

CDS 301/501 - Homework 5

Due Date

4:30pm, Monday March 2nd, 2020

Problem 1

This is a Python focused homework. Unlike prior homework, in this homework you will be free to choose your own problem(s) to work on. I will make a few suggestions, somewhat dependent on your current abilities with Python and the libraries we discussed in class. In grading this homework, we will take into consideration effort as much as results. Wherever you are with your Python programming skills - treat this as an opportunity to learn more and extend them.

Turn in a short report (.pdf) describing what you did as well as your code (one or more .py or .ipynb files). Turn in any visualizations resulting from your efforts - just turn in the visualizations as standalone images - there is no need for commentary (unless you want). If you use datasets outside of the ones discussed in class, please put a link to that data in your short report (or just turn in the data as well if its small).

Suggestions...

If you are somewhat of a beginner with Python, get the class exercise working and extend it in some way. One way to extend it, for example, would be to create a function around the scatterplot of life-expectancy vs. fertility-rate which takes the year as an parameter and produces the scatterplot just for that year. There are other ways of extending, for example build visualizations around the other attributes in the dataset we didn't cover in class (population, gdp-per-capita).

For intermediate programmers, implement the pivoting process we demonstrated for Tableau using Python.

If you are a more experienced Python programmer, consider applying the Python tools we covered (or others we didn't cover) to the data for your project or something else you are interested in.

Another suggestion for more experienced programmers, code the function discussed for beginners (parameterizing the scatterplot by year) and investigate how to build an animation over all years. Build the animation. Optionally - present what you did and how you did it - next week. I will extend bonus homework credit for this optional effort.