OMIS 30 - Spring 2020 – Final Project

Logistics:

Due: Saturday, December 7, 2018 at 11:59 PM

In small groups (which you formed previously), complete the “old” Project 3 or Project 4. Below are updated criteria and grading guidelines.

“Project 3”

Objective:

Perform a data analysis on a data.gov dataset using Jupyter Notebooks.

The requirements for this project are:

- Select a dataset from data.gov (https://catalog.data.gov/dataset)
- Get instructor approval for your dataset
- Use Jupyter Notebooks and submit the .ipynb file
- Find 3 interesting facts/patterns about the dataset and present your findings with the use of graphics - at least one table and at least two charts
- Tell a story with the data

Guidelines for judging ‘interesting’:

There are multiple ways things get to be ‘interesting’. Here’s two of the best heuristics we know:

- This fact/pattern is so interesting you would go to a party and say: “Guess what I found out about xyz!”
- This fact/pattern is crucial to understanding the topic: e.g. For gerrymandering, that would be something like ‘There are x many districts, that are up for debate every y years, and z are the decision-makers. If *a* many districts shift to red/blue, then the odds of the election swaying one way is *b%* higher.’ By the way, this would be one of the three sections - not all three in one.

Storytelling & visualizations:

- Present the data in a manner which draws people in and keeps them engaged
- Be concise, clear, concrete, correct, coherent, complete, and courteous (7 C’s of

communication)

- Use comments for code, and Jupyter elements for storytelling
- Pictures are worth a thousand words. Use them to distill complicated data into an easily graspable chart or table.

Collaboration:

You will work in groups on the assignment.

Submission:

- Name your final file <your_username>_project3_fall2018.ipynb (mine would look like dvrdoljak_project3_fall2018.ipynb).
- Make sure it runs completely and correctly on your computer
- Submit it via Camino
- Include a link to your dataset at the top of the notebook.

Grading Rubric:

Section	**Grade**	**Criteria**
Interesting Fact 1	25%	Interestingness, factfullness, analysis, presentation
Interesting Fact 2	25%	Interestingness, factfullness, analysis, presentation
Interesting Fact 3	25%	Interestingness, factfullness, analysis, presentation
Use of comments & Readability	20%	Documentation of author & dates; Explanation of steps Use of whitespace; Use of new lines; Naming convention of variables; Sequencing of code and outputs
General & Submission	5%	Directions followed correctly

“Project 4”

Objectives

- Create a simple webapp, using the Python Flask library/framework.
- Leverage the examples and templates provided, and modify/repurpose them to suit your project needs.
- Use Python coding best practices

Collaboration:

You will work as a group on the assignment.

Submission:

- Zip your files to a folder. Name that zip file <yourgroupname>_finalproject_spring2020.
- Include a .txt file that includes each team member’s name and username.
- Make sure it runs completely and correctly on your computer
- Your code should be a standalone .py file(s), not Jupyter notebooks
- Submit it via Camino

Grading Rubric:

Section	**Grade**	**Criteria**
Proposal	10%	Proposal submitted and approved
Strategy & code	20%	Order of code, procedures, correctness
Mastery of data types	15%	Use variable types & structures to your advantage and apply them efficiently.
Interactive Robustness	15%	No user input should be able to “break” your app or calculator.
Code & Readability	20%	Documentation of author & dates; Explanation of steps; Use of whitespace; Naming convention of variables; Sequencing of code and outputs; Python best practices followed; Code is correct
Learn Something New	20%	Use a library or technique that hasn’t been taught in class. Identify and explain in your write-up