

DATABASE imdb_small

Relational model:

ACTORS (id, first_name, last_name, gender)

DIRECTORS (id, first_name, last_name)

MOVIES (id, name, year, rank)

MOVIES_DIRECTORS (director_id*, movie_id*)

MOVIES_GENRES (movie_id*, genre)

ROLES (actor_id*, movie_id*, role)

id	name	year	rank
112290	Fight Club	1999	8.5
209658	Meet the Parents	2000	7
210511	Memento	2000	8.7
...			

movies

actor_id	movie_id	role
433259	313398	Capt. James T. Kirk
433259	407323	Sgt. T.J. Hooker
797926	342189	Herself
...		

roles

id	first_name	last_name	gender
433259	William	Shatner	M
797926	Britney	Spears	F
831289	Sigourney	Weaver	F
...			

actors

director_id	movie_id
24758	112290
66965	209658
72723	313398
...	

movies_directors

id	first_name	last_name
24758	David	Fincher
66965	Jay	Roach
72723	William	Shatner
...		

directors

movie_id	genre
209658	Comedy
313398	Action
313398	Sci-Fi
...	

movies_genres

Link to download the database [here](#).

NOTES:

- I would create a table for genres...
- The exercises are not sorted by order of difficulty...

1.- Data of all the actors with the surname 'Willis'.

SELECT *

FROM actors

WHERE last_name = 'Willis';

id	first_name	last_name	gender
512541	Bruce	Willis	M
512626	Phillip L.	Willis	M
836217	Rosemary	Willis	F
836222	Susan	Willis	F

4 rows in set (0.000 sec)

2. Code and title of the movies that in its title there are some of the following words: "kill", "pirates", "war", "man". Order the result by movie title.

```
SELECT *  
FROM movies  
WHERE name like '%KILL%'  
OR name like '%Pirates%'  
OR name like '%War%'  
OR name like '%Man%';
```

id	name
147603	Hollow Man
176711	Kill Bill: Vol. 1
176712	Kill Bill: Vol. 2
256630	Pirates of the Caribbean
313459	Star Wars

5 rows in set (0.001 sec)

3. Title of films directed by Ethan Coen order by title.

```
SELECT m.name  
FROM movies M,  
directors D,  
movies_directors MD  
WHERE M.id = MD.movie_id  
AND D.id = MD.director_id  
AND D.first_name = 'Ethan'  
AND D.last_name = 'Coen'  
ORDER BY name;
```

name
Fargo
O Brother, Where Art Thou?

2 rows in set (0.001 sec)

4. Title and year of premiere of the movies directed by Ethan Coen after 1996 order by year.

```
SELECT M.name, M.year
FROM movies M,
     directors D,
     movies_directors MD
WHERE M.id = MD.movie_id
     AND D.id = MD.director_id
     AND D.first_name = 'Ethan'
     AND D.last_name = 'Coen'
     AND M.year > 1996
ORDER BY year;
```

```
+-----+-----+
| name                | year |
+-----+-----+
| O Brother, Where Art Thou? | 2000 |
+-----+-----+
1 row in set (0.002 sec)
```

5. Title and year of premiere of all those films that we do not know the director. order the results by film title (clue: NOT IN (subselect)).

```
SELECT M.id, M.name, M.year
FROM movies M
WHERE M.id not in (
    SELECT movies_directors.movie_id
    FROM movies_directors)
ORDER BY name;
```

```
+-----+-----+-----+
| id    | name                | year |
+-----+-----+-----+
| 256630 | Pirates of the Caribbean | 2003 |
+-----+-----+-----+
1 row in set (0.001 sec)
```

6. Name of the director, premiere year and full name and roles of the actors in the movie "Lost in Translation".

```
SELECT concat(directors.first_name,' ',directors.last_name) as director_name, movies.name
as movie_title, movies.year, concat(actors.first_name,' ',actors.last_name) as actor_name,
role
```

```
FROM directors,actors,movies,roles,movies_directors
```

```
WHERE directors.id = movies_directors.director_id
```

```
AND movies.id = movies_directors.movie_id
```

```
AND actors.id = roles.actor_id
```

```
AND roles.movie_id = movies.id
```

```
AND movies.name = 'Lost in Translation';
```

director_name	movie_title	year	actor_name	role
Sofia Coppola	Lost in Translation	2003	Akiko Monou	P Chan
Sofia Coppola	Lost in Translation	2003	Akiko Takeshita	Ms. Kawasaki
Sofia Coppola	Lost in Translation	2003	Akimitsu Naruyama	French Japanese Nightclub Pat
Sofia Coppola	Lost in Translation	2003	Akira (II) Yamaguchi	Bellboy
Sofia Coppola	Lost in Translation	2003	Akira Motomura	Old Man
Sofia Coppola	Lost in Translation	2003	Anna Faris	Kelly
Sofia Coppola	Lost in Translation	2003	Asuka Shimuzu	Kelly's Translator
Sofia Coppola	Lost in Translation	2003	Bill (I) Murray	Bob Harris
Sofia Coppola	Lost in Translation	2003	Catherine (II) Lambert	Jazz Singer
Sofia Coppola	Lost in Translation	2003	Diamond Yukai	Commercial Director
Sofia Coppola	Lost in Translation	2003	Diedrich Bollman	German Hotel Guest
Sofia Coppola	Lost in Translation	2003	François du Bois	Sausalito Piano
Sofia Coppola	Lost in Translation	2003	Fumihiko Hayashi	Charlie
Sofia Coppola	Lost in Translation	2003	Georg O.P. Eschert	German Hotel Guest
Sofia Coppola	Lost in Translation	2003	Giovanni Ribisi	John
Sofia Coppola	Lost in Translation	2003	Gregory Pekar	American Businessman #1
Sofia Coppola	Lost in Translation	2003	Hiroko Kawasaki	Hiroko
Sofia Coppola	Lost in Translation	2003	Hiroshi (I) Kawashima	Bartender, Nightclub
Sofia Coppola	Lost in Translation	2003	Hugo Codaro	Aerobics Instructor
Sofia Coppola	Lost in Translation	2003	Ikuko Takahashi	Ikebana Instructor
Sofia Coppola	Lost in Translation	2003	Julliet Akinyi	Hans
Sofia Coppola	Lost in Translation	2003	Jun Maki	Suntory Client
Sofia Coppola	Lost in Translation	2003	Kanako Nakazato	Make-Up Person
Sofia Coppola	Lost in Translation	2003	Kazuko (I) Shibata	Press Agent
Sofia Coppola	Lost in Translation	2003	Kazuo Yamada	Hospital Receptionist
Sofia Coppola	Lost in Translation	2003	Kazuyoshi Minamimagoe	Press Agent
Sofia Coppola	Lost in Translation	2003	Kei Takyo	TV Translator
Sofia Coppola	Lost in Translation	2003	Koichi (I) Tanaka	Bartender, NY Bar
Sofia Coppola	Lost in Translation	2003	Kunichi Nomura	Kun
Sofia Coppola	Lost in Translation	2003	Lisle Wilkerson	Sexy Businesswoman
Sofia Coppola	Lost in Translation	2003	Mark Willms	Carl West
Sofia Coppola	Lost in Translation	2003	Nancy (I) Steiner	Lydia Harris
Sofia Coppola	Lost in Translation	2003	Nao Asuka	Premium Fantasy Woman
Sofia Coppola	Lost in Translation	2003	Nao Kitman	Nao
Sofia Coppola	Lost in Translation	2003	Nobuhiko Kitamura	Nobu
Sofia Coppola	Lost in Translation	2003	Noguchi Takayuki	Press Agent
Sofia Coppola	Lost in Translation	2003	Osamu Shigematu	Doctor
Sofia Coppola	Lost in Translation	2003	Richard (XV) Allen	American Businessman #2
Sofia Coppola	Lost in Translation	2003	Ryo Kondo	Politician
Sofia Coppola	Lost in Translation	2003	Ryuichiro Baba	Concierge
Sofia Coppola	Lost in Translation	2003	Scarlett Johansson	Charlotte
Sofia Coppola	Lost in Translation	2003	Shigekazu Aida	Mr. Valentine
Sofia Coppola	Lost in Translation	2003	Takashi (I) Fujii	TV Host
Sofia Coppola	Lost in Translation	2003	Tetsuro Naka	Stills Photographer
Sofia Coppola	Lost in Translation	2003	Tim Leffman	Sausalito Guitar
Sofia Coppola	Lost in Translation	2003	Toshikawa Hiromi	Hiromix
Sofia Coppola	Lost in Translation	2003	Yasuhiko Hattori	Charlie's Friend
Sofia Coppola	Lost in Translation	2003	Yû Daiki	Bamie
Sofia Coppola	Lost in Translation	2003	Yuji Okabe	Politician's Aide
Sofia Coppola	Lost in Translation	2003	Yumi Ikeda	Politician's Aide
Sofia Coppola	Lost in Translation	2003	Yumika Saki	Politician's Aide

51 rows in set (0.003 sec)

7. Title of the film, premiere year and full name of the director of all those films in which the director is also an actor in their own films. Sort the results by artist name.

```
SELECT m.name as movie_title, year, concat(a.first_name, ' ', a.last_name) as artist_name
FROM movies m, directors d, actors a, movies_directors md, roles r
WHERE m.id = md.movie_id
      AND d.id = md.director_id
      AND a.id = r.actor_id
      AND r.movie_id = m.id
      AND d.first_name = a.first_name
      AND d.last_name = a.last_name
ORDER BY artist_name;
```

movie_title	year	artist_name
Shrek	2001	Andrew Adamson
Snatch.	2000	Guy Ritchie
Titanic	1997	James (I) Cameron
UHF	1989	Jay Levey
Braveheart	1995	Mel (I) Gibson
Office Space	1999	Mike (I) Judge
Pulp Fiction	1994	Quentin Tarantino
Reservoir Dogs	1992	Quentin Tarantino
Ocean's Eleven	2001	Steven Soderbergh
Garden State	2004	Zach Braff

10 rows in set (0.030 sec)

8. Name of the actors with whom Uma Thurman worked. Also indicate the full name and the year of the premiere of the film. Order the results by movie name and actor full name. Obviously, Uma Thurman must not be in the results.

```
SELECT concat(a.first_name, ' ', a.last_name) as actor_name, m.name, m.year
FROM movies m,
     actors a,
     roles r
WHERE a.id = r.actor_id
AND r.movie_id = m.id
AND r.actor_id not in (
    SELECT actors.id
    FROM actors
    WHERE actors.first_name = 'Uma'
      AND actors.last_name = 'Thurman')
AND r.movie_id in (
    SELECT roles.movie_id
    FROM roles
    WHERE roles.actor_id in (
        SELECT actors.id
        FROM actors
        WHERE actors.first_name = 'Uma'
          AND actors.last_name = 'Thurman'))
ORDER BY m.name, actor_name;
```

actor_name	movie_title	year
Ai (III) Maeda	Kill Bill: Vol. 1	2003
Akaji Maro	Kill Bill: Vol. 1	2003
Ambrosia Kelley	Kill Bill: Vol. 1	2003
Chia Hui Liu	Kill Bill: Vol. 1	2003
Chiaki Kuriyama	Kill Bill: Vol. 1	2003
Christopher Allen Nelson	Kill Bill: Vol. 1	2003
Daryl Hannah	Kill Bill: Vol. 1	2003
David Carradine	Kill Bill: Vol. 1	2003
Goro Daimon	Kill Bill: Vol. 1	2003
Hikaru Midorikawa	Kill Bill: Vol. 1	2003
Issei Takahashi	Kill Bill: Vol. 1	2003
James Parks	Kill Bill: Vol. 1	2003
Jonathan Loughran	Kill Bill: Vol. 1	2003
Julie Dreyfus	Kill Bill: Vol. 1	2003
Julie Manase	Kill Bill: Vol. 1	2003
Jun Kunimura	Kill Bill: Vol. 1	2003
Kazuki Kitamura	Kill Bill: Vol. 1	2003
Kenji Ohba	Kill Bill: Vol. 1	2003
Lucy Liu	Kill Bill: Vol. 1	2003
Michael (I) Bowen	Kill Bill: Vol. 1	2003
Michael (I) Madsen	Kill Bill: Vol. 1	2003
Michael (I) Parks	Kill Bill: Vol. 1	2003
Michael Kuroiwa	Kill Bill: Vol. 1	2003
Naomi Kusumi	Kill Bill: Vol. 1	2003
Ronnie Yoshiko Fujiyama	Kill Bill: Vol. 1	2003
Sachiko Fujii	Kill Bill: Vol. 1	2003
Sakichi Satō	Kill Bill: Vol. 1	2003
Satoshi Yamanaka	Kill Bill: Vol. 1	2003
Shu Lan Tuan	Kill Bill: Vol. 1	2003
Shun Sugata	Kill Bill: Vol. 1	2003
Sonny Chiba	Kill Bill: Vol. 1	2003
Stevo Polyi	Kill Bill: Vol. 1	2003
Tetsuro Shimaguchi	Kill Bill: Vol. 1	2003
Vivica A. Fox	Kill Bill: Vol. 1	2003
Xiaohui Hu	Kill Bill: Vol. 1	2003
Yoji Tanaka	Kill Bill: Vol. 1	2003
Yoshiko Yamaguchi	Kill Bill: Vol. 1	2003
Yoshiyuki Morishita	Kill Bill: Vol. 1	2003
Yuki Kazamatsuri	Kill Bill: Vol. 1	2003
Zhang Jin Zhan	Kill Bill: Vol. 1	2003
Al Manuel Douglas	Kill Bill: Vol. 2	2004
Bo Svenson	Kill Bill: Vol. 2	2004
Caitlin Keats	Kill Bill: Vol. 2	2004
Chia Hui Liu	Kill Bill: Vol. 2	2004
Christopher Allen Nelson	Kill Bill: Vol. 2	2004
Citlali Guadalupe Bojorquez	Kill Bill: Vol. 2	2004
Claire Smithies	Kill Bill: Vol. 2	2004
Clark Middleton	Kill Bill: Vol. 2	2004
Daryl Hannah	Kill Bill: Vol. 2	2004
David Carradine	Kill Bill: Vol. 2	2004
Graciela Salazar Mendoza	Kill Bill: Vol. 2	2004
Helen (IV) Kim	Kill Bill: Vol. 2	2004
Jeannie Epper	Kill Bill: Vol. 2	2004
Jorge (II) Silva	Kill Bill: Vol. 2	2004
Larry Bishop	Kill Bill: Vol. 2	2004
Laura Cayouette	Kill Bill: Vol. 2	2004
Lucia Cruz Marroquin	Kill Bill: Vol. 2	2004
Lucy Liu	Kill Bill: Vol. 2	2004
Maria de Lourdes Lombara	Kill Bill: Vol. 2	2004
Maria Del Rosario Gutiérrez	Kill Bill: Vol. 2	2004
Michael (I) Madsen	Kill Bill: Vol. 2	2004
Michael (I) Parks	Kill Bill: Vol. 2	2004
Patricia Silva	Kill Bill: Vol. 2	2004
Perla Haney-Jardine	Kill Bill: Vol. 2	2004
Reda Beebe	Kill Bill: Vol. 2	2004
Samuel L. Jackson	Kill Bill: Vol. 2	2004
Shana Stein	Kill Bill: Vol. 2	2004
Sid Haig	Kill Bill: Vol. 2	2004
Sonia Angelica Padilla Curiel	Kill Bill: Vol. 2	2004
Stephanie L. Moore	Kill Bill: Vol. 2	2004
Stevo Polyi	Kill Bill: Vol. 2	2004
Thea Rose	Kill Bill: Vol. 2	2004
Venessia Valentino	Kill Bill: Vol. 2	2004
Veronica Janet Martinez	Kill Bill: Vol. 2	2004
Vicki Lucai	Kill Bill: Vol. 2	2004
Vivica A. Fox	Kill Bill: Vol. 2	2004
William Paul Clark	Kill Bill: Vol. 2	2004
Alexis Arquette	Pulp Fiction	1994
Amanda Plummer	Pulp Fiction	1994
Angela (I) Jones	Pulp Fiction	1994
Ani Sava	Pulp Fiction	1994
Brad (I) Parker	Pulp Fiction	1994
Brenda Hillhouse	Pulp Fiction	1994
Bronagh Gallagher	Pulp Fiction	1994
Bruce Willis	Pulp Fiction	1994
Burr Steers	Pulp Fiction	1994
Carl (I) Allen	Pulp Fiction	1994
Chandler Lindauer	Pulp Fiction	1994
Christopher Walken	Pulp Fiction	1994
Dick (I) Miller	Pulp Fiction	1994
Don Blakely	Pulp Fiction	1994
Duane Whitaker	Pulp Fiction	1994
Emil Sitka	Pulp Fiction	1994
Eric (I) Clark	Pulp Fiction	1994
Eric Stoltz	Pulp Fiction	1994
Frank Whaley	Pulp Fiction	1994
Gary Shorelle	Pulp Fiction	1994
Harvey Keitel	Pulp Fiction	1994
Jerome Patrick Hoban	Pulp Fiction	1994
John Travolta	Pulp Fiction	1994
Joseph Pilato	Pulp Fiction	1994
Julia Sweeney	Pulp Fiction	1994
Karen Maruyama	Pulp Fiction	1994
Kathy Griffin	Pulp Fiction	1994
Laura Lovelace	Pulp Fiction	1994
Lawrence Bender	Pulp Fiction	1994
Linda Kaye	Pulp Fiction	1994
Lorelei Leslie	Pulp Fiction	1994
Maria de Medeiros	Pulp Fiction	1994
Michael Gilden	Pulp Fiction	1994
Paul Calderon	Pulp Fiction	1994
Peter (I) Greene	Pulp Fiction	1994
Phil LaMarr	Pulp Fiction	1994
Quentin Tarantino	Pulp Fiction	1994
Rich Turner	Pulp Fiction	1994
Robert Ruth	Pulp Fiction	1994
Rosanna Arquette	Pulp Fiction	1994
Samuel L. Jackson	Pulp Fiction	1994
Stephen Hibbert	Pulp Fiction	1994
Steve Buscemi	Pulp Fiction	1994
Susan Griffiths	Pulp Fiction	1994
Sy Sher	Pulp Fiction	1994
Tim Roth	Pulp Fiction	1994
Venessia Valentino	Pulp Fiction	1994
Ving Rhames	Pulp Fiction	1994

125 rows in set (0.036 sec)

9. Name of the directors who have not been actors in their films, sorted by code.

director_name
Andy Wachowski
Cameron Crowe
Christopher Nolan
Clint Eastwood
Darren Aronofsky
David Fincher
David Koepp
Ethan Coen
Francis Ford Coppola
Frank Darabont
George Lucas
Herbert (I) Ross
Joel Coen
John (I) Hughes
John (I) Landis
John Musker
Larry Wachowski
Oliver (I) Stone
Paul (I) Verhoeven
Rob Reiner
Ron Clements
Ron Howard
Sofia Coppola
Vicky Jensen

24 rows in set (0.026 sec)

10. List of directors sorted by full name, indicating the number of films they have directed.

```
SELECT CONCAT(d.first_name, ' ', d.last_name) as director_name, count(*)
FROM directors d, movies_directors md, movies m
WHERE d.id = md.director_id
      AND m.id = md.movie_id
GROUP BY director_name
ORDER BY director_name;
```

director_name	count(*)
Andrew Adamson	1
Andy Wachowski	1
Cameron Crowe	1
Christopher Nolan	2
Clint Eastwood	1
Darren Aronofsky	1
David Fincher	1
David Koepp	1
Ethan Coen	2
Francis Ford Coppola	1
Frank Darabont	1
George Lucas	1
Guy Ritchie	1
Herbert (I) Ross	1
James (I) Cameron	2
Jay Levey	1
Joel Coen	2
John (I) Hughes	1
John (I) Landis	1
John Musker	1
Larry Wachowski	1
Mel (I) Gibson	1
Mike (I) Judge	1
Oliver (I) Stone	1
Paul (I) Verhoeven	1
Quentin Tarantino	4
Rob Reiner	1
Ron Clements	1
Ron Howard	1
Sofia Coppola	1
Steven Soderbergh	1
Vicky Jensen	1
Zach Braff	1

33 rows in set (0.001 sec)

11. List of actors with surname starting with a 'P', indicating the number of films in which they have participated ordered by the number of films descendent.

```
SELECT a.first_name, a.last_name, count(r.movie_id)
FROM movies m, roles r, actors a
WHERE m.id = r.movie_id
      AND a.id = r.actor_id
      AND a.last_name like 'P%'
GROUP BY a.id
ORDER BY count(r.movie_id) desc ;
```


first_name	last_name	count(R.movie_id)
Steveo	Polyi	3
Bill	Paxton	3
Brad	Pitt	3
David	Proval	2
Chris (I)	Penn	2
Michael (I)	Parks	2
Joe	Pantoliano	2
Timothy Paul	Perez	1
Rick	Petrucelli	1
Shaun	Pearson	1
Catherine	Porter	1
Anthony	Parrulli	1
Jane	Pratt	1
Natalie	Portman	1
Alibe	Parsons	1
James	Parks	1
Duncan	Putney	1
Mark	Pinter	1
Sarah Jessica	Parker	1
Amanda	Plummer	1
Pat	Perkins	1
Sean	Penn	1
John	Paragon	1
Brad (I)	Parker	1
Steve F.	Price Jr.	1
Connor	Paolo	1
Jonathan (I)	Phillips	1
J.T.	Pontino	1
Gary (I)	Palmer	1
David F.	Powers	1
Guy (I)	Pearce	1
Lew	Palter	1
Todd	Peirce	1
Justin	Possenti	1
Bill	Pickle	1
Antonio	Polk	1
Kevin	Pollak	1
Anthony Ray	Parker	1
Miguel (I)	Pérez	1
Marco	Perella	1
David	Prowse	1
Harve	Presnell	1
Gregory	Pekar	1
Robert (I)	Peters	1
Shah Mohammed Reza	Pahlavi	1
Lorne	Peterson	1
Robert	Peterson	1
Sonia Angelica	Padilla Curiel	1
Frank (III)	Patton	1
Al	Pacino	1
Clive	Pearse	1
Manley	Pope Jr.	1
Del	Pentecost	1
Ray	Proscia	1
Jim (II)	Parsons	1
Joe	Pecoraro	1
Alan	Polonsky	1
Beata	Pozniak	1
John	Pungitore	1
Emo	Philips	1
John	Perryman	1
Joseph	Pilato	1
Cheryl	Penland	1
Michael	Peavey	1
Judy	Prestininzi	1
Gene	Pack	1
George	Petrie	1
Francis Gary	Powers	1
T. Bruce	Page	1
Dan (I)	Pettersson	1
Stephen	Pearlman	1
Tony	Plana	1
Oliver	Page	1
J.A.	Preston	1
Janaya	Pender	1
Greg (II)	Pitts	1
Joe	Pesci	1
Jack	Purvis	1
Melissa	Peterman	1
Gary	Pike	1
Ted	Pennebaker	1
Marcus	Powell	1
Steve (I)	Park	1
Malachi	Pearson	1

84 rows in set (0.000 sec)

12. Do you think DIRECTORS and ACTORS should be the same table? Explain your answer.

We can consider that they should be the same table since they have the same values, except gender that could be added to directors since they are still people, and we would do it by giving it a combined name like DIRECTORS_AND_ACTORS

13. Having DIRECTORS and ACTORS separated in two tables, can we have inconsistent data?

If we can have inconsistent data since a director can be an actor too.