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Flu Influences by Weather

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# OVERVIEW

Our project is to uncover patterns in influenza case breakouts based on weather patterns. We’ll examine relationships between types of influenza and location; trends in influenza over the course of the year; and related questions, as the data admits.

# RESEARCH QUESTIONS to ANSWER

1. What is the relationship between flu and temperature?
2. What is the relationship between flu and other weather parameters (e.g. humidity, precipitation totals)?
3. Is there a common relationship amongst different types of flu (A vs. B)?

# DATA SOURCES

1. CDC Website
   1. <https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>
      1. Influenza cases by state, type
2. WHO Website
   1. <https://www.who.int/influenza/gisrs_laboratory/flunet/en/>
3. Weather API
   1. [http://api.openweathermap.org](http://api.openweathermap.org/)
      1. Weather data by cities, states
4. Google maps

# TASK BREAKDOWN

Gathering weather & flu data – 15 hours

1. Create python code to convert CDC flu data CSVs in to panda data frame - Beth
2. Create python code to pull open weather API data - Mark
3. Convert open weather data in to panda datasets & add State, Year, & week columns - Brodie

Merging datasets and Analyzing – 10 hours

1. Merge datasets on like columns
2. Run correlation and comparison studies - look for trends
3. Compare linear regression results
4. Overlay results on Google Maps as heatmap

Presentation Prepare – 10 hours

1. PowerPoint
   1. Title Slide
   2. Motivation & Summary Slide
   3. Questions & Data
   4. Data Cleanup & Exploration
   5. Data Analysis
   6. Discussion
   7. Post Mortem
   8. Questions