SAS project details

Purpose:

The purpose of this SAS project is for you to put together all the tools that you have learned in this course about SAS. The project will allow you to explore your skills with real data and synthesize information used from this class and other courses. The goal is for you to produce a professional looking report. One that you can be proud of and use to future employers as an example of the work that you do.

Goals:

- Import real data set
- Clean data set as needed
- Perform Analysis on the data to explore questions of interest pertaining to the data set
- Summarize findings in report and presentation

Guidelines:

- **Import a real data set** - You may use the same data you used for your R project. If you decide to go with a different topic you may use an existing set of data, data you create from your own survey/experiment, one that you create as a combination of data sets.
- **Decide on the story you want to tell.** Your final report should explore/investigate your data and logically explain this investigation in a meaningful way.
- **Make it meaningful** - Your project should provide insight. It doesn't have to be globally impactful but it should be interesting not just an exercise in "can I check off the things she has asked me to do".
- Report and presentation does not have to be done in the order below.

Report

- Your final report can be in word, pdf, or powerpoint form (or any other form you would like for it to take).
- Introduction –
    - Provide a description of your topic of interest
    - Provide a short explanation of how you plan to address the question of interest.
    - Include a "cover image" that is relevant to your topic (be sure to cite the source)
- Dataset –
    - Provide a clear reference and description of the data
    - Thoroughly explain what the data is (what years, what are the observations, what subset of people, etc.)

    - Provide explanation for relevant variables (what is the variable, what does it represent (units?), any content knowledge about variables (remember audience)

- Analysis –
    - Import Dataset
    - Clean/Transform Dataset – Provide explanation of how data was made "clean"
    - Visualize – Provide appropriate exploratory data analysis for your variables (graphs, frequency tables, descriptive statistics, etc.)
        - Properly label any graphs
    - Model – Explore your questions of interest – uncover something about your data that is apparent from the basic information, this can be done with multivariate graphs, statistical tests, regression models
- Communicate –
    - Provide a summary of your findings
    - Discuss any limitations of your analysis. How could it be improved in the future? What are the next steps in analysis (ie., additional research should be done in *xyz*)?
- SAS code
    - Provide your code as an appendix.
- Biography
    - Provide an appropriately sized picture of you
    - Provide a short biography (include why the subject matter for your project is of interest to you)

Rubric:

Section	Minimum Requirements	Points Possible
Introduction	• Provide a description of what you are exploring. (i.e, Why should anyone be interested in this?) • Provide a short explanation of how you plan to address the question(s) of interest (data used, methods, etc.) • Provide cover image	5
Data	• Provide clearly identified reference for your data; use a standard reference notation (hyperlinks if applicable) • Thoroughly explain your data: what was the original purpose of the data, when was is collected, how many variables, how are missing values handled, how was the data collected, what does one observation in the data represent. DIG - don't just allow "there is no explanation of this data" - you can not provide any	15

	reasonable analysis of data that you don't know what it is or where it came from • Provide an explanation of **each** variable in your final dataset: what is the variable, what does it represent (variable names alone are NOT sufficient)	
Data Analysis	• Provide an explanation of how you cleaned your data. (removed variables, changed type, changed names of variables, etc.) • Exploratory Data Analysis – summary statistics and graphs for each relevant variable. Graphs & tables should be properly labeled and fully explained (DO NOT provide a graph without explaining what the graph represents and what information it provides) • Uncover something about your data that is not apparent from the basic information. Provide analysis in the form of tables, plots, statistical tests, etc.	15
Summary	• Provide a summary of your question of interest. Summarize any interesting insights or implications of your analysis • Discuss the limitations of your analysis. How could it be improved? What would the next steps in the analysis (there are always next steps)?	10

SAS code	• Code should be available and properly commented (reproducible); Coding should be logical and follow a flow of analysis
	• Create a section/sections in your report about your use of SAS (maybe in Appendix)
	  ○ **Accessing Data:** Explain how/why you Accessed your data
	  ○ **Exploring/Validating Data:**Explain how/why you explored your data before making changes
	  ○ **Preparing Data:** What changes did you make and why? subsetting, formatting, conditional processing, computing new columns, etc.
	  ○ **Analyzing and Reporting Data:** Explain how/why you analyzed your data
	  ○ **Exporting Results**: Explain how you exported your results.
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Design	• Report should be professional looking - It should look like a report not an assignment. Should have proper titles, color, pleasing attributes, styling, etc.	5
Biography	• Include a brief biography of you with a picture	5

Presentation	• Provide a 5-7 minute video presentation of your project. Suggestion to use Zoom, Kaltura, or Canvas to create video. There should be audio and I should be ale to see your report.	15
Other Requirements	• Tools used from the course are applied well. • Make the report your own. Go above and beyond what is in this list: provide extraordinary effort and/or additional tools not addressed in course and/or sophisticated application of tools from the course and/or creativeness and/or.... • The report should not have grammatical errors, spelling errors, you should use professional/journalistic language (not conversational), the report should be properly referenced (in a particular reference style).	5
Execution	• .SAS file fully executes with no errors • Provide all necessary documents/files for execution	10

Submission:

Possible Points: 100

Submit:

- **Report:** word/pdf/etc. of written report with SAS output
- **Program and Supporting Files:** .sas program file (and any external files that I need to check that it runs)
- **Video:** 5-7 minute video (by link or file)