CISC 3500 Databsase Systems

Lab 1: Basic SQL and Jupiter Notebook

Goals for this assignment

- Be able to create and manipulate tables in sqlite3
- Be able to write select-from-where queries
- Do some basic data modeling

Before you start coding,

- Make sure you can run sqlite3 on your laptop or on the storm server
- SQLite commands and general usage
- Formatting the output
- More details about the commands

####Lab Assignment

Do the following steps:

- Please creat your own database named lab1.db3.

- Q1: Write SQL statements to create a table called MyGraph that can store any directed graph ("graph" as in vertices and edges, or nodes and links). You have to carefully design the schema.

- Q2: Write SQL statements to store the following graph in your table.
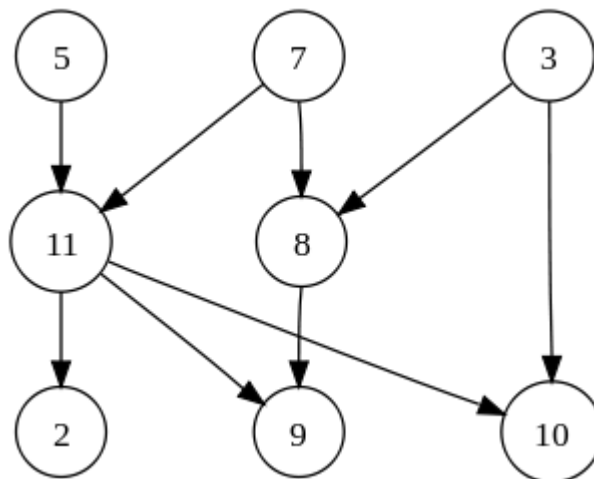
- Q3: Write a SQL statement that returns all source vertices in your table.
- Q4: Write a SQL statement that returns all edges, such that the source id is larger than the destination id.
- Q5: Write a SQL statement to add a column of weight to each link on the direct graph.
- Q6: Write a SQL statement to ramdonly assign a weight (1-10) to each of the link. (generate a ramdon number with a seed.)
- Q7: Write a SQL to return the distinct values of weights.

Grading Rubric

Your code should be elegant and well-documented (with comments).

1. Be able to create a database and a table (10%).
2. Be able to design a correct schema and store the graph(20%).
3. Q1 (10%).
4. Q2 (10%).
5. Q3 (10%).
6. Q4 (10%).
7. Q5 (10%).
8. Q6 (10%)
9. Q7 (10%)

Submission

Write all your code in Lab1.ipynb and submit on Blackboard (one copy per group).