**CRANG**

**Project Proposal**

**Project title**: Effects of weather on crime

**Team members**: Chuck, Ryan, Alex, Gokul and Nandini

**Project descriptions/outline**

Identify/Organize APIs by 1/12 (ALEX)

Create google doc to share resources1/12 (Nandini)

Reading in the API/Merge information and create data frames by 1/12 (GROUP)

* Detroit (Nandini)
* LA (Gokul)
* Kansas City (Alex)
* DC (Alex)
* Chicago (Alex)
* Weather Maps (Chuck)
* Solar/Lunar (Ryan)

Analyze crime data by 1/15

1 Temperature (NANDINI)

2. Precipitation (TBD)

3. length of day (TBD)

Generate scatter plots by 1/17 (TBD)

Create visual project and complete materials due by 1/18 (TBD)

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.

Create

**Research questions to answer**

Does weather have an impact on crime rates?

What are the patterns of criminal data in 5 large US cities?

Will examine compare to weather broken down by temperature, precipitation and length of day, by day

Excluding white collar crime, premeditated crime?

Cities with more annual precipitation

**Data sets to be used**

· Weather mapy

· https://data.world/baltimore/baltimore-crime-data

· data.world

· Baltimore Crime Data - dataset by baltimore

· BPD Part 1 Victim Based Crime Data

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· https://data.world/dcopendata/washington-dc-crime-incidents/workspace/file?filename=Crime\_Incidents\_\_2016.csv

· data.world

· Washington DC Crime Incidents - dataset by dcopendata

· Washington DC Crime Incidents 2016

· https://data.world/losangeles/lapd-crime-and-collision-2016

· data.world

· LAPD Crime and Collision 2016 - dataset by losangeles

· LAPD Crime and Collision Raw Data for 2016

· https://data.world/data-society/kansas-city-crime-data

· data.world

· Kansas City Crime Data - dataset by data-society

· Crime Data of Kansas City, Missouri form 2009-2016

**Questions and charts**

Questions**:** What relation is there between average daytime temperature and total number of crimes committed during that day? The number of violent crimes? Number of traffic citations, etc.

What relation can be found between the daily average humidity and number of crimes committed during that day? The number of violent crimes? Number of traffic citations, etc,

Is there a relation between the daily average heat index and the crime statistics?

How does the total number of hours of daylight affect the crime rate? Is there a significant difference between quarterly crime rates of cities lying in different longitudinal ranges?

Do more crimes take place during the night or day? Are crime rates different during daytime and nighttime hours?

Charts**:**

Scatter plots: maybe a plot with x-axis showing daily average temp, y-axis showing daily average humidity, with each point representing a day of the year, colored according to the city name and sized according to the number of crimes that was committed during that day. Simpler might be x-axis is average daily temp, humidity, rainfall, etc, and y-axis is average number of crimes committed on days that temperature., humidity, etc.

**Rough break down of tasks**

· See the timeline above

**Miscellaneous Notes**

Pick a random sample of 100,000 crime data from 5 cities and merge information for 2016 and looks at trends.

Then analyze the trends in the data based on weather (temperature and precipitation, length of days)

*Baltimore: Date, time, location, inside or outside, crime code*

*DC: Date, time, location, primary description*

*Chicago: location, arrest or not, log/lat,, primary description (theft, battery,ect)*

*LA: long, lat, adult arrest, status description, crime description, crime code, road, area, time, date*