

CISC 7610X, Homework 1 – Due 9/26/17

Prof Michael Mandel – mim@sci.brooklyn.cuny.edu

1 Introduction

For this assignment, we will be building and querying a simple database for managing a radio news station's recordings and programming. The assignment will consist only of writing SQL statements. Please use SQLite¹, so that it is easy for me to run your commands on my computer to validate them and to see the database that you have generated.

You will submit both a SQL script file containing all of the SQL statements you ran and the file generated by SQLite containing your final database.

2 Database requirements

The database should represent the following aspects of the radio station's recordings and programming:

- A radio producer records an **interview** into a single long file
 - The file has a recording date, the producer's name, the interview subject's name, and a brief textual description
- **Quotes** are extracted from each interview
 - Quotes can overlap with each other on the tape and need not be contiguous on it
 - Quotes have a transcript, a reference to the interview that they came from, and the start and end times within that interview.
- Quotes are assembled into **stories** about a topic
 - Stories have a title and a reporter, in addition to the quotes that are used in them
 - The start and end time of each quote within each story should be stored in the database
 - A quote can appear in multiple stories
- Stories are assembled into **programs** that air together
 - Programs have a date that they were first aired and a brief description, in addition to the stories that are used in them
 - The start and end time of each story within each program should be stored in the database
 - A story can appear in multiple programs

3 Design the database

Design the database by drawing an entity-relationship diagram representing the tables in the database and their relationship to one another. Make sure to specify the cardinality of foreign key relationships. You might need to add additional join tables for many-to-many relationships.

¹<http://www.sqlite.org>

Write and run SQL CREATE statements in SQLite to create the tables that you have designed.

4 Populate the database

Consider an example database that includes the following elements:

- Two programs, each consisting of two stories
 - Program 1 contains Stories 1 and 2
 - Program 2 contains Stories 3 and 2
- The stories consist of the following quotes
 - Story 1 contains Quotes 1 and 2
 - Story 2 contains Quotes 3 and 4
 - Story 3 contains Quotes 1 and 5
- The quotes come from the following interviews
 - Quotes 1, 2, and 5 come from Interview 1. Quote 1 is a small excerpt from Quote 5
 - Quotes 3 and 4 come from Interview 2
- The rest of the fields (names, descriptions, timing, etc.) can be filled in however you would like. Give them meaningful and realistic values for a radio news station or podcast.

Write and run SQL INSERT statements in your SQLite database to populate the tables with the data described above.

5 Query the database

Write and run SQL SELECT statements on your SQLite database to query the database for the following information:

1. The transcript of every quote used in Program 1, in the order in which they appear
2. The interview subject of every quote used in Story 3, in the order in which they appear
3. The interview number and start and end time on the interview of every quote used in Program 2, in the order in which they appear
4. The dates when programs containing quote 1 first aired

6 Submit this homework

Submit a single SQL script that performs the database creation, population, and querying along with the SQLite database file that results from running it via the dropbox on the course Blackboard site.