Project Overview

Project Week!

Today's Class:
•Create Teams (4 per team)
•Begin researching data sets
•Outline project ideas
•Submit Project Proposal for Approval
•Initial data exploration

1st Week (DEC, 18-22)
•Hardcore Development

2nd Week (JAN, 8-12)
(M/T):
•Hardcore Development

(W/Th):
•Hardcore Development
•Presentation Prep

Saturday's Class 12th Jan:
•Presentations

Teams

Groups

Team #1
<NAME>, <NAME>, <NAME>, <NAME>

Team #2
<NAME>, <NAME>, <NAME>, <NAME>

Team #3
<NAME>, <NAME>, <NAME>, <NAME>

Team #4
<NAME>, <NAME>, <NAME>, <NAME>

Team #5
<NAME>, <NAME>, <NAME>, <NAME>

Team #6
<NAME>, <NAME>, <NAME>, <NAME>

Team #7
<NAME>, <NAME>, <NAME>, <NAME>

Team #8
<NAME>, <NAME>, <NAME>, <NAME>

Requirements

Development Requirements

- 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.

Presentation Requirement

- **You will also be responsible for preparing a 10 minute presentation.**

- **This will be a formal presentation.**

- **One in which you explain in detail:**

  - The questions you and your group found interesting, and what motivated you to answer them
  - Where and how you found the data you used to answer these questions
  - The data exploration and cleanup process (accompanied by your Jupyter Notebook)
  - The analysis process (accompanied by your Jupyter Notebook)
  - Your conclusions. This should include a numerical summary as well as visualizations of that summary
  - Discuss the implications of your findings. This is where you get to have an open-ended discussion about what your findings "mean".

Be Glam for the Camera

- All presentations will be recorded…
- So treat it seriously!
- These can be great portfolio pieces if you invest the time.

Suggested Data Sources

Suggestions for Data Sources

Stick to data sources that:

- Are sufficiently large
- Have a consistent format
- Ideally contain more data than needed
- Are well-documented

Feel free to ask your instructors for input!

Example Project Ideas

Private Investigator

- Use aggregate crime data from different police precincts in a city to uncover patterns in criminal activity.

- Most crime in NYC takes place in the summer. Can you uncover similar patterns in your city of choosing?

- What do your results suggest about how police should plan their patrols? About how best to distribute law enforcement resources over the calendar year?

Uber Rides & Weather

- No one likes to walk in subzero temperatures *or* scorching heat. Do people use Uber more when the weather is uncomfortable?

- Using Uber ride data from Kaggle and data from a weather API, find out if people take Uber more during summer and winter; and if there are relationships between daily temperature and ride frequency.

- What do the results tell you about surge pricing strategies and commuter habits?

Bullying & Crime Rates

- Bullying and violent crime seem like they should be related. Can we find a correlation between frequency of bullying rates of violent crime?

- Using Data.gov's data on bullying and data from police districts of your choosing, investigate relationships between bullying and violent crime frequency and location (zip code, city, etc.)

- Do these two activities track each other? What do the results suggest about society and public policy?

Today's Focus

By End of Day - Today

- **Brainstorm possible ideas**
- **Begin Data Research**
- **Write a description of the scope of your research**
- **Create and slack on "SATURDAYCLASS" a short 1 page proposal (PDF preferred) listing out each of the following:**
  - **Project Title**
  - **Team Members**
  - **Project Description/Outline**
  - **Research Questions to Answer**
  - **Data Sets to be Used**
  - **Rough Breakdown of Tasks**

Questions