Homework 9

This assignment is due on November 4th at 9AM.

(1) Read this short description of using Python with SQLite: http://www.stolaf.edu/people/olaf/cs125/ch14.pdf

(2) Please also read this documentation: http://www.sqlite.org/about.html -- the documentation here may be useful as well: http://www.sqlite.org/docs.html

(3) Install SQLite on your system. It is supported on Windows, Mac, and Linux, as well as several other systems: http://www.sqlite.org/download.html

(4) Write a warm-up program that uses Python to create a small SQLite database that contains the names, phone numbers, and address of four made-up people.

(5) Add some more Python code to execute an SQL query on your database that grabs the address of everyone whose name begins with a letter between M and Z inclusive. Save your script as `hw9a.<lastname>.py`.

(6) The rest of this exercise concerns the "Million Song Database." Please read the homepage to see what this site is all about: http://labrosa.ee.columbia.edu/millionsong/ . Read what is available on a single track here: http://labrosa.ee.columbia.edu/millionsong/pages/example-track-description . Read the "SQLite" section of this tutorial page to discover how to use Python to access this information: http://labrosa.ee.columbia.edu/millionsong/pages/find-song-specific-name-or-feature

(7) A copy of the SQLite database called `track_metadata.db` is available here: http://www.ee.columbia.edu/~thierry/track_metadata.db . A backup copy is here: http://www.ischool.berkeley.edu/~tygar/for.i206/track_metadata.db .The columns in the song table are as follows:

```
track_id
title
song_id
release
artist_id
artist_mbid
artist_name
duration
artist_familiarity
artist_hotttnesss
year
track_7digitalid
shs_perf
shs_work
```

(8) Write a Python script that prints all of the titles of Beatles tracks in this database (the artist_name is 'The Beatles'.) Save your Python script in `hw9b.<lastname>.py`.

Extra credit: Review the documentation on ggplot here: http://ggplot.yhathq.com . Create a visualization of when various Rick Astley tracks were released, using Python to extract the necessary data from track_metadata.db, and using ggplot to create an appropriate bar graph. Save your Python script in `hw9c.<lastname>.py`

Upload your files (hw9a, hw9b, and perhaps hw9c) in the usual fashion