

**CSC 370 — Database Systems**  
**Fall 2016**  
**Assignment No. 7**

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

Note 2 Working with other people is prohibited.

- Due date: Tuesday, Nov 22, 2016, at the beginning of the class.
- This assignment is worth 1% of your total course mark.
- Submit electronically your UDF and the source code of the program. Submit a paper copy at the beginning of the class.

### Objectives

After completing this assignment, you will have experience:

- Create User Defined Functions.
- Learn about security in SQL.

### Your task, should you choose to accept it

1. From the textbook, to 10.1.1. Only answer with the most strict privileges.
2. From the textbook, to 10.1.2. But replace

```
4    D    GRANT p TO B, C, E WITH GRANT OPTION
```

with

```
4    D    GRANT p TO C, E WITH GRANT OPTION
```

3. For this part you will learn about creating UDFs. These are very similar to Stored Procedures, but they return a result. See <https://www.postgresql.org/docs/9.4/static/xfunc-sql.html>.

Write a User Defined Function that takes one parameter: a string. This string is a *pid*. Call the UDF anything you want (e.g. *myFunc*) but prefix it with your uvic-id (e.g. *dmg\_myFunc*). The result of this UDF is a projection of the *id*, *year*, *rank* and *votes* of the **movies** directed by the given pid (see below), ordered by year. Make sure you do a left or full join between tables (so you show movies even if they do not have a rank).

You can test your UDF using psql as follows:

```
SELECT * FROM dmj_myFunc('Nolan, Christopher (I)');
```

id	year	rank	votes
Doodlebug (1997)	1997	7.1	11415
Following (1998)	1998	7.6	66121
Memento (2000)	2000	8.5	849849
Insomnia (2002)	2002	7.2	219782
Batman Begins (2005)	2005	8.3	986936
The Exec (2006) {{SUSPENDED}}	2006		
The Prestige (2006)	2006	8.5	849119
The Dark Knight (2008)	2008	9	1685825
Inception (2010)	2010	8.8	1476746
The Dark Knight Rises (2012)	2012	8.5	1151061
Interstellar (2014)	2014	8.6	937348
Quay (2015)	2015	8	357
Dunkirk (2017)	2017		

(13 rows)

### What to submit:

- Submit, via connex, 1 text file containing your UDF.
- Submit the solutions to the textbook questions before the beginning of class.