Course Project Overview

You will submit a proposal (less than 5 pages) as Project One and a final project report (less than 10 pages) as Project Two.

**Project One: Proposal**: Your first project ( your proposal) will include your research question, data you will use and preliminary exploratory analysis. You will present your proposal (5 minutes) and will collect feedbacks.

**Project Two: Final Report**: You will complete your project and your final report will include the five parts defined below. You will then do a 10 minute presentation of your findings. Every member of the group will take part in the presentation and every member is expected to answer any technical question regarding the analysis or interpretation of findings.

You can use any data that fits to your research question as long as have not used in the class. You can potentially collect your own data (surveys, data crawling etc.) but keep in mind this is a time consuming process.

If you are having a hard time to find relevant data for your research question, perhaps you should consider an alternative research question. It might be a good idea to see what is available in terms of data before commiting to a specific question. Here are some starting points to look for data:

* Data.gov: The home of the U.S. Government’s open data
* A list of public datasets on the Internet: <https://github.com/caesar0301/awesome-public-datasets>
* General Social Survey (GSS): You can load it with  
  load(url("http://bit.ly/dasi\_gss\_data"))  
  Data description can be found at  
  <https://d396qusza40orc.cloudfront.net/statistics%2Fproject%2Fgss1.html>
* American National Elections Study (ANES): You can load it with  
  load(url("http://bit.ly/dasi\_anes\_data"))  
  Data descriptions can be found at  
  <https://d396qusza40orc.cloudfront.net/statistics%2Fproject%2Fanes1.html>

Proposal

Introduction

What is your research question? Why do you care? Why should others care?

Data

Write about the data from your proposal in text (not bullet-point) form. Address these points:

* Data collection: Describe how the data were collected. Observations: What are the observations? (Remember: observation = row in your data)
* Variables: What are thevariables you will be studying? State the type of each variable. You should also justify how each variable will help with answering your research question.

Method

It is your responsibility to figure out the appropriate methodology. You should propose a methodology that is suitable for your answering your question. We will discuss more about this in the coming weeks.

Exploratory data analysis

Calculate and discuss relevant descriptive statistics, including summary statistics and visualizations of the data. Also address what the exploratory data analysis suggests about your research question.

Final Report

Introduction

Re-state the problem. If you make any changes from the proposal, explain

Data and Method

Re introduce the data and method. Again if there are changes, justify. If there are no changes you can re-use your work in the proposal. You can provide some of the ‘key’ exploratory analysis findings from before

Analysis Results

Report on your analysis and interpret results as appropriate.

Conclusion

Write a brief summary of your findings without repeating your statements from earlier. Include a discussion of what you have learned about your research question and the data you collected, and include ideas for possible future research.