Data Storage and Retrieval
Fall 2016

Assignment 4
September 14, 2016

Show all your work!

This is a pair assignment.
Work together on as much as possible.
Turn in one assignment for the pair.

1. Jail database people.
    a. Show how to uniquely identify a person in the jail database.
    b. Does one person in the jail database ever have more than one race?
2. Normalize the jail database:
    a. Draw an ER diagram with what you think are important entities. You can using the Drawing tool of Google Docs, starting with the ER Diagram Pieces doc.
    b. Make a new database, jail_norm_<name>.db (readable by me), and create the tables for a jail db in 3rd normal form. Use all appropriate integrity constraints.
    c. Populate the new db. Show your work. Here's how to work with two db's in one sqlite3 session:
        i. Open jail.db.
        ii. Attach your new db, giving it a schema name of `jailnew`.
        iii. Now you can use table `foo` in the new db, as `jailnew.foo`.
3. Put `fanfiction.stories` into 2nd normal form (which implies 1st normal form). To keep `url` as primary key you'll need to create a new table. `starringchars` isn't the only problem. You'll probably want to read the Postgres docs on string functions. You can use `psycopg2` if you want.
4. Seven Databases, Chapter 2, Day 1 homework.
    a. Find problem 3.
    b. Do problems 1, 3.
5. Seven Databases, Section 2.3, Day 2.
    a. Read these subsections and follow along: Aggregate Functions, Group By, Stored Procedures (import /usr/share/databases/SevenDatabases/code/postgres/add_event.sql), Viewing The World (optional), and I'll Meet You at the Crosstab.
    b. In Day 2 Wrap-Up, do Do problem 2.