



KATHMANDU UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DATABASE MANAGEMENT SYSTEM  
COMP232

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Lab 3 Report

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February 26, 2022

## Update the tables to add primary and foreign key constraints

```
ALTER table actors add primary key (id);

ALTER table directors add primary key (id);

ALTER table movies add primary key (id);

alter table roles add primary key (id);

alter table movies_directors
add foreign key (movie_id) REFERENCES movies(id);

alter table movies_directors
add foreign key (director_id) references directors (id);

ALTER table roles
add foreign key (movie_id) references movies (id) ,
add foreign key (actor_id) references actors (id);

ALTER table directors_genres
add foreign key directors_genres (director_id) references directors (id);

ALTER table movies_genres
add foreign key movies_genres (movie_id) references movies (id) ;
```

## Remove Film\_\_count from actors table

```
alter table actors
drop column film_count;
```

## Write SQL query for the following

Find the number of actors, movies, genres and directors

```
/* 1 */
select (select count(*) from movies) as movie_count,
(select count(*) from actors) as ac,
(select count(DISTINCT genre) from directors_genres dg ) as dgc,
(select count(DISTINCT genre) from movies_genres mg ) as mgc,
(select count(*) from directors) as dc;
```

mc	ac	dc	mgc	dc
36	1907	19	16	34

Find the full name, and role of all the actors who played in Titanic.

```

/* 2 */
select
  m.name,
  a.first_name,
  a.last_name,
  r.role
from
  roles as r
inner join actors as a on
  a.id = r.actor_id
inner join movies as m on
  m.id = r.movie_id
where
  m.name like 'Titanic';

```

name	first_name	last_name	role
Titanic	Lewis	Abernathy	Lewis Bodine
Titanic	Seth (I)	Adkins	Slovakian three-year-old boy
Titanic	Scott G.	Anderson	Lookout Fredrick Fleet
Titanic	Kris	Andersson	Steerage dancer
Titanic	Richard (II)	Ashton	Carpenter John Hutchinson

Find the number of movies in all genres.

```

/* 3 */
select mg.genre, count(m.name) as movies_on_that_genre
from movies as m inner join movies_genres as mg
on mg.movie_id=m.id
group by mg.genre;

```

genre	movies_on_that_genre
Action	8
Adventure	5
Animation	2
Comedy	11
Crime	12
Drama	17
Family	3
Fantasy	5
Horror	3
Music	1
Musical	1

genre	movies_on_that_genre
Mystery	6
Romance	5
Sci-Fi	6
Thriller	17
War	1

Find the average number of movies played by actors

```
/* 4 */
select avg(t.number_of_movies_played) from (select
  r.actor_id,
  count(r.movie_id) as number_of_movies_played
from
  roles as r
group by
  r.actor_id) as t;
```

avg(t.number of movies played)
1.043

Find the average number of actors in a movie

```
/* 5 */
select avg(t.number_of_actors) from (
select r.movie_id, count(r.actor_id) as number_of_actors from roles as r
group by r.movie_id) as t;
```

avg(t.number_of_actors)
55.25

Find top 5 movies based on the rank.

```
/* 6 */
select * from movies order by rank DESC limit 5;
```

id	name	year	rank
297838	Shawshank Redemption, The	1994	9.0
130128	Godfather, The	1972	9.0
313459	Star Wars	1977	8.8
267038	Pulp Fiction	1994	8.7

id	name	year	rank
210511	Memento	2000	8.7

Find 20 directors who have directed at least 2 movies

```
/* 7 */
```

```
select d.id,concat(d.first_name, " ", d.last_name) as name, count(md.movie_id) as number_of_
inner join directors d on d.id=md.director_id
group by md.director_id
order by number_of_movies_directed DESC limit 20;
```

id	name	number_of_movies_directed
78273	Quentin Tarantino	4
15093	Joel Coen	2
58201	Christopher Nolan	2
15092	Ethan Coen	2
11652	James (I) Cameron	2
2931	Darren Aronofsky	1
38746	Mike (I) Judge	1
88802	Unknown Director	1
15906	Sofia Coppola	1
65940	Rob Reiner	1
35838	John (I) Hughes	1
83616	Andy Wachowski	1
56332	John Musker	1
28395	Mel (I) Gibson	1
14927	Ron Clements	1
46315	Jay Levey	1
22104	Clint Eastwood	1
74758	Steven Soderbergh	1
9247	Zach Braff	1
41975	David Koepp	1

Find all movies played by Kevin Bacon.

```
/* 8 */
```

```
select a.first_name,a.last_name,m.name from roles as r
inner join actors as a on r.actor_id = a.id
inner join movies m on m.id=r.movie_id
where a.first_name LIKE 'Kevin' AND a.last_name Like 'Bacon';
```

first_name	last_name	name
Kevin	Bacon	Animal House
Kevin	Bacon	Apollo 13
Kevin	Bacon	Few Good Men, A
Kevin	Bacon	Footloose
Kevin	Bacon	Hollow Man
Kevin	Bacon	JFK
Kevin	Bacon	Mystic River
Kevin	Bacon	Planes, Trains & Automobiles
Kevin	Bacon	Stir of Echoes

**Find all movies released from 1990 to 2000.**

```
/* 9 */
select * from movies m where m.year >= 1990 and m.year < 2000;
```

id	name	year	rank
18979	Apollo 13	1995	7.5
46169	Braveheart	1995	8.3
109093	Fargo	1996	8.2
111813	Few Good Men, A	1992	7.5
112290	Fight Club	1999	8.5
167324	JFK	1991	7.8
207992	Matrix, The	1999	8.5
238695	Office Space	1999	7.6
254943	Pi	1998	7.5
267038	Pulp Fiction	1994	8.7
276217	Reservoir Dogs	1992	8.3
297838	Shawshank Redemption, The	1994	9.0
314965	Stir of Echoes	1999	7.0
333856	Titanic	1997	6.9