

# Databases: lab assignment 2

Your work (schema, comments etc.) should be written in English.

## **Relation with lab 1**

Note this assignment is based on the results of lab 1. If these are unsatisfying, a retake of lab 1 is required before going on with this lab.

## **Preparation**

Be sure that you have mastered the material on SQL, especially the exercises. The database you have created in lab 1 should be filled with some data: not much, but enough to test your queries.

## **The queries**

Your challenge is to formulate six SQL queries that are relevant for your domain and obey the requirements you see below. First, describe each query in natural language, thereby explaining its intention. Next, write the query in SQL.

1. Give a query containing an outer join OUTER JOIN (LEFT suffices).
2. Give a query containing the phrase "has no" (compare exercise 3: Q3).
3. Give a query containing the phrase "has only" (compare exercise 3: Q4).
4. Give a query expressing a division (as you know it from the relational algebra).
5. Give a query which calculates the maximum of a summation (SUM).
6. Give a query calculating the second largest value of a set. You are not allowed to use LIMIT or OFFSET..

Test your queries thoroughly. Be sure that your data is well chosen and adequate for testing. Be aware of the fact that a correct answer for a specific set of table entries does not necessarily guarantee correctness of your query in general!

Save your queries in text files with names q1.txt to q6.txt. Let each SELECT statement be preceded by the description of the query in natural language (comment lines in SQLite start with "--"). *Make sure that your SQL files are automatically readable in SQLite, for example by executing ".read dbdvl.txt".*

## **Submittance**

Create a zipped file containing the following documents:

- A text file *dbdef.txt*, containing the SQL DDL commands to create your database. This is one of the deliverables of lab 1, possibly adapted.
- A text file *dbfill.txt*, containing the SQL DML commands to fill your database.
- The text files *q1.txt .. q6.txt* containing the queries.

All files should run flawless on SQLite, using commands like ".read dbdef.txt".

Details about the submit protocol can be found on BB.