**Working Title**

“Fires and Rain in Brazil”

**Outline**

Analyze the relationship between annual rainfall and forest fires in Brazil by State.

**Team Members**

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**Step 1: Decompose the “Ask”**

Primary analysis:

How do precipitation rates vary across Brazil, by state/geography?

How does the amount of precipitation change, given seasonality?

How do forest fires vary across Brazil, by state, by state/geography?

How does the number of forest fires change, given seasonality?

Secondary questions:

Outlier events, if any? 10-year forest fire or 100 year flood?

Magnitude and frequency of fire and rainfall events? Increasing vs. decreasing over time.

**Step 2: Identify Data Sources**

Government of Brazil via Kaggle

<https://www.kaggle.com/fabiopotsch/precipitation-in-brazil>

<https://www.kaggle.com/gustavomodelli/forest-fires-in-brazil/data#_=_>

2 data sets:

* monthly precipitation and number of forest fires by
  + month
  + state (25 out of 27 states reported)
  + from 1998 to 2017 (approximately 6,000 data points in both sets)
* looking at a possible third data set which tracks deforestation by year by state by hectare

**Step 3: Define Strategy and Metrics**

Graph and Table of average annual rainfall per year by state

Graph and Table of average annual rainfall per year by state

Geographical heatmap for rainfall and forest fires

Look at correlation between rainfall and forest fires across geography, seasonality, frequency, magnitude of events

**Step 4: Scrape Data**

Merge 2 csv data sets

* Forest Fires by state by month by year
* Precipitation by state by month by year

Eliminate NAN’s

* Missing data for unreported states (first pass, there are 2 states missing: Parana, Rio Grande do sul)

**Step 5: Build Retrieval Plan - Pull Data with Python/Yelp API**

* Looking at a possible third data set which requires more formatting
* Google Maps API:

https://console.cloud.google.com/google/maps-apis/overview?consoleReturnUrl=https:%2F%2Fcloud.google.com%2Fmaps-platform%2F%3Fapis%3Dmaps,routes,places%26project%3Dmy-project-1574522664929&consoleUI=CLOUD&project=my-project-1574522664929

**Step 6: Retrieve the Data**

* Already pulled data in csv format for 2 data sets

**Step 7: Assemble and Clean Data to make sense**

**Step 7: Analyze for Trends**

**Step 8: Acknowledge Limitations**

**Step 9: Make the Call or Tell the Story and The Insight (and explain why and provide “the INSIGHT.”)**