Capstone Project Guidelines

# Objectives:

1. Describe the dataset
   * Source, timeline, data elements, limitations, etc.
2. Describe the data wrangling process, the step needed to get the data ready for analysis
   * What was the goal of data cleaning/transformation/wrangling?
   * What was done to the data?
   * What steps did you take?
3. Describe the analytic goal/objective for the data.
   * How would you use the data?
   * What question can be answered with the data?
   * What is the limitation of those answers?
4. Describe the analytic steps
   * What analysis did you performs?
5. Data Visualization (optional)
   * Present your finding in an appropriate visualization
6. Result/finding
   * What insights did you find?
   * What are implications of those insights? How are the insights important?

# Grading criteria:

Readability:

* Included comments and description of procedure in the code
* Used abbreviation and shorthand
* Used line-break appropriately
* Variables are named correctly according to naming conventions

Efficiency:

* Leveraging the most efficient method/function (e.g., vector processing instead of row iteration)
* Least amount of syntax or deploying least number of steps to achieve objectives (e.g., Used loop, function, etc. to reduce replication of code)
* Limit manual coding and instead deploy dynamic coding like assignment

Procedure:

* Project includes and executes a data ingestion step
* Project includes and executes a data cleaning step
* Project includes and executes a data exploration step
* Project includes and executes a data wrangling step
* Project includes and executes a data analysis and reporting step
* (Optional) Project includes and executes a data visualization step

Understanding:

* Imported all the necessary and appropriate libraries for the project
* Used the appropriate functions or methods to execute tasks correctly
  + Able to ingest the data correctly
  + Able to clean the data correctly and efficiently
  + Able to explore the data correctly and efficiently
  + Able to wrangle the data correctly and efficiently
  + Able to analyze the data correctly and efficiently
  + (Optional) able to visualize the data correctly and efficiently
* For each function or method used, used the necessary parameters to execute tasks correctly
* Data Analysis performed shows deep and clear understanding of the data; analysis is insightful and shows critical thinking
* Results, insights, and takeaways explained for the data show deep and clear understanding of the data; insightful and shows critical thinking of the data

Functionality:

* Able to run project from start to finish without any error; no syntax or runtime error occurs
* Project does not crash or restart before finishing
* No missing or misplaced steps occur in the project

Communication:

* Comments in code are readable and easy to understand; no irrelevant comments
* Able to describe and show understanding of the data and its issues clearly and understandably
* All objectives are communicated clearly and understandably; objectives are reasonable.
* Data visualizations, if shown, are clean, readable, and easy to understand.
* The project procedure is clearly understood.
* Presentation of the project is not too lengthy to the point that not all information is able to be absorbed in one sitting but not too short either to miss out some important details (time limit?).
* Able to answer all questions asked during or after the presentation as possible.
* No obvious grammatical or spelling mistakes occur.