

CSC 370 — Database Systems
Fall 2018
Assignment No. 4

Note 1 **This assignment is to be done individually**

Note 2 Working with other people is prohibited.

- Due date: June 21, 2018, at the beginning of the class.
- This assignment is worth $\frac{4}{3}\%$ of your total course mark.
- Submit in paper your queries, and their corresponding relational algebra.
- Submit electronically the SQL queries in a single **text** file.

Objectives

After completing this assignment, you will have experience:

- Use cross products, joins, full joins.

Your task, should you choose to accept it

Answer the following questions, both in relational algebra, and SQL. **Relational algebra queries should match SQL**. For SQL queries provide the query and the result (if the result contains more than 10 rows, show only the first 10 and the **total number**). One query per question. Your query should only use the information provided in the question.

Remember, a production can be of different types. Use the field *attr* to determine the type of production (NULL for movies, *TV* for movies-made-for-TV (they are not considered movies in the queries below), *TV-series* for tv-shows, *TV-ep* for episodes of tv-shows, *V* for “videos” (I am not sure what this is) and *VG* for video games.

- 1 Game of Thrones has been filmed in many countries. In this query you will find out in which ones. TV series have the *attr* value equal to *TV-series*. List the **country** in which episodes of the the *TV series* with **title** *Game of Thrones* has been filmed. Hints: You need to relate productions to episodes using *episodeof*, and you will need to use locations for the countries where the episodes have been filmed. Episodes are productions, the table *episodes* links episodes with their “parent” production entry (*episodeof*).

country	

Canada	
Croatia	
Iceland	
Malta	
Morocco	
Northern Ireland	
Spain	
UK	
USA	

- 2 List the **title**, **year** and **rank** of movies (productions where attr is null) directed by the person with last-name *Hitchcock*, firstname *Alfred* and that have more than 50,000 votes. Hint: use table ratings.

title	year	rank
Rear Window	1954	8.5
Psycho	1960	8.5
North by Northwest	1959	8.4
Vertigo	1958	8.4
Rebecca	1940	8.2
Dial M for Murder	1954	8.2
Strangers on a Train	1951	8.1
Rope	1948	8
Notorious	1946	8
The Birds	1963	7.7

- 3 One of the great pairs in movie history is Paul Newman (pid *Newman, Paul (I)*) and Robert Redford (pid *Redford, Robert (I)*). For every movie in which both acted, and their character does not include the string *Himself* (use a regular expression comparison) list the **title** of the movie, its **year**, its ratings **rank** (from relation ratings), Paul's **character**, and **billing**, and Robert's **role**, and **billing**. Result contains 3 tuples.

title	year	rank	paulchar	paulbilling	robchar	robbilling
Butch Cassidy and the Sundance Kid	1969	8.1	Butch Cassidy	1	The Sundance Kid	2
Mickybo and Me	2004	7.3	Butch Cassidy		The Sundance Kid	
The Sting	1973	8.3	Henry Gondorff	1	Johnny Hooker	2

- 4 Four persons directed episodes of the TV series “*Hora Marcada*” (1986) and later directed movies in English. List the **pid** of the directors, the **id** and **rank** of the movies they directed in *English*. Make sure your result includes movies without a rank. Hint: use the relations languages and episodes.

pid	id	rank
Cuarón, Alfonso	Children of Men (2006)	7.9
Cuarón, Alfonso	Gravity (2013)	7.8
Cuarón, Alfonso	Harry Potter and the Prisoner of Azkaban (2004)	7.8
Cuarón, Alfonso	A Little Princess (1995)	7.7
Cuarón, Alfonso	Vengeance Is Mine (1983)	7.4
Cuarón, Alfonso	Paris, je t'aime (2006)	7.3
Cuarón, Alfonso	Sólo con tu pareja (1991)	7.1
del Toro, Guillermo	Hellboy II: The Golden Army (2008)	7
del Toro, Guillermo	Pacific Rim (2013)	7
Cuarón, Alfonso	Great Expectations (1998)	6.8
del Toro, Guillermo	Hellboy (2004)	6.8
del Toro, Guillermo	Blade II (2002)	6.7
del Toro, Guillermo	Cronos (1993)	6.7
del Toro, Guillermo	Crimson Peak (2015)	6.6
Gurrola, Alfredo (I)	Cabalgando con la muerte (1989)	6.2
del Toro, Guillermo	Mimic (1997)	5.9
Silva, Batan	After Darkness (2016)	
del Toro, Guillermo	At the Mountains of Madness (????)	
de la Riva, Juan Antonio	Aztech (2017)	
del Toro, Guillermo	Hellboy 3 (????)	
del Toro, Guillermo	Pinocchio (????/II)	
del Toro, Guillermo	Saturn and the End of Days (????)	
del Toro, Guillermo	The Haunted Mansion (????)	
del Toro, Guillermo	The Shape of Water (2017)	
del Toro, Guillermo	The Witches (????)	

- 5 George Lucas, pid *Lucas, George (I)*, was a fan of Kurosawa's movies, pid *Kurosawa, Akira*, and used them for inspiration. For each production directed by Lucas, find the productions directed by Kurosawa's, list the id of Lucas movie, the id of the Kurosawa's movies, and the type of relationship (attribute *relationship*). Hint: use the relation *links*, which relates productions.

lucas	kurosaka	relationship
Star Wars (1977)	Dersu Uzala (1975)	references
Star Wars (1977)	Kakushi-toride no san-akunin (1958)	references
Star Wars (1977)	Shichinin no samurai (1954)	references
Star Wars (1977)	Yôjinbô (1961)	references
Star Wars: Episode II - Attack of the Clones (2002)	Kagemusha (1980)	references
Star Wars: Episode II - Attack of the Clones (2002)	Shichinin no samurai (1954)	references
Star Wars: Episode III - Revenge of the Sith (2005)	Shichinin no samurai (1954)	references
Star Wars: Episode I - The Phantom Menace (1999)	Kagemusha (1980)	references
Star Wars: Episode I - The Phantom Menace (1999)	Kakushi-toride no san-akunin (1958)	references
Star Wars: Episode I - The Phantom Menace (1999)	Kumonosu-jô (1957)	references
Star Wars: Episode I - The Phantom Menace (1999)	Shichinin no samurai (1954)	references

Hints

- You can remove duplicates using `distinct`
- You can order your results to match the ones in this assignment using *order by*

What to submit

In paper submit the Relational Algebra, the SQL queries and the results. Electronically, submit your SQL queries in a text file.