**Technical Requirements**

**The technical requirements for Project 1 are as follows.**

Use Pandas to clean and format your data set(s)

Create a Jupyter Notebook describing the data exploration and cleanup process

Create a Jupyter Notebook illustrating the final data analysis

Use Matplotlib to create a total of 6-8 visualizations of your data (ideally, at least 2 per "question" you ask of your data)

Save PNG images of your visualizations to distribute to the class and instructional team, and for inclusion in your presentation

Optionally, use at least one API, if you can find an API with data pertinent to your primary research questions

Create a write-up summarizing your major findings. This should include a heading for each "question" you asked of your data, and under each heading, a short description of what you found and any relevant plots.

**The presentation requirements for Project 1 are as follows.**

**Your presentation must:**

Be at least 8-10 min. long

Describe the core message or hypothesis for your project.

Describe the questions you and your group found interesting, and what motivated you to answer them

Summarize where and how you found the data you used to answer these questions

Describe the data exploration and cleanup process (accompanied by your Jupyter Notebook)

Describe the analysis process (accompanied by your Jupyter Notebook)

Summarize your conclusions. This should include a numerical summary (i.e., what data did your analysis yield), as well as visualizations of that summary (plots of the final analysis data)

Discuss the implications of your findings. This is where you get to have an open-ended discussion about what your findings "mean".

Tell a good story! Storytelling through data analysis is no different than in literature. Find your narrative and use your analysis and visualization skills to highlight conflict and resolution in your data.

**You are free to structure your presentations to your liking, but students tend to have success with the following format.**

**Title Slide**

Include the name of the Project and Group Members

**Motivation & Summary Slide**

Define the core message or hypothesis of your project.

Describe the questions you asked, and why you asked them

Describe whether you were able to answer these questions to your satisfaction, and briefly summarize your findings

**Questions & Data**

Elaborate on the questions you asked, describing what kinds of data you needed to answer them, and where you found it

**Data Cleanup & Exploration**

Describe the exploration and cleanup process

Discuss insights you had while exploring the data that you didn't anticipate

Discuss any problems that arose after exploring the data, and how you resolved them

Present and discuss interesting figures developed during exploration, ideally with the help of Jupyter Notebook

**Data Analysis**

Discuss the steps you took to analyze the data and answer each question you asked in your proposal

Present and discuss interesting figures developed during analysis, ideally with the help of Jupyter Notebook

**Discussion**

Discuss your findings. Did you find what you expected to find? If not, why not? What inferences or general conclusions can you draw from your analysis?

**Post Mortem**

Discuss any difficulties that arose, and how you dealt with them

Discuss any additional questions that came up, but which you didn't have time to answer: What would you research next, if you had two more weeks?

**Questions**

Open-floor Q&A with the audience