met.

We have eliminated all fields that do not directly depend on the primary key; that is no transitive

dependencies.

After 1NF,2NF and 3NF, the final Conceptual Schema is given below:



## Views

USE CASE 1:

Find the movies who's IMDB movie rating is greater than 7.5

```
CREATE VIEW `usecase_1` AS
SELECT movies.movie_id,movies.movie_names,m_ratings.imdb_ratings,
m_ratings.year_release
FROM (m_ratings
INNER JOIN movies ON m_ratings.movie_id=movies.movie_id)
where imdb_ratings > 7.5;
```

movie_id	movie_names	imdb_ratings	year_release
1	Bohemian Rhapsody	8.1	2018
2	Green Book	8.3	2018
3	Alita: Battle Angel	7.6	2019
4	A Star Is Born	7.8	2018
5	Spider-Man: Into the Spider-Verse	8.6	2018
6	The Favourite	7.7	2018
7	How to Train Your Dragon: The Hidden World	7.9	2019
8	Fighting with My Family	7.6	2019
11	Avengers: Infinity War	8.5	2018
12	Roma	7.8	2018
14	The Boy Who Harnessed the Wind	7.6	2019
16	Deadpool 2	7.8	2018
21	Gully Boy	8.5	2019
23	Incredibles 2	7.7	2018
25	A Quiet Place	7.6	2018
27	Capharnaüm	8.4	2018
28	Cold War	7.7	2018
29	Mission: Impossible - Fallout	7.8	2018
33	Shoplifters	8.1	2018
34	Upgrade	7.6	2018
37	Searching	7.7	2018
38	Dragged Across Concrete	8.2	2018
40	Isle of Dogs	7.9	2018
41	Burning	7.6	2018
42	The Mustang	7.6	2019
45	Dragon Ball Super: Broly	8.1	2018
46	An Elephant Sitting Still	7.8	2018
47	Werk ohne Autor	7.7	2018
48	Love, Simon	7.7	2018
53	Pájaros de verano	7.9	2018
55	The Report	7.7	2019
56	Happy as Lazzaro	7.6	2018
57	Kona fer i strö	7.6	2018
60	The Iron Orchard	8	2018
62	Ahlat Agaci	8.3	2018
65	Official Secrets	8.2	2019

## USE CASE 2:

Find the movies who's Metascores are below 60

```
CREATE VIEW `usecase_2` AS
SELECT movies.movie_id,movies.movie_names,m_ratings.imdb_ratings,
m_ratings.year_release
FROM (m_ratings
INNER JOIN movies ON m_ratings.movie_id=movies.movie_id)
where metscores < 60;
```

movie_id	movie_names	imdb_ratings	year_release
1	Bohemian Rhapsody	8.1	2018
3	Alita: Battle Angel	7.6	2019
9	Instant Family	7.4	2018
38	Dragged Across Concrete	8.2	2018
45	Dragon Ball Super: Broly	8.1	2018
59	I Can Only Imagine	7.4	2018
60	The Iron Orchard	8	2018
61	Them That Follow	7.3	2019
67	After the Wedding	7.7	2019
68	I Am Mother	7.4	2019

## USE CASE 3:

Find the movies who's vote count is greater than 20,000 limiting to 5 movies

```
CREATE VIEW `usecase_3` AS
SELECT movies.movie_id,movies.movie_names,m_ratings.imdb_ratings,
m_ratings.year_release
FROM (m_ratings
INNER JOIN movies ON m_ratings.movie_id=movies.movie_id)
Where votes > 20000 limit 5;
```

movie_id	movie_names	imdb_ratings	year_release
1	Bohemian Rhapsody	8.1	2018
2	Green Book	8.3	2018
3	Alita: Battle Angel	7.6	2019
4	A Star Is Born	7.8	2018
5	Spider-Man: Into the Spider-Verse	8.6	2018

#### USE CASE 4:

Find the star cast of movies “Green Book” and “A star is Born”

```
CREATE VIEW `usecase_4` AS
SELECT movies.movie_names,actor.star_cast
FROM (m_actor
INNER JOIN movies ON m_actor.movie_id=movies.movie_id
INNER JOIN actor ON m_actor.actor_id=actor.actor_id)
where movie_names='Green Book' or movie_names='Gully Boy';
```

movie_names	star_cast
Green Book	Peter Farrelly
Green Book	Viggo Mortensen
Green Book	Mahershala Ali
Green Book	Linda Cardellini
Gully Boy	Zoya Akhtar
Gully Boy	Ranveer Singh
Gully Boy	Alia Bhatt
Gully Boy	Siddhant Chaturvedi

#### USE CASE 5:

Find the Genres of movies “Bohemian Rhapsody” and “The Favourite”

```
CREATE VIEW `usecase_5` AS
SELECT movies.movie_names , genre.genre
FROM ((m_genre
INNER JOIN movies ON m_genre.movie_id=movies.movie_id)
INNER JOIN genre ON m_genre.genre_id=genre.genre_id)
where movie_names='Bohemian Rhapsody' or movie_names='The Favourite'
```

movie_names	genre
Bohemian Rhapsody	Biography
Bohemian Rhapsody	Drama
Bohemian Rhapsody	Music
The Favourite	Biography
The Favourite	Comedy
The Favourite	Drama

#### USE CASE 6:

Find the movie names, imdb\_ratings, Captions and User IDs using joins on Movies and Instagram (Consumers) table where Instagram likes for a user > 20 limit to 5:

```
CREATE VIEW `usecase_6` AS
SELECT movies.movie_names ,
m_ratings.imdb_ratings, user_insta.User_ID, user_insta.Caption, user_insta.likes
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)
where user_insta.likes > 20 limit 5;
```

movie_names	imdb_ratings	User_ID	Caption	likes
The Favourite	7.7	itsfrankfu	Trying to recreate that scene in "The Favourite"...	291
Isle of Dogs	7.9	cerenorakci	Happiness is when what you think, what you sa...	21
Dogman	7.3	boyz_in_the_hood_kennel	Remember the name prosperous 💰💰💰.....	77

#### USE CASE 7:

Find the all the User posts for a particular movie

```
CREATE VIEW `usecase_7` AS
SELECT movies.movie_id, movies.movie_names , m_ratings.year_release,
m_ratings.runtime , user_insta.User_ID, user_insta.Caption, user_insta.likes, user_insta.Date,
user_insta.Time
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)
Where movies.movie_names='Green Book';
```

movie_id	movie_names	year_release	runtime	User_ID	Caption	likes	Date	Time
2	Green Book	2018	130 min	trinececelia	#movienight 🎬🎥🎬 #greenbook	2	3/23/19	19:35
2	Green Book	2018	130 min	rosa.rosah	Dia lindo , de Cinema #Greenbook. #cinema C...	3	3/23/19	19:29

## USE CASE 8:

Find the all the User posts for a particular movie where metascores > 60 and imdb ratings < 7.5

```
CREATE VIEW `usecase_8` AS
SELECT movies.movie_id,movies.movie_names , m_ratings.year_release,
m_ratings.runtime , user_insta.User_ID,user_insta.Caption, user_insta.likes, user_insta.Date,
user_insta.Time,director.director_name
FROM ((m_ratings,insta_post,user_insta,m_director
INNER JOIN movies ON m_ratings.movie_id=movies.movie_id
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON user_insta.User_ID=user_insta.User_ID
INNER JOIN director ON m_director.director_id=director.director_id
)
where metscores > 60 and imdb_ratings < 7.5";
```

movie_id	movie_names	year_release	metscores	imdb_ratings	runtime	User_ID	Caption	likes	Date	Time	director_name
2	Green Book	2018	69	8.3	130 min	trinececelia	#movienight 🎬🎥🎬 #greenbook	2	3/23/19	19:35	Peter Farrelly
2	Green Book	2018	69	8.3	130 min	rosa.rosah	Dia lindo , de Cinema #Greenbook. #cinema C...	3	3/23/19	19:29	Peter Farrelly
4	A Star Is Born	2018	88	7.8	136 min	gagasedits	[ #ladygaga #bradleycooper #astarisborn #moth...	1	3/23/19	19:59	Bradley Cooper
4	A Star Is Born	2018	88	7.8	136 min	marieetlara	Shallow 🌟 - @ladygaga et bradley cooper Ce...	20	3/23/19	19:56	Bradley Cooper
6	The Favourite	2018	90	7.7	119 min	nestorneu	Bic. The favourite. Rachel . #inkdrawing #artists...	6	3/23/19	19:47	Yorgos Lanthimos

## USE CASE 9:

Find the average of all ratings for Movies

```
CREATE VIEW `usecase_9` AS
SELECT avg(m_ratings.imdb_ratings), avg(m_ratings.votes),
avg(m_ratings.metscores), avg(m_ratings.runtime)
FROM (m_ratings
INNER JOIN movies ON m_ratings.movie_id=movies.movie_id)
```

avg(m_ratings.imdb_ratings)	avg(m_ratings.votes)	avg(m_ratings.metscores)	avg(m_ratings.runtime)
7.659999999999999	70265.2857	72.6714	118.77142857142857

USE CASE 10:

Find all twitter post for the movies produced by 20th Century Fox

```
CREATE VIEW `usecase_9` AS
SELECT DISTINCT movies.movie_id as movie_id, movies.movie_names as movie_names,
twitter_movies.Producers AS Producers, movies.twitter_movies.User_id AS Producer_user_id,
user_twitter.User_id AS User_id, user_twitter.User_Name AS User_Name,
user_twitter.User_post AS User_post, user_twitter.Date AS Date, user_twitter.Time AS Time
FROM ( movies
INNER JOIN twitter_movies on twitter_movies.movie_id=movies.movie_id
INNER JOIN tweet_movies on tweet_movies.movie_id=twitter_movies.movie_id
INNER JOIN user_twitter on user_twitter_movies.User_id=tweet_movies.User_id)
WHERE twitter_movies.Producers='20th Century Fox';
```

movie_id	movie_names	Producers	Producer_user_id	User_id	User_Name	User_post	Date	Time
1	Bohemian Rhapsody	20th Century Fox	203162990	171822774	/SisecikaJareda/	RT @NylaUy: Not the coffee machine! #Bohem... Mar-18-2019	17:55:55	
1	Bohemian Rhapsody	20th Century Fox	203162990	2204352932	John Cancilla84 🇺🇸	RT @IndieWire: #BohemianRhapsody won the... Mar-18-2019	17:55:22	
1	Bohemian Rhapsody	20th Century Fox	203162990	74741400000000000000	伶菜 🍒@ぽらぶ余韻	イギリスすでにリリースされてるボヘミアン... Mar-18-2019	17:51:33	
1	Bohemian Rhapsody	20th Century Fox	203162990	89019600000000000000	Abhishek Mondal	RT @neiltyson: I first heard Queen's song #Boh... Mar-18-2019	17:40:38	

## STORED PROCEDURES:

Stored Procedure 1: Show all the tables

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_1`()
BEGIN
SHOW DATABASES;

SHOW TABLES;

SELECT i.TABLE_NAME, i.COLUMN_NAME, i.IS_NULLABLE, i.DATA_TYPE, i.PRIVILEGES
FROM information_schema.columns i
WHERE table_schema = 'Movies';

END
```

TABLE_NAME	COLUMN_NAME	IS_NULLABLE	DATA_TYPE	PRIVILEGES	TABLE_NAME	COLUMN_NAME	IS_NULLABLE	DATA_TYPE	PRIVILEGES
actor	actor_id	NO	int	select,insert,update,references	usecase_1	movie_id	NO	int	select,insert,update,references
actor	star_cast	YES	longtext	select,insert,update,references	usecase_1	movie_names	YES	text	select,insert,update,references
caption_hashtags	hashtag_id	NO	int	select,insert,update,references	usecase_1	imdb_ratings	YES	double	select,insert,update,references
caption_hashtags	Caption_HashTags	YES	longtext	select,insert,update,references	usecase_1	year_release	YES	int	select,insert,update,references
director	director_id	NO	int	select,insert,update,references	usecase_10	movie_id	NO	int	select,insert,update,references
director	director_name	YES	text	select,insert,update,references	usecase_10	movie_names	YES	text	select,insert,update,references
genre	genre_id	NO	int	select,insert,update,references	usecase_10	Producers	YES	text	select,insert,update,references
genre	genre	YES	longtext	select,insert,update,references	usecase_10	Producer_user_id	YES	int	select,insert,update,references
insta_hashtags	movie_id	NO	int	select,insert,update,references	usecase_10	User_id	YES	bigint	select,insert,update,references
insta_hashtags	hashtag_id	NO	int	select,insert,update,references	usecase_10	User_Name	YES	text	select,insert,update,references
insta_post	movie_id	NO	int	select,insert,update,references	usecase_10	User_post	YES	text	select,insert,update,references
insta_post	User_ID	NO	varchar	select,insert,update,references	usecase_10	Date	YES	longtext	select,insert,update,references
m_actor	movie_id	NO	int	select,insert,update,references	usecase_10	Time	YES	longtext	select,insert,update,references
m_actor	actor_id	NO	int	select,insert,update,references	usecase_2	movie_id	NO	int	select,insert,update,references
m_director	movie_id	NO	int	select,insert,update,references	usecase_2	movie_names	YES	text	select,insert,update,references
m_director	director_id	NO	int	select,insert,update,references	usecase_2	imdb_ratings	YES	double	select,insert,update,references
m_genre	movie_id	NO	int	select,insert,update,references	usecase_2	year_release	YES	int	select,insert,update,references
m_genre	genre_id	NO	int	select,insert,update,references	usecase_3	movie_id	NO	int	select,insert,update,references
m_ratings	movie_id	NO	int	select,insert,update,references	usecase_3	movie_names	YES	text	select,insert,update,references
m_ratings	year_release	YES	int	select,insert,update,references	usecase_3	imdb_ratings	YES	double	select,insert,update,references
m_ratings	imdb_ratings	YES	double	select,insert,update,references	usecase_3	year_release	YES	int	select,insert,update,references
m_ratings	metscores	YES	int	select,insert,update,references	usecase_4	movie_names	YES	text	select,insert,update,references
m_ratings	votes	YES	int	select,insert,update,references	usecase_4	star_cast	YES	longtext	select,insert,update,references
m_ratings	runtime	YES	text	select,insert,update,references	usecase_5	movie_names	YES	text	select,insert,update,references
movies	movie_id	NO	int	select,insert,update,references	usecase_5	genre	YES	longtext	select,insert,update,references
movies	movie_names	YES	text	select,insert,update,references	usecase_6	movie_names	YES	text	select,insert,update,references
tweet_movies	movie_id	NO	int	select,insert,update,references	usecase_6	imdb_ratings	YES	double	select,insert,update,references
tweet_movies	User_id	YES	bigint	select,insert,update,references	usecase_6	User_ID	YES	text	select,insert,update,references
twitter_movies	movie_id	YES	int	select,insert,update,references	usecase_6	Caption	YES	text	select,insert,update,references
twitter_movies	Producers	YES	text	select,insert,update,references	usecase_6	likes	YES	int	select,insert,update,references
twitter_movies	User_id	YES	int	select,insert,update,references	usecase_7	movie_id	NO	int	select,insert,update,references
twitter_movies	Followers	YES	int	select,insert,update,references	usecase_7	movie_names	YES	text	select,insert,update,references
twitter_movies	Post	YES	text	select,insert,update,references	usecase_7	year_release	YES	int	select,insert,update,references
twitter_movies	Post_ID	YES	int	select,insert,update,references	usecase_7	runtime	YES	text	select,insert,update,references
twitter_movies	Date	YES	longtext	select,insert,update,references	usecase_7	User_ID	YES	text	select,insert,update,references
twitter_movies	Time	YES	longtext	select,insert,update,references	usecase_7	Caption	YES	text	select,insert,update,references

Stored Procedure 2: Show all the Instagram post of users who's username starts with 't'.

```

CREATE DEFINER='root'@'localhost' PROCEDURE `sp_2`()
BEGIN
SELECT movies.movie_id,movies.movie_names , user_insta.User_ID, user_insta.Caption,
user_insta.likes, user_insta.Date,
user_insta.Time
FROM (movies
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID
)
where user_insta.User_ID like 't%';
END

```

movie_id	movie_names	User_ID	Caption	likes	Date	Time
1	Bohemian Rhapsody	tomercuryandbeyond	freddie in white is an angel #freddiemercury #fr...	0	3/23/19	19:59
2	Green Book	trinececelia	#movienight 🎬🍿 #greenbook	2	3/23/19	19:35
40	Isle of Dogs	timv1n	#canarywharf #london #winterlights #uk #visitlo...	5	3/23/19	19:55
52	Blindspotting	t_a_morgan	Look @dunestonefilms, it's the green drink from...	5	3/22/19	3:50

Stored Procedure 3: Show the all attributes of movies who has votes >50000

```

CREATE DEFINER='root'@'localhost' PROCEDURE `sp_3`()
BEGIN

```

```

SELECT distinct movies.movie_id,movies.movie_names, m_ratings.imdb_ratings,
m_ratings.year_release,m_ratings.votes, actor.star_cast, director.director_name
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN m_actor ON m_actor.movie_id=movies.movie_id
INNER JOIN actor ON actor.actor_id=m_actor.actor_id
INNER JOIN m_director ON m_director.movie_id=movies.movie_id
INNER JOIN director ON director.director_id=m_director.director_id
)
where m_ratings.votes>50000;
END

```

movie_id	movie_names	imdb_ratings	year_release	votes	star_cast	director_name
1	Bohemian Rhapsody	8.1	2018	302811	Bryan Singer	Bryan Singer
1	Bohemian Rhapsody	8.1	2018	302811	Rami Malek	Bryan Singer
1	Bohemian Rhapsody	8.1	2018	302811	Lucy Boynton	Bryan Singer
1	Bohemian Rhapsody	8.1	2018	302811	Gwilym Lee	Bryan Singer
2	Green Book	8.3	2018	145878	Peter Farrelly	Peter Farrelly
2	Green Book	8.3	2018	145878	Viggo Mortensen	Peter Farrelly
2	Green Book	8.3	2018	145878	Mahershala Ali	Peter Farrelly
2	Green Book	8.3	2018	145878	Linda Cardellini	Peter Farrelly
3	Alita: Battle Angel	7.6	2019	75015	Robert Rodriguez	Robert Rodriguez
3	Alita: Battle Angel	7.6	2019	75015	Rosa Salazar	Robert Rodriguez
3	Alita: Battle Angel	7.6	2019	75015	Christoph Waltz	Robert Rodriguez
3	Alita: Battle Angel	7.6	2019	75015	Jennifer Connelly	Robert Rodriguez
4	A Star Is Born	7.8	2018	218321	Bradley Cooper	Bradley Cooper
4	A Star Is Born	7.8	2018	218321	Lady Gaga	Bradley Cooper
4	A Star Is Born	7.8	2018	218321	Sam Elliott	Bradley Cooper
5	Spider-Man: Into the... 8.6	2018	149534	Bob Persichetti	Bob Persichetti	
5	Spider-Man: Into the... 8.6	2018	149534	Peter Ramsey	Bob Persichetti	
5	Spider-Man: Into the... 8.6	2018	149534	Rodney Rothman	Bob Persichetti	
5	Spider-Man: Into the... 8.6	2018	149534	Shameik Moore	Bob Persichetti	
5	Spider-Man: Into the... 8.6	2018	149534	Jake Johnson	Bob Persichetti	
6	The Favourite	7.7	2018	94031	Yorgos Lanthimos	Yorgos Lanthimos
6	The Favourite	7.7	2018	94031	Olivia Colman	Yorgos Lanthimos
6	The Favourite	7.7	2018	94031	Emma Stone	Yorgos Lanthimos
6	The Favourite	7.7	2018	94031	Rachel Weisz	Yorgos Lanthimos
10	BlacKkKlansman	7.5	2018	127321	Spike Lee	Spike Lee
10	BlacKkKlansman	7.5	2018	127321	John David Wash...	Spike Lee
10	BlacKkKlansman	7.5	2018	127321	Adam Driver	Spike Lee
10	BlacKkKlansman	7.5	2018	127321	Laura Harrier	Spike Lee
11	Avengers: Infinity War	8.5	2018	604301	Anthony Russo	Anthony Russo
11	Avengers: Infinity War	8.5	2018	604301	Joe Russo	Anthony Russo
11	Avengers: Infinity War	8.5	2018	604301	Robert Downey Jr.	Anthony Russo
11	Avengers: Infinity War	8.5	2018	604301	Chris Hemsworth	Anthony Russo
11	Avengers: Infinity War	8.5	2018	604301	Mark Ruffalo	Anthony Russo
12	Roma	7.8	2018	96387	Alfonso Cuarón	Alfonso Cuarón
12	Roma	7.8	2018	96387	Yalitza Aparicio	Alfonso Cuarón
12	Roma	7.8	2018	96387	Marina de Tavira	Alfonso Cuarón
16	Deadpool 2	7.8	2018	361866	David Leitch	David Leitch
16	Deadpool 2	7.8	2018	361866	Ryan Reynolds	David Leitch
16	Deadpool 2	7.8	2018	361866	Josh Brolin	David Leitch
16	Deadpool 2	7.8	2018	361866	Morena Baccarin	David Leitch
17	First Man	7.4	2018	106634	Damien Chazelle	Damien Chazelle
17	First Man	7.4	2018	106634	Ryan Gosling	Damien Chazelle
17	First Man	7.4	2018	106634	Claire Foy	Damien Chazelle
17	First Man	7.4	2018	106634	Jason Clarke	Damien Chazelle
18	Heredity	7.3	2018	137941	Ari Aster	Ari Aster
18	Heredity	7.3	2018	137941	Tori Colette	Ari Aster
18	Heredity	7.3	2018	137941	Milly Shapiro	Ari Aster
18	Heredity	7.3	2018	137941	Gabriel Byrne	Ari Aster
19	The Ballad of Buster...	7.3	2018	78615	Ethan Coen	Ethan Coen
19	The Ballad of Buster...	7.3	2018	78615	Joel Coen	Ethan Coen
19	The Ballad of Buster...	7.3	2018	78615	Tim Blake Nelson	Ethan Coen
19	The Ballad of Buster...	7.3	2018	78615	Willie Watson	Ethan Coen
19	The Ballad of Buster...	7.3	2018	78615	Clancy Brown	Ethan Coen
23	Incredibles 2	7.7	2018	187154	Brad Bird	Brad Bird
23	Incredibles 2	7.7	2018	187154	Craig T. Nelson	Brad Bird
23	Incredibles 2	7.7	2018	187154	Holly Hunter	Brad Bird
23	Incredibles 2	7.7	2018	187154	Sarah Vowell	Brad Bird
24	Ready Player One	7.5	2018	287198	Steven Spielberg	Steven Spielberg
24	Ready Player One	7.5	2018	287198	Tye Sheridan	Steven Spielberg
24	Ready Player One	7.5	2018	287198	Olivia Cooke	Steven Spielberg
24	Ready Player One	7.5	2018	287198	Ben Mendelsohn	Steven Spielberg
25	A Quiet Place	7.6	2018	284591	John Krasinski	John Krasinski
25	A Quiet Place	7.6	2018	284591	Emily Blunt	John Krasinski
25	A Quiet Place	7.6	2018	284591	Millicent Simmonds	John Krasinski
29	Mission: Impossible...	7.8	2018	220460	Christopher McQ...	Christopher McQ...
29	Mission: Impossible...	7.8	2018	220460	Tom Cruise	Christopher McQ...
29	Mission: Impossible...	7.8	2018	220460	Henry Cavill	Christopher McQ...
29	Mission: Impossible...	7.8	2018	220460	Ving Rhames	Christopher McQ...
34	Upgrade	7.6	2018	95434	Leigh Whannell	Leigh Whannell
34	Upgrade	7.6	2018	95434	Logan Marshall...	Leigh Whannell
34	Upgrade	7.6	2018	95434	Melanie Vallejo	Leigh Whannell
34	Upgrade	7.6	2018	95434	Steve Daniels	Leigh Whannell

Stored Producers 4: Show movies name, user id, caption, likes, posted date and posted time where likes >40

```

CREATE DEFINER='root'@'localhost' PROCEDURE `sp_4`()
BEGIN
SELECT movies.movie_names
, user_insta.User_ID, user_insta.Caption, user_insta.likes, user_insta.Date, user_insta.Time
FROM (movies
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)
where user_insta.likes > 40;
END

```

movie_names	User_ID	Caption	likes	Date	Time
The Favourite	itsfrankfu	Trying to recreate that scene in "The Favourite"...	291	3/23/19	18:14
Dogman	boyz_in_the_hood_kennel	Remember the name prosperous 💰💰💰.....	77	3/23/19	19:12

Stored Procedure 5: Show attributes of movies and attributes of twitter post where imdb ratings>7.2

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_5`()
BEGIN
SELECT movies.movie_names , m_ratings.imdb_ratings,m_ratings.metscores,
m_ratings.votes,m_ratings.runtime,
user_twitter.User_id, user_twitter.User_Name, user_twitter.User_post, user_twitter.Date,
user_twitter.Time
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN tweet_movies ON tweet_movies.movie_id=movies.movie_id
INNER JOIN user_twitter ON user_twitter.User_id=tweet_movies.User_id
)
where m_ratings.imdb_ratings > 7.2 ;
END

```

movie_names	imdb_ratings	metscores	votes	runtime	User_id	User_Name	User_post	Date	Time
A Star Is Born	7.8	88	218321	136 min	212437038	Pablo Villalva	Took some time but finally watched #AStarIsBorn... Mar-18-2019 17:44:50		
A Star Is Born	7.8	88	218321	136 min	212437038	Pablo Villalva	Took some time but finally watched #AStarIsBorn... Mar-18-2019 17:44:50		
A Star Is Born	7.8	88	218321	136 min	21355550	Michelle Minniti	RT @herenowhere3: Maybe It's Time... https://t... Mar-18-2019 17:44:43		
A Star Is Born	7.8	88	218321	136 min	21355550	Michelle Minniti	RT @herenowhere3: Maybe It's Time... https://t... Mar-18-2019 17:44:43		
A Star Is Born	7.8	88	218321	136 min	2719251450	Steph Croft	RT @emzxoxxo: Shallows - @ladygaga #Brad... Mar-18-2019 17:56:17		
A Star Is Born	7.8	88	218321	136 min	2940534203	Chels 🇺🇸	RT @emzxoxxo: Shallows - @ladygaga #Brad... Mar-18-2019 17:55:55		
A Star Is Born	7.8	88	218321	136 min	90625300000000000000	Moist 🌿	RT @emzxoxxo: Shallows - @ladygaga #Brad... Mar-18-2019 17:54:14		
A Star Is Born	7.8	88	218321	136 min	87681300000000000000	. I ❤️ Better Gregg 🌿 II RETWEET PINNED...	RT @emzxoxxo: Shallows - @ladygaga #Brad... Mar-18-2019 17:53:57		
A Star Is Born	7.8	88	218321	136 min	96353700000000000000	Dani needs to see United Vibe and Katie! 🍒	RT @emzxoxxo: Shallows - @ladygaga #Brad... Mar-18-2019 17:53:18		
A Star Is Born	7.8	88	218321	136 min	10083200000000000000	Ems	Shallows - @ladygaga #BradleyCooper 🌹 http... Mar-18-2019 17:51:25		
A Star Is Born	7.8	88	218321	136 min	212437038	Pablo Villalva	Took some time but finally watched #AStarIsBorn... Mar-18-2019 17:44:50		
A Star Is Born	7.8	88	218321	136 min	212437038	Pablo Villalva	Took some time but finally watched #AStarIsBorn... Mar-18-2019 17:44:50		
A Star Is Born	7.8	88	218321	136 min	21355550	Michelle Minniti	RT @herenowhere3: Maybe It's Time... https://t... Mar-18-2019 17:44:43		
A Star Is Born	7.8	88	218321	136 min	21355550	Michelle Minniti	RT @herenowhere3: Maybe It's Time... https://t... Mar-18-2019 17:44:43		
Ready Player...	7.5	64	287198	140 min	322193934	FuzzofftheDead	Ich möchte nicht, dass es endet! ❤️ #ReadyPlay... Mar-18-2019 17:35:05		
Ready Player...	7.5	64	287198	140 min	84857500000000000000	Alt Maria Clara	Parang may hawig si Erich G kay Olivia Cooke... Mar-18-2019 16:20:35		
Ready Player...	7.5	64	287198	140 min	95496200000000000000	G4L4Hd	https://t.co/Q6QVkmZvF ReadyPlayerOne #V... Mar-18-2019 16:00:34		
Ready Player...	7.5	64	287198	140 min	11074900000000000000	Emmaks	#ReadyPlayerOne nos muestra una realidad qu... Mar-18-2019 15:20:08		
Ready Player...	7.5	64	287198	140 min	10848800000000000000	MrFilmFreak	#ReadyPlayerOne! What a fantastic film; the mu... Mar-18-2019 12:10:16		
Ready Player...	7.5	64	287198	140 min	97449700000000000000	Tadashi	Reality is the only thing that's real. #Readyplay... Mar-18-2019 12:01:00		
Black Panther	7.3	88	480469	134 min	2550468750	يا جمال يا أزرق	RT @itrukM: Bafetimbi Gomis #BlackPanther ht... Mar-18-2019 17:58:07		
Black Panther	7.3	88	480469	134 min	80676000000000000000	RAY	RT @itrukM: Bafetimbi Gomis #BlackPanther ht... Mar-18-2019 17:57:59		
Black Panther	7.3	88	480469	134 min	2947555430	♥️ عز اهلاء Az عز	RT @itrukM: Bafetimbi Gomis #BlackPanther ht... Mar-18-2019 17:57:54		
Black Panther	7.3	88	480469	134 min	455368975	casser	RT @itrukM: Bafetimbi Gomis #BlackPanther ht... Mar-18-2019 17:57:48		
Black Panther	7.3	88	480469	134 min	424481981	بدر الحمد	RT @itrukM: Bafetimbi Gomis #BlackPanther ht... Mar-18-2019 17:57:29		
Black Panther	7.3	88	480469	134 min	328936492	mohammed alahmari	RT @itrukM: Bafetimbi Gomis #BlackPanther ht... Mar-18-2019 17:56:36		
Black Panther	7.3	88	480469	134 min	74885000000000000000	Shubham Agarwal	RT @ParvezKaswan: The elusive #BlackPant... Mar-18-2019 17:56:09		
Black Panther	7.3	88	480469	134 min	359574437	Emisael Benitez	RT @IniciativaV: Hace exactamente un año, #M... Mar-18-2019 17:33:49		
Gully Boy	8.5	65	10716	153 min	53391671	vineethkhare وينيت كلفر	Thanks to Divine and #GullyBoy , I am trying to l... Mar-18-2019 17:56:36		
Gully Boy	8.5	65	10716	153 min	53391671	vineethkhare وينيت كلفر	Thanks to Divine and #GullyBoy , I am trying to l... Mar-18-2019 17:56:36		
Gully Boy	8.5	65	10716	153 min	2735791809	♥️	RT @BoxotopView: #GullyBoy 🔍 CURRENT D... Mar-18-2019 17:54:24		
Gully Boy	8.5	65	10716	153 min	2735791809	♥️	RT @BoxotopView: #GullyBoy 🔍 CURRENT D... Mar-18-2019 17:54:24		
Gully Boy	8.5	65	10716	153 min	59177982	Sharang	RT @BoxotopView: #GullyBoy 🔍 CURRENT D... Mar-18-2019 17:54:24		
Gully Boy	8.5	65	10716	153 min	38067861	viveick rajagopalan	For your Monday morning commute...start your... Mar-18-2019 11:44:48		
Gully Boy	8.5	65	10716	153 min	53391671	vineethkhare وينيت كلفر	Attempt at hip hop by an American chokra. #Gul... Mar-18-2019 00:06:16		
Gully Boy	8.5	65	10716	153 min	53391671	vineethkhare وينيت كلفر	RT @HessaAlBanafsa: The movie #GullyBoy is... Mar-12-2019 15:28:23		
Gully Boy	8.5	65	10716	153 min	53391671	vineethkhare وينيت كلفر	Thanks to Divine and #GullyBoy , I am trying to l... Mar-18-2019 17:56:36		
Gully Boy	8.5	65	10716	153 min	2735791809	♥️	Thanks to Divine and #GullyBoy , I am trying to l... Mar-18-2019 17:56:36		
Gully Boy	8.5	65	10716	153 min	2735791809	♥️	RT @BoxotopView: #GullyBoy 🔍 CURRENT D... Mar-18-2019 17:54:24		
Gully Boy	8.5	65	10716	153 min	94495400000000000000	TANVI KAPURWAN	RT @BoxotopView: #GullyBoy 🔍 CURRENT D... Mar-18-2019 17:54:24		
Gully Boy	8.5	65	10716	153 min	57892132	#Chawkidaa SAURAV VERMA	RT @Zakirous: Hausla rakhiy, qayamat aayegi... Mar-18-2019 17:29:30		
Gully Boy	8.5	65	10716	153 min	82933700000000000000	Vishnu Ingale	@SquinNeon2 #ApnaTimeAayega That's the way Mar-18-2019 17:15:35		
Gully Boy	8.5	65	10716	153 min	89220800000000000000	Kiran	RT @aliaa08: #ApnaTimeAayega out today! Sta... Mar-18-2019 16:54:39		
Gully Boy	8.5	65	10716	153 min	89220800000000000000	Kiran	RT @RASunarti: #ApnaTimeAayega संत रामातां... Mar-18-2019 16:52:00		
Gully Boy	8.5	65	10716	153 min	89220800000000000000	Kiran	RT @RASunarti: #ApnaTimeAayega संत रामातां... Mar-18-2019 16:52:00		
Gully Boy	8.5	65	10716	153 min	89220800000000000000	Kiran	RT @Sushila78769283: #ApnaTimeAayega आ... Mar-18-2019 16:50:23		
Gully Boy	8.5	65	10716	153 min	89220800000000000000	Kiran	RT @Sushila78769283: #ApnaTimeAayega आ... Mar-18-2019 16:50:23		
Gully Boy	8.5	65	10716	153 min	92995100000000000000	W F A R	RT @rubyraza: Talking about this on #LycaRad... Mar-18-2019 17:55:28		
Gully Boy	8.5	65	10716	153 min	88483300000000000000	Darsh_3	RT @BzAsia: #RanveerSingh launches own un... Mar-18-2019 17:55:17		
Gully Boy	8.5	65	10716	153 min	88483300000000000000	Darsh_3	RT @BzAsia: #RanveerSingh launches own un... Mar-18-2019 17:55:17		
Gully Boy	8.5	65	10716	153 min	88483300000000000000	Dumbo	RT @Colors_Cineplex: Mirror mirror on the wall,... Mar-18-2019 17:55:15		
Gully Boy	8.5	65	10716	153 min	88483300000000000000	Dumbo	RT @Colors_Cineplex: Mirror mirror on the wall,... Mar-18-2019 17:55:15		
Gully Boy	8.5	65	10716	153 min	88483200000000000000	pur	RT @ieEntertainment: #RanveerSingh, #Katrina... Mar-18-2019 17:55:09		
Gully Boy	8.5	65	10716	153 min	81483300000000000000	bin	RT @htshowbiz: #RanveerSingh's reaction whe... Mar-18-2019 17:55:07		
Bohemian Rh... .8.1	49	302811	134 min	171822774	/SisechkaJareda/	RT @NyraUy: Not the coffee machine! #BohemianRh... Mar-18-2019 17:55:55			
Bohemian Rh... .8.1	49	302811	134 min	2204352932	John Cancilla&#9633;	RT @IndieWire: #BohemianRhapsody won the... Mar-18-2019 17:55:22			
Bohemian Rh... .8.1	49	302811	134 min	74741400000000000000	伶菜 🐸@ぽらぶる余韻	イギリスすでにリースされるボヘミアン... Mar-18-2019 17:51:33			
Bohemian Rh... .8.1	49	302811	134 min	89019600000000000000	Abhishek Mondal	RT @neilsony: I first heard Queen's song #Boh... Mar-18-2019 17:40:38			
Alita: Battle A... 7.6	54	75015	122 min	87646300000000000000	Alita #99 - Jérôme	Yeah, trying to go for the 40 times, thanks tho #... Mar-18-2019 17:57:56			
Alita: Battle A... 7.6	54	75015	122 min	10074900000000000000	🌙	RT @20thcenturyfox: Nothing is impossible. In... Mar-13-2019 08:34:43			
Alita: Battle A... 7.6	54	75015	122 min	3286651	MK12 (1/3 Of The Crimson 15 Podcast)	RT @GenXStrikesBack: #AlitaBattleAngel https... Mar-18-2019 17:57:31			
Alita: Battle A... 7.6	54	75015	122 min	60100860	Clayton Davis	Box Office: 'Captain Marvel' Reigns Again Cross... Mar-18-2019 17:56:26			
Alita: Battle A... 7.6	54	75015	122 min	465819392	Sam'	RT @RealZensui: #Alita #AlitaBattleAngel #Alit... Mar-18-2019 17:53:38			
Alita: Battle A... 7.6	54	75015	122 min	1941063259	ShadowZ455	RT @GenXStrikesBack: #AlitaBattleAngel https... Mar-18-2019 17:52:38			
Alita: Battle A... 7.6	54	75015	122 min	299801293	Ch@rlie!	RT @RealZensui: #Alita #AlitaBattleAngel #Alit... Mar-18-2019 17:52:34			
Alita: Battle A... 7.6	54	75015	122 min	2413372393	Dillon Scott Speight	RT @GenXStrikesBack: #AlitaBattleAngel https... Mar-18-2019 17:34:08			
Alita: Battle A... 7.6	54	75015	122 min	11028700000000000000	Михаил	RT @warrior17739: The absolute love, craftsma... Mar-18-2019 17:29:12			

Stored Procedure 6: Show all twitter post posted by producers in the month of Ferbury

```
CREATE DEFINER='root'@'localhost' PROCEDURE `sp_6`() BEGIN
```

```

SELECT movies.movie_names
,twitter_movies.Producers,twitter_movies.User_id,twitter_movies.Followers,twitter_movies.Post,twitter_movies.Posted_time,twitter_movies.Post_id
FROM (movies
INNER JOIN twitter_movies ON twitter_movies.movie_id=movies.movie_id)
where twitter_movies.Posted_time like '%Feb%';
END

```

movie_names	Producers	User_id	Followers	Post	Date	Time	Post_id
Bohemian Rhapsody	20th Century Fox	203162990	3742372	RT @THR: Don't stop him now. Best actor nomi...	Feb-25-2019	00:59:05	96
A Star Is Born	Warner Bros. Pictures	20255162	4024388	RT @starisbornmovie: The cast of #AStarIsBorn...	Feb-25-2019	01:15:51	9
A Star Is Born	Warner Bros. Pictures	20255162	4024388	RT @A Star Is Born: That Friday feeling. #A Sta...	Feb-23-2019	18:30:14	11
A Star Is Born	Warner Bros. Pictures	20255162	4024388	RT @AStarIsBorn: Always. #WyldeWednesdays...	Feb-20-2019	23:03:50	12
A Star Is Born	Warner Bros. Pictures	20255162	4024388	RT @AStarIsBorn: Sing and dance along with y...	Feb-23-2019	23:11:04	18
Roma	Paramount Pics	78734343	28337830	Check back here for trivia and use #Roma durin...	Feb-23-2019	18:56:45	115
Black Panther	Marvel Studios	751000000	2241495	Congratulations to #BlackPanther on their Acad...	Feb-25-2019	03:27:15	43
Ready Player One	Warner Bros. Pictures	20255162	4024388	RT @readyplayerone: The Visual Effects team...	Feb-06-2019	06:23:51	28

Stored Producers 7: Show all the twitter post and the movie attributes where the twitter post have posted about Gully Boy

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_7`()
BEGIN
SELECT distinct
movies.movie_names,m_ratings.imdb_ratings,m_ratings.year_release,m_ratings.votes,
user_twitter.User_id,user_twitter.User_Name,user_twitter.User_post,user_twitter.Date
,user_twitter.Time
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN tweet_movies ON tweet_movies.movie_id=movies.movie_id
INNER JOIN user_twitter ON tweet_movies.User_ID=user_twitter.User_ID)
where user_twitter.User_post like '%GullyBoy%';
END

```

movie_names	imdb_ratings	year_release	votes	User_id	User_Name	User_post	Date	Time	
Gully Boy	8.5	2019	10716	53391671	vineetkhare	विनीत खरे	Thanks to Divine and #GullyBoy , I am trying to l...	Mar-18-2019	17:56:36
Gully Boy	8.5	2019	10716	2735791809	♥		RT @BoxotopView: #GullyBoy 🎬 CURRENT D...	Mar-18-2019	17:54:24
Gully Boy	8.5	2019	10716	10391600000000000000	RANVEER	रणवीर	RT @alankar6427: Exclusive : #Gullyboy trailer...	Mar-18-2019	12:34:55
Gully Boy	8.5	2019	10716	59177982	viveick rajagopalan		RT @HessaAlBanatsaj: The movie #GullyBoy is...	Mar-12-2019	15:28:23

Stored Producer 8: Show all the movie attributes where Instagram users have posted about it on 3/21/19

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_8`()

```

BEGIN

```

SELECT distinct movies.movie_id, movies.movie_names, m_ratings.imdb_ratings,
director.director_name, actor.star_cast, user_insta.Date
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN m_director ON m_director.movie_id=movies.movie_id
INNER JOIN director ON director.director_id=m_director.director_id
INNER JOIN m_actor ON m_actor.movie_id=movies.movie_id
INNER JOIN actor ON actor.actor_id=m_actor.actor_id
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON user_insta.User_ID=insta_post.User_ID)
where user_insta.Date>3/21/19
;
END

```

movie_id	movie_names	imdb_ratings	director_name	star_cast	Date	movie_id	movie_names	imdb_ratings	director_name	star_cast	Date
1	Bohemian Rhapsody	8.1	Bryan Singer	Bryan Singer	3/23/19	12	Roma	7.8	Alfonso Cuarón	Alfonso Cuarón	3/23/19
1	Bohemian Rhapsody	8.1	Bryan Singer	Rami Malek	3/23/19	12	Roma	7.8	Alfonso Cuarón	Yalitza Aparicio	3/23/19
1	Bohemian Rhapsody	8.1	Bryan Singer	Lucy Boynton	3/23/19	12	Roma	7.8	Alfonso Cuarón	Marina de Tavira	3/23/19
1	Bohemian Rhapsody	8.1	Bryan Singer	Gwilym Lee	3/23/19	12	Roma	7.8	Alfonso Cuarón	Diego Cortina Au...	3/23/19
2	Green Book	8.3	Peter Farrelly	Peter Farrelly	3/23/19	20	Climax	7.3	Gaspar Noé	Gaspar Noé	3/23/19
2	Green Book	8.3	Peter Farrelly	Viggo Mortensen	3/23/19	20	Climax	7.3	Gaspar Noé	Sofia Boutella	3/23/19
2	Green Book	8.3	Peter Farrelly	Mahershala Ali	3/23/19	20	Climax	7.3	Gaspar Noé	Romain Guilleminic	3/23/19
2	Green Book	8.3	Peter Farrelly	Linda Cardellini	3/23/19	20	Climax	7.3	Gaspar Noé	Souheila Yacoub	3/23/19
4	A Star Is Born	7.8	Bradley Cooper	Bradley Cooper	3/23/19	21	Gully Boy	8.5	Zoya Akhtar	Zoya Akhtar	3/23/19
4	A Star Is Born	7.8	Bradley Cooper	Lady Gaga	3/23/19	21	Gully Boy	8.5	Zoya Akhtar	Ranveer Singh	3/23/19
4	A Star Is Born	7.8	Bradley Cooper	Sam Elliott	3/23/19	21	Gully Boy	8.5	Zoya Akhtar	Alia Bhatt	3/23/19
6	The Favourite	7.7	Yorgos Lanthi...	Yorgos Lanthimos	3/23/19	21	Gully Boy	8.5	Zoya Akhtar	Siddhant Chatur...	3/23/19
6	The Favourite	7.7	Yorgos Lanthi...	Olivia Colman	3/23/19	28	Cold War	7.7	Pawel Pawlikowski	Pawel Pawlikowski	3/23/19
6	The Favourite	7.7	Yorgos Lanthi...	Emma Stone	3/23/19	28	Cold War	7.7	Pawel Pawlikowski	Joanna Kulig	3/23/19
6	The Favourite	7.7	Yorgos Lanthi...	Rachel Weisz	3/23/19	28	Cold War	7.7	Pawel Pawlikowski	Tomasz Kot	3/23/19
9	Instant Family	7.4	Sean Anders	Sean Anders	3/23/19	28	Cold War	7.7	Pawel Pawlikowski	Borys Szyc	3/23/19
9	Instant Family	7.4	Sean Anders	Mark Wahlberg	3/23/19	40	Isle of Dogs	7.9	Wes Anderson	Wes Anderson	3/23/19
9	Instant Family	7.4	Sean Anders	Rose Byrne	3/23/19	40	Isle of Dogs	7.9	Wes Anderson	Bryan Cranston	3/23/19
9	Instant Family	7.4	Sean Anders	Isabela Moner	3/23/19	40	Isle of Dogs	7.9	Wes Anderson	Koyu Rankin	3/23/19
12	Roma	7.8	Alfonso Cuarón	Alfonso Cuarón	3/23/19	40	Isle of Dogs	7.9	Wes Anderson	Edward Norton	3/23/19
12	Roma	7.8	Alfonso Cuarón	Yalitza Aparicio	3/23/19	51	Dogman	7.3	Matteo Garrone	Matteo Garrone	3/23/19
12	Roma	7.8	Alfonso Cuarón	Marina de Tavira	3/23/19	51	Dogman	7.3	Matteo Garrone	Marcello Fonte	3/23/19
12	Roma	7.8	Alfonso Cuarón	Diego Cortina Au...	3/23/19	51	Dogman	7.3	Matteo Garrone	Edardo Pesce	3/23/19
20	Climax	7.3	Gaspar Noé	Gaspar Noé	3/23/19	51	Dogman	7.3	Matteo Garrone	Nunzia Schiano	3/23/19
20	Climax	7.3	Gaspar Noé	Sofia Boutella	3/23/19	52	Blindspotting	7.4	Carlos López...	Carlos López Est...	3/21/19
20	Climax	7.3	Gaspar Noé	Romain Guillermic	3/23/19	52	Blindspotting	7.4	Carlos López...	Daveed Diggs	3/21/19
20	Climax	7.3	Gaspar Noé	Souheila Yacoub	3/23/19	52	Blindspotting	7.4	Carlos López...	Rafael Casal	3/21/19
21	Gully Boy	8.5	Zoya Akhtar	Zoya Akhtar	3/23/19	52	Blindspotting	7.4	Carlos López...	Janina Gavankar	3/21/19
21	Gully Boy	8.5	Zoya Akhtar	Ranveer Singh	3/23/19	52	Blindspotting	7.4	Carlos López...	Carlos López Est...	3/22/19
21	Gully Boy	8.5	Zoya Akhtar	Alia Bhatt	3/23/19	52	Blindspotting	7.4	Carlos López...	Daveed Diggs	3/22/19
21	Gully Boy	8.5	Zoya Akhtar	Siddhant Chatur...	3/23/19	52	Blindspotting	7.4	Carlos López...	Rafael Casal	3/22/19
28	Cold War	7.7	Pawel Pawlikowski	Pawel Pawlikowski	3/23/19	52	Blindspotting	7.4	Carlos López...	Janina Gavankar	3/22/19
28	Cold War	7.7	Pawel Pawlikowski	Joanna Kulig	3/23/19	52	Blindspotting	7.4	Carlos López...	Carlos López Est...	3/23/19
28	Cold War	7.7	Pawel Pawlikowski	Tomasz Kot	3/23/19	52	Blindspotting	7.4	Carlos López...	Daveed Diggs	3/23/19
28	Cold War	7.7	Pawel Pawlikowski	Borys Szyc	3/23/19	52	Blindspotting	7.4	Carlos López...	Rafael Casal	3/23/19
28	Cold War	7.7	Pawel Pawlikowski	Janina Gavankar	3/23/19	52	Blindspotting	7.4	Carlos López...	Janina Gavankar	3/23/19

Stored Producers 9: Show movie name and the director for the movies where imdb ratings >8

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_9`()
BEGIN
SELECT movies.movie_id,movies.movie_names,m_ratings.imdb_ratings,director.director_name
FROM (movies
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
INNER JOIN m_director ON m_director.movie_id=movies.movie_id
INNER JOIN director ON director.director_id=m_director.director_id
INNER JOIN m_actor ON m_actor.movie_id=movies.movie_id
INNER JOIN actor ON actor.actor_id=m_actor.actor_id
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON user_insta.User_ID=insta_post.User_ID)
where user_insta.Date>3/21/19
;
END

```

```

INNER JOIN director ON director.director_id=m_director.director_id)
where m_ratings.imdb_ratings > 8 limit 5;
END

```

movie_id	movie_names	imdb_ratings	director_name
1	Bohemian Rhapsody	8.1	Bryan Singer
2	Green Book	8.3	Peter Farrelly
5	Spider-Man: Into the Spider-Verse	8.6	Bob Persichetti
11	Avengers: Infinity War	8.5	Anthony Russo
21	Gully Boy	8.5	Zoya Akhtar

#### Stored Procedures 10: Show the movie producer for the movie which were released in 2018

```

CREATE DEFINER=`root`@`localhost` PROCEDURE `sp_10`()
BEGIN
SELECT movies.movie_names, twitter_movies.Producers, m_ratings.year_release
from (movies
INNER JOIN twitter_movies ON twitter_movies.movie_id=movies.movie_id
INNER JOIN m_ratings ON m_ratings.movie_id=movies.movie_id
)
where m_ratings.year_release=2018;

```

END

movie_names	Producers	year_release
Bohemian Rhapsody	20th Century Fox	2018
Bohemian Rhapsody	20th Century Fox	2018
Bohemian Rhapsody	20th Century Fox	2018
Bohemian Rhapsody	20th Century Fox	2018
Bohemian Rhapsody	20th Century Fox	2018
A Star Is Born	Warner Bros. Pictures	2018
A Star Is Born	Warner Bros. Pictures	2018
A Star Is Born	Warner Bros. Pictures	2018
A Star Is Born	Warner Bros. Pictures	2018
Roma	Paramount Pics	2018
Roma	Paramount Pics	2018
Roma	Paramount Pics	2018
Black Panther	Marvel Studios	2018
Ready Player One	Warner Bros. Pictures	2018

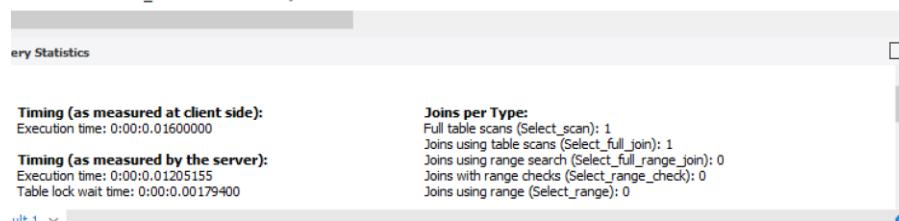
## INDEX:

Index 1 : Show movies name, user id, caption, likes, posted date and posted time where likes >40

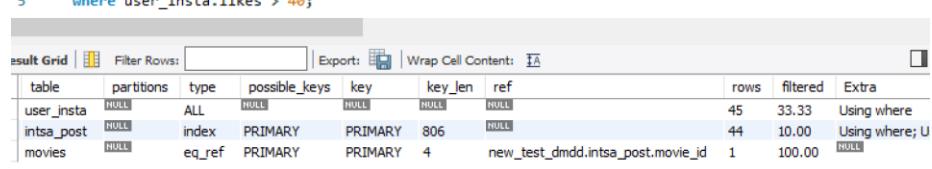
```
SELECT movies.movie_names  
,user_insta.User_ID,user_insta.Caption,user_insta.likes,user_insta.Date,user_insta.Time  
FROM (movies  
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id  
INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)  
where user_insta.likes > 40;
```

Before indexing:

```
1 •  SELECT movies.movie_names ,user_insta.User_ID,user_insta.Caption,user_insta.likes,user_insta.Date,user  
2   FROM (movies  
3     INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id  
4     INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)  
5   where user_insta.likes > 40;
```



```
1 •  explain SELECT movies.movie_names ,user_insta.User_ID,user_insta.Caption,user_insta.likes,user_insta.Date,user_insta.Time  
2   FROM (movies  
3     INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id  
4     INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)  
5   where user_insta.likes > 40;
```



After Adding an index to likes from User\_insta:

```
ALTER TABLE `user_insta` ADD INDEX `likes` (`likes`)
```

```

1 • explain SELECT movies.movie_names ,user_insta.User_ID,user_insta.Caption,user_insta.likes,user_insta.
2   FROM (movies
3     INNER JOIN intsa_post ON intsa_post.movie_id=movies.movie_id
4     INNER JOIN user_insta ON intsa_post.User_ID=user_insta.User_ID)
5   where user_insta.likes > 40;

```

Result Grid | Filter Rows: [ ] Export: [ ] Wrap Cell Content: [ ]

	id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filter
1	SIMPLE	user_insta	HULL		range	likes	likes	5	NULL	2	100
1	SIMPLE	intsa_post	HULL		index	PRIMARY	PRIMARY	806	NULL	44	10.0
1	SIMPLE	movies	HULL		eq_ref	PRIMARY	PRIMARY	4	new_test_dmdd.intsa_post.movie_id	1	100

The number of rows searched has reduced from 45 to 2.

INDEX 2: Show movies name, user id, caption, likes, posted date and posted time where likes >40

```

SELECT movies.movie_names
, user_insta.User_ID, user_insta.Caption, user_insta.likes, user_insta.Date, user_insta.Time
FROM (movies
INNER JOIN insta_post ON insta_post.movie_id=movies.movie_id
INNER JOIN user_insta ON insta_post.User_ID=user_insta.User_ID)
where user_insta.likes > 40;

```

Before indexing:

```

1 • explain SELECT movies.movie_names ,user_insta.User_ID,user_insta.Caption,user_insta.likes,user_insta.Date,
2   FROM (movies
3     INNER JOIN intsa_post ON intsa_post.movie_id=movies.movie_id
4     INNER JOIN user_insta ON intsa_post.User_ID=user_insta.User_ID)
5   where user_insta.likes > 40;

```

Result Grid | Filter Rows: [ ] Export: [ ] Wrap Cell Content: [ ]

	id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filter
1	SIMPLE	user_insta	HULL		range	likes	likes	5	NULL	2	100
1	SIMPLE	intsa_post	HULL		index	PRIMARY	PRIMARY	806	NULL	44	10.0
1	SIMPLE	movies	HULL		eq_ref	PRIMARY	PRIMARY	4	new_test_dmdd.intsa_post.movie_id	1	100

Result 1 | Read Only

After Indexing:

```
create index name on intsa_post(User_ID);
```

SQL File 15\* user\_insta intsa\_post intsa\_post - Table

```
1 • explain SELECT movies.movie_names ,user_insta.User_ID,user_insta.Caption,user_insta.likes,user_insta.Date,
2   FROM (movies
3   INNER JOIN intsa_post ON intsa_post.movie_id=movies.movie_id
4   INNER JOIN user_insta ON intsa_post.User_ID=user_insta.User_ID)
5   where user_insta.likes > 40;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid | Form Editor | Read Only

	id	select_type	table	partitions	type	possible_keys	key	key_len	ref	rows	filtered
▶	1	SIMPLE	user_insta	NULL	range	likes	likes	5	NULL	2	10
	1	SIMPLE	intsa_post	NULL	ref	PRIMARY,name	name	482	new_test_dmdd.user_insta.User_ID	1	10
	1	SIMPLE	movies	NULL	eq_ref	PRIMARY	PRIMARY	4	new_test_dmdd.intsa_post.movie_id	1	10

Result 2 | Read Only

SQL File 15\* user\_insta intsa\_post intsa\_post - Table

```
1 • explain SELECT movies.movie_names,actor.star_cast
2   FROM (m_actor
3   INNER JOIN movies ON m_actor.movie_id=movies.movie_id
4   INNER JOIN actor ON m_actor.actor_id=actor.actor_id)
5   where movie_names='Green Book' or movie_names='Gully Boy';
```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid | Form Editor | Read Only

	id	partitions	type	possible_keys	key	key_len	ref	rows	filtered	Extra
▶	es	NULL	range	PRIMARY,movie_name	movie_name	1023	NULL	2	100.00	Using where
	ctor	NULL	ref	PRIMARY,movie_id	movie_id	4	new_test_dmdd.movies.movie_id	4	100.00	Using index
	ctor	NULL	eq_ref	PRIMARY	PRIMARY	4	new_test_dmdd.m_actor.actor_id	1	100.00	NULL

Result 1 | Read Only

## Functions:

Function1:

```
CREATE DEFINER='root'@'localhost' FUNCTION `f_1`(ratings double) RETURNS text CHARSET utf8mb4
    DETERMINISTIC
BEGIN
declare r text;
    if ratings< 5 then
        set r='bad';
    elseif ratings >5 and ratings < 8 then
        set r='average';
    else
        set r='good';
    end if;

return(r);
END
```

```
1 •   select movie_id, f_1(imdb_ratings) from m_ratings;
2
```

100% ▾ 1:2

Result Grid Filter Rows:  Search Export:

movie_id	f_1(imdb_ratings)
3	average
4	average
5	good
6	average
7	average
8	average
9	average
10	average
11	good
12	average
13	average
14	average
15	average
16	average
17	average
18	average
19	average
20	average
21	good
22	average
23	average
24	average
25	average
26	average
27	good
28	average
29	average

## Function2:

```

CREATE DEFINER='root'@'localhost' FUNCTION `f_2`(likes int) RETURNS text CHARSET utf8mb4
  DETERMINISTIC
BEGIN
declare i text;
if likes< 50 then
    set i='least liked ';
elseif likes>50 then
    set i='most liked';
end if;

return(i);
END

```

1 • `Select User_id, Caption, f_2(Likes) from user_insta;`

100% 78:1

**Result Grid** Filter Rows: Search Export:

User_id	Caption	f_2(Likes)
trinececelia	#movienight 🎬🍿🎭 #greenbook	least liked
rosa.rosah	Dia lindo , de Cinema #Greenbook. #cinema C...	least liked
gagasedits	[ #ladygaga #bradleycooper #astarisborn #moth...	least liked
marieetlara	Shallow 🌟 - @ladygaga et bradley cooper Ce...	least liked
nestorneu	Bic. The favourite. Rachel . #inkdrawing #artists...	least liked
dk_esq	#thefavourite #moviequotes #moviescenes #mo...	least liked
itsfrankfu	Trying to recreate that scene in "The Favourite"...	most liked
pic_n_flix	Instant Family (2019) 6/10 🍀❤️ Three kids fin...	least liked
belanatorsportugal	[tags:] #isabelamonerfan #isabelamoner #isabel...	least liked
isabela4you	This is my first Selfmade Video. I know this is n...	least liked
frankemais	#brindisi #roma #caputmundi #stazione #stazio...	least liked
_lucagiordano_	"Non possiamo diventare ciò che vogliamo esse...	least liked
larrayajavier91	Todo depende del punto de vista ;) #roma #post...	least liked
heavy.rainy_	"And should this be the last thing I see? I want y...	least liked
shweta_mohanty	#architectural #marvel :::::::::::::::#sun...	least liked
conceitopescostecosta	Roma ama e non perdonna. #conceitopescostecosta	least liked
post_repost	La imposibilidad está a un beso de la realidad. ....	least liked
heofmanyfaces	From #darkness you #came , and #back into da...	least liked
van_o	@livrariawook entrega em menos de 24h, porte...	least liked
cinemateca_blog	Climax (Gaspar Noé, 2018) ... #gasparnoe #cli...	least liked
mushtaqhocane	#mushtaqhocane #student #simple #pink #gully...	least liked
momspresso	#MomVlogs #Filmy Video Challenge 🎥 Aala Re...	least liked
aneeqbukhari_	Ek pal bi baras lagte ❤️ . #duniya #lukkachuppi...	least liked
aneeqbukhari_	dil sambhal jaa zara ♠ . #murder2 #tseries #dil...	least liked
cpg_insanetrips	#ukraine #icbm #coldwar #formerussr #topgear...	least liked
patrycjagryciuk	Zimna Wojna tym razem w domu. Kocham ten fi...	least liked
nissarana	#towerblock #housing #architecture #architravel...	least liked

### Function3:

```
CREATE DEFINER='root'@'localhost' FUNCTION `f_3`(votes int) RETURNS text CHARSET utf8mb4
    DETERMINISTIC
BEGIN
declare v text;
if votes< 10000 then
    set v='least';
elseif votes >10000 and votes < 15000 then
    set v='average';
else
set v='most';
end if;

return(v);
END
```

```
1 • select m_ratings.movie_id, f_3(m_ratings.votes) as result, movies.movie_names
2   from (movies
3   inner join m_ratings on m_ratings.movie_id=movies.movie_id)
```

100% 108:2

Result Grid Filter Rows: Search Export:

movie_id	result	movie_names
1	most	Bohemian Rhapsody
2	most	Green Book
3	most	Alita: Battle Angel
4	most	A Star Is Born
5	most	Spider-Man: Into the Spider-Verse
6	most	The Favourite
7	most	How to Train Your Dragon: The Hidden World
8	least	Fighting with My Family
9	most	Instant Family
10	most	BlacKKKlansman
11	most	Avengers: Infinity War
12	most	Roma
13	most	Creed II
14	least	The Boy Who Harnessed the Wind
15	most	Black Panther
16	most	Deadpool 2
17	most	First Man
18	most	Heredity
19	most	The Ballad of Buster Scruggs
20	most	Climax
21	average	Gully Boy
22	most	If Beale Street Could Talk
23	most	Incredibles 2
24	most	Ready Player One
25	most	A Quiet Place
26	most	Christopher Robin
27	average	Capharnaum

Function4:

```
CREATE DEFINER='root'@'localhost' FUNCTION `f_4`(followers int) RETURNS text CHARSET utf8mb4
DETERMINISTIC
BEGIN
declare i text;
if followers< 10000000 then
    set i='least followers';
else
    set i='most followers';
end if;

return(i);
END
```

```
1 • select Producers, f_4(Followers) as Followed from twitter_movies;
```

100% 81:1

Result Grid Filter Rows: Search Export:

Producers	Followed
20th Century Fox	least followers
Warner Bros. Pictures	least followers
Paramount Pics	most followers
Paramount Pics	most followers
Paramount Pics	most followers
Marvel Studios	least followers
Warner Bros. Pictures	least followers

Function5:

```
CREATE DEFINER='root'@'localhost' FUNCTION `f_5`(year int) RETURNS text CHARSET utf8mb4
DETERMINISTIC
BEGIN
declare t text;
if year= 2018 then
    set t='old ';
else
    set t='recent ';
end if;

return(t);
END
```

1 • select movie\_id, f\_5(year\_release) as time\_line from m\_ratings

The screenshot shows a MySQL query results grid. The top bar includes zoom levels (100%, 83%), a search field, and export options. The results grid has two columns: 'movie\_id' and 'time\_line'. The data consists of 27 rows, each starting with a number (1 through 27) followed by either 'old' or 'recent'. The 'time\_line' column contains the following values: old, old, recent, old, old, old, recent, recent, old, old, old, old, old, old, recent, old, old.

movie_id	time_line
1	old
2	old
3	recent
4	old
5	old
6	old
7	recent
8	recent
9	old
10	old
11	old
12	old
13	old
14	recent
15	old
16	old
17	old
18	old
19	old
20	old
21	recent
22	old
23	old
24	old
25	old
26	old
27	old

# Contributions

Purvang worked on the creating views for all the Use cases.

Ira worked on creating the Functions and Indexes.

Both the authors worked on Normalizing the databases and writing Stored Procedures.

Both the authors discussed the results and contributed to the final report

.

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