

SANCIA YANG

# WILDFIRES IN THE US





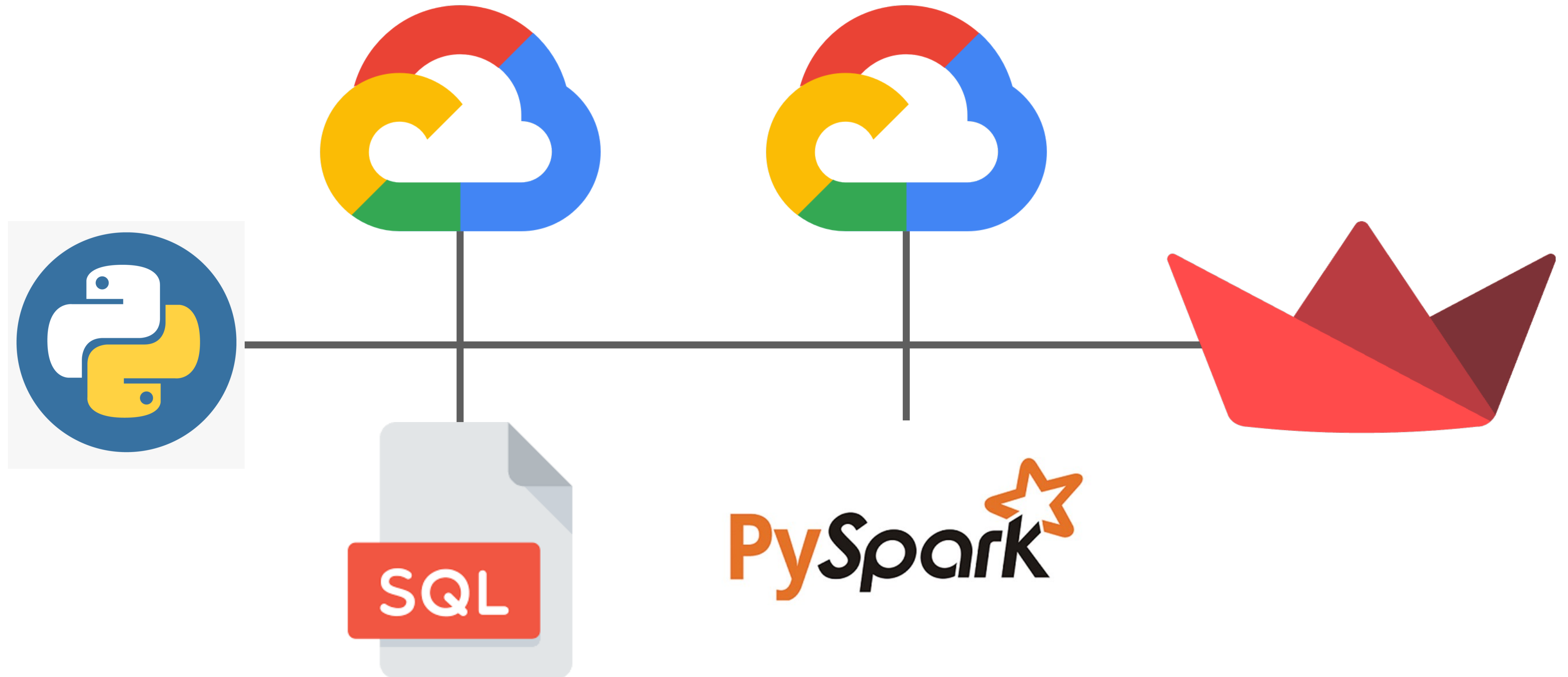
# INTRODUCTION

- Wildfires are increasing due to climate change
- Can the severity of a wildfire be predicted?

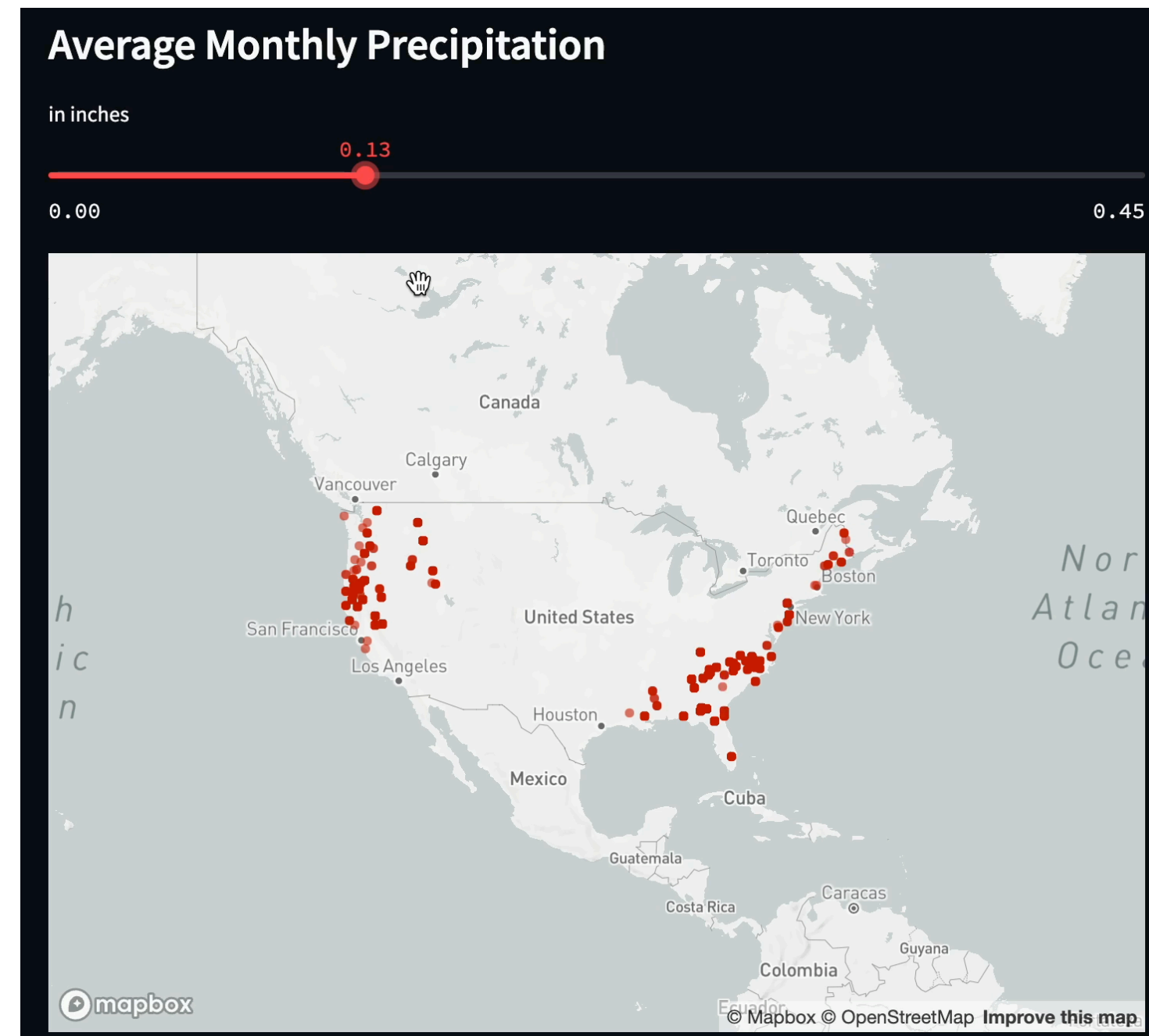
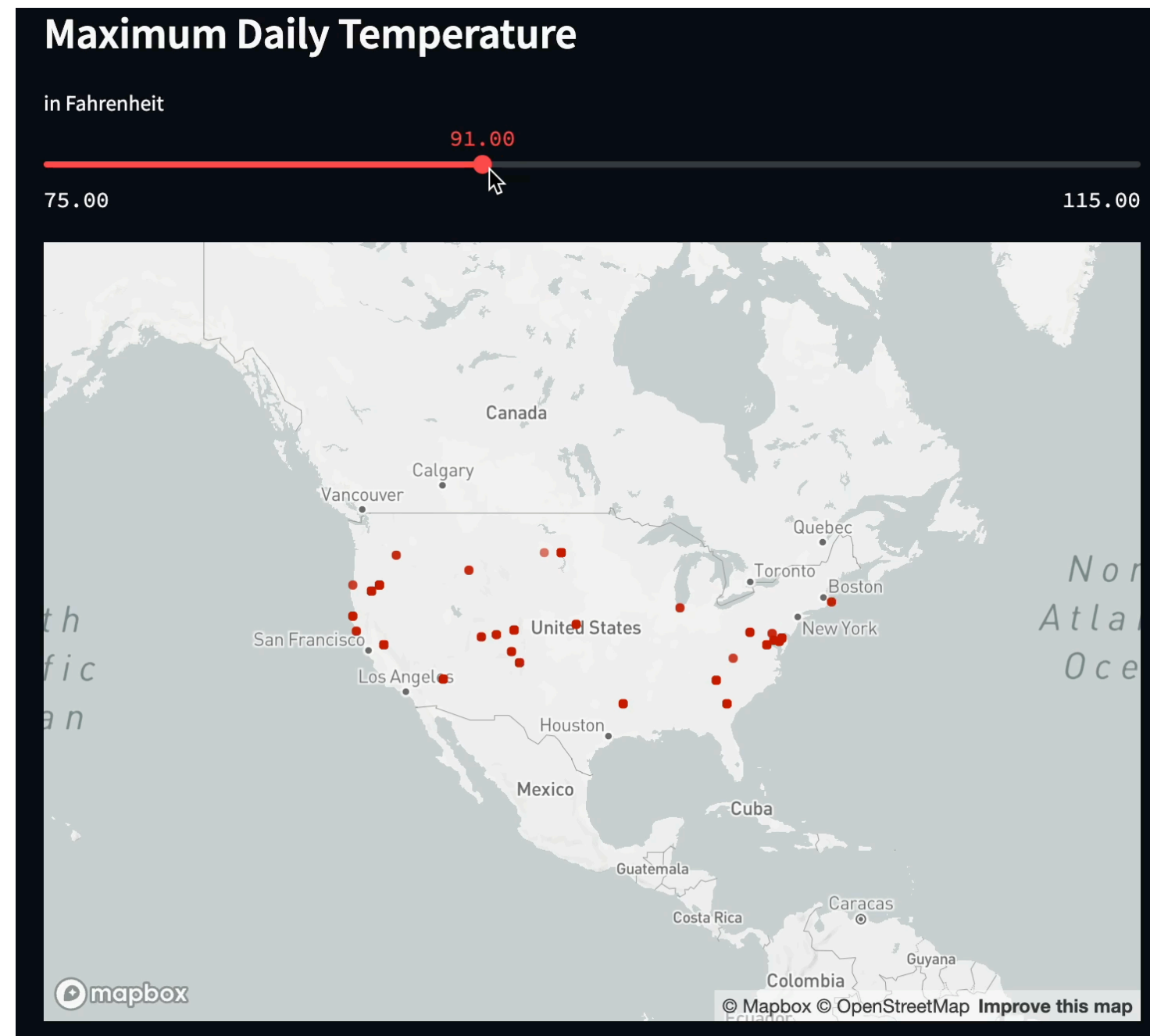
# DATA

- **Dataset #1:**
  - **Information about wildfires from 2000-2005 (~490,000 fires)**
  - **From the US Department of Agriculture**
- **Dataset #2:**
  - **Daily measurements of temperature (max and min) and precipitation from 1,218 weather stations from 2000-2005**
  - **From National Centers of Environmental Information**

# DATA PIPELINE:

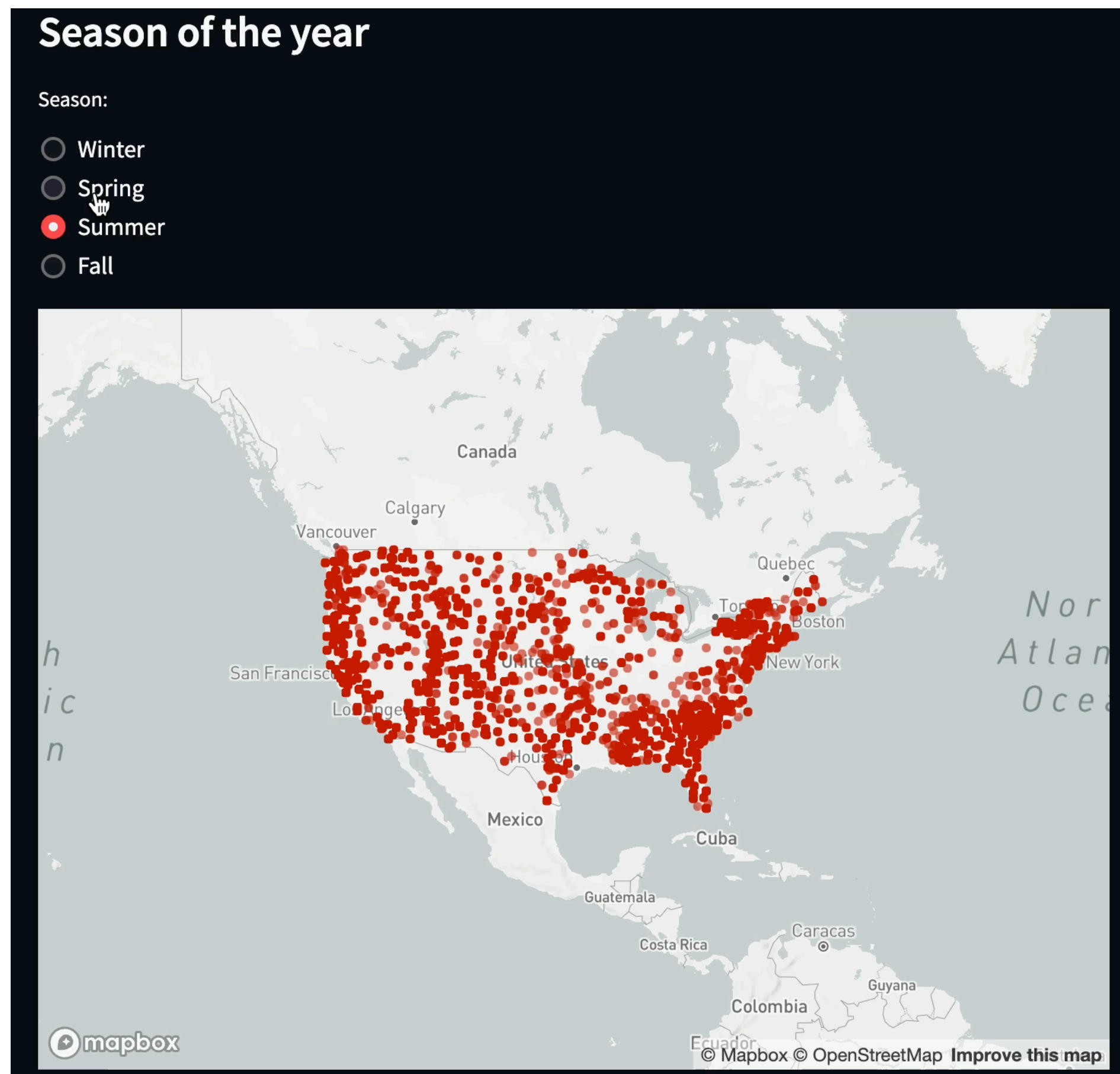


# EXPLORING THE DATA



- More fires with:
  - Hotter temperatures
  - Lack of rain

# EXPLORING THE DATA



- Seasonality does play a role, but not as significant

# STREAMLIT APP

- Prediction of severity (size of fire)
- Features:
  - Latitude and Longitude
  - Maximum and Minimum Daily Temperature
  - Precipitation Level



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Model loaded

Model accuracy:

0.5859574468085106

Enter your Latitude:

0.00



–

+

Enter your Longitude:

0.00

–

+

Enter your daily high temperature (in F):

0.00

–

+

Enter your daily low temperature (in F):

0.00

–

+

Enter your precipitation (in inches):

0.00

–

+

## Predictions

	Class of Fire	Probability
0	Class A	0.0004
1	Class B	0.1354
2	Class C	0.8640
3	Class D	0.0002
4	Class E	0.0000
5	Class F	0.0000
6	Class G	0.0000

## Classes of Fire

**Class A:** one-fourth acre or less

**Class B** - more than one-fourth acre, but less than 10 acres

**Class C** - 10 acres or more, but less than 100 acres

**Class D** - 100 acres or more, but less than 300 acres

**Class E** - 300 acres or more, but less than 1,000 acres

**Class F** - 1,000 acres or more, but less than 5,000 acres

**Class G** - 5,000 acres or more



# CONCLUSION

- Temperature and precipitation do play a role in the likelihood of wildfires, but don't tell the whole story
- There may be better factors to consider, such as:
  - Environment
  - Land use (e.g., very developed)
  - Other meteorological phenomenon (e.g., lightning)