INFO 2201: Assignment #09

Due on Friday, May 4, 2018 at 11:59pm

Professor Brian Keegan
Department of Information Science
College of Media, Communication, and Information
University of Colorado, Boulder

1 Objectives

"You never really learn something until you teach it." I did not learn to program in Python until I was 25 years old, so many of you have a significant head start on me that could give you a substantial advantage for the rest of your careers. Demonstrate that you have learned something by trying to teach it through your own Jupyter Notebook about a programming topic we covered in this or another class. It could be a topic you really enjoyed and would like more of: an interesting idea or a powerful method applied to new data. It could be critical of how I taught a topic in INFO 2201: something that we should have spent more time on, needed a different framing, or more exposition and support. It could be a topic to include in future versions of INFO 2201: something you learned elsewhere, wished you had learned in class, or taught yourself along the way. Keep in mind that each one of these notebooks (lectures and lab assignments alike) took me at least 3 hours to prepare: you should expect to spent at least that long on this assignment.

2 Instructions

This assignment is purposely open-ended, but I have provided some structure below that could be used a minimal rubric. However, the overriding goal is for you to deliver a Notebook that demonstrates some level of mastery, interest, and/or re-conception of computing topics that could be used in future classes. If this rubric is blocking you from being able to teach how you would like (within the confines of a Jupyter Notebook), you are welcome to employ an alternative structure, but make sure to include the "Notebook Motivation" section regardless.

1. Identify a topic to write up as theme for the notebook. Include in the markdown at the top of the notebook: your name, the learning objectives, and links to any other tutorials or references you used. Unlike our class notebooks, please include a section called "Notebook Motivation" that contains something like a paragraph of background about why you chose this approach.
2. Identify a data set *we have not already used in class before*. You can use data sets like the Global Terrorism Database (GTDB), The Movie Database (TMDB, which we did use in class, but you may also use for this assignment), or NHTSA Fatality Accidents Reporting System (FARS) data – all of which are on Canvas. You are also welcome to use another data set, provided that it is publicly-available. Some great collections of public data sets are available via Kaggle, data.world, data.gov, or Data is Plural.
3. Create a fresh Jupyter Notebook that will contain all your lecture notes or solved assignment. You will submit only this notebook file on Canvas.
4. The Notebook should have approximately three sections. These sections might be fundamentals, a simple example, and a more advanced example; interlocking concepts that connect different topics together; different approaches to or perspectives on the same concept; *etc*.
5. The Notebook should ideally incorporate a combination of (1) structured sections with markdown headings, narrative, and in-line code comments and (2) visualizations, tables, or status print statements as appropriate. Exercise sections are welcome, but not required.
6. The Notebook should be *solved*, in the sense that sections with exercises or lab assignments should completed by you and could be used as a rubric. You can use Jupyter Notebook markdown to delineate or define sections with exercises, alternative ways to solve a problem, or doing more complex data-wrangling for the hypothetical students who might use this notebook in the future.

You will your completed Jupyter Notebook to Canvas.