Python for Informatics

Assignment 8

"3 Informatics Projects"

Background:

A common problem encountered while working with Python is that you are unable to locate a file (or database element) when you run your program. Often the cause of this problem is due to your not running your program from the directory where the file you are attempting to locate exists. The best way to resolve this problem is to use the ***%cd*** magic command to *change* your *working directory*. What is your working directory? It is the directory from which your program would be running out of, should you execute it. The ***%pwd*** magic command will *print* your *working directory*. The current working directory is not necessarily the same directory in which your program file exists. By the way, the ***%ls*** command will *list* the contents of your current working directory. As an alternative to using the ***%cd*** magic command, you could just specify the fully qualified pathname as part of the filename within your program. However, that is not a best practice. The problem with that approach is that it specializes your code to run reliably *only on your system*. The file you are trying to open is likely not in the same location from one system to another. So, if you want your code to work properly on multiple systems (on mine, for example), don't include the pathname in your code! If you leave out the pathname in your code, then, instead of my having to modify your code, all I'll need to do to get your program to run correctly is ***%cd*** to the directory on my system where I know the data files will be found. Just so you know, in a less dynamic environment, it is common to have a fixed directory location where the data files are expected to be located. In these situations, however, those locations are typically specified as part of the installation process, or by reading settings from a configuration file. Such an approach relies on the parameterization of the pathname information through the use of a programmatic pathname variable.

Description:

1. Step through and execute each of the three informatics applications/projects delineated in Chapter 16 ("Visualizing data") of our textbook. The slides for Lesson 8 will help you understand the how and why of each necessary step. *For those of you who decided not to submit the "Google Geocoding" option of Assignment 7, you do not need to execute the first of the three Chapter 16 projects. However, if you don't submit the Google map visualization for project 1, then to make up for that you'll need to submit 2 visualizations for project 3: the word cloud visualization (by generating, loading and visualizing gword.js), and the line graph visualization (by generating, loading and visualizing gline.js).*
2. At the end of each project, take a screenshot of the project output (***the visualizations, not the code***). Note that for the third and last project, *you may use either the gword or gline*

visualization (or both, if you like). If you are not submitting the Google map visualization, then you must submit both the gword and gline visualizations.

3. [Optional] If you choose to submit the Google Map visualization, the page rank visualization (from spider.json), AND both the gword and gline visualizations, you will earn 1.5 extra credits course points.

Note: Since the gmane resource is often unreliable, I recommend that for the gmane project you start with the content.sqlite database file that is available at our textbook web site. For your convenience, you'll find it available for download here:

https://www.py4e.com/data_space/

After you put this in your gmane directory, skip running gmane.py and just go to the next step, which is running the gmodel.py program.

Deliverable:

Three or more files as attachments at our course shell assignment page. Each one will be a screenshot image file (.png or .jpg) demonstrating the final visualization output of the respective project.

Submission Deadline:

Please see the course schedule in our syllabus for all assignment submission deadlines.

Peerwise Reminder:

This is not a reminder.