



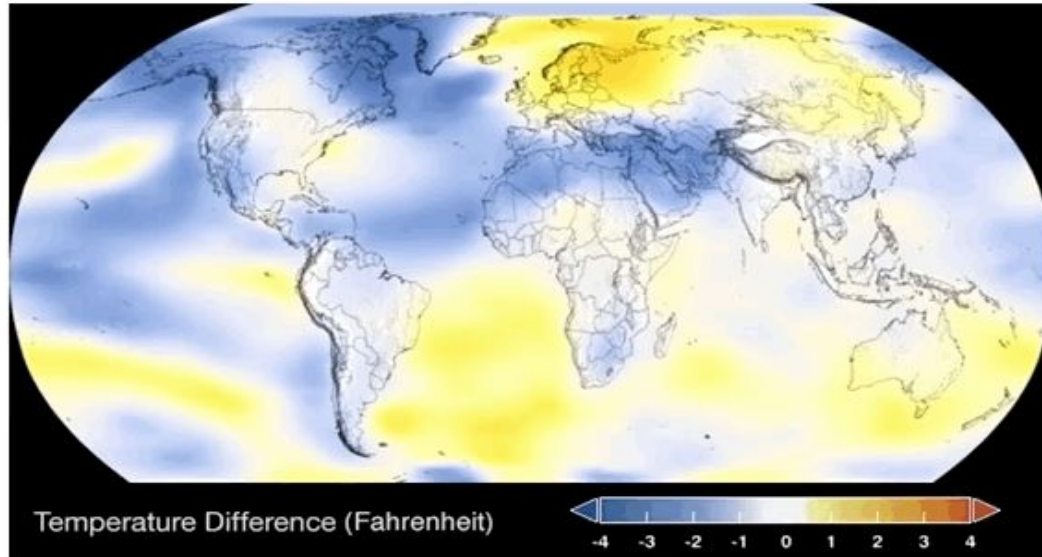
# Feelin' Hot Hot Hot!

## Visualizing Global Climate

By: Sam, Sarah, Ryan, & Taj



# Our Inspiration



1884



2018





# Interactive Visuals for Global Climate

## Features:

1. Dynamic Leaflet and D3 visualizations
2. Temperatures across the world
3. Historical data on climate

# Datasets and Tools Utilized





# Dataset Source



- National Centers for Environmental Information
- Annual Global Land Temperatures for Cities (csv)
- Annual U.S. Land Temperatures for Cities (csv)



118 Years

1900 to 2018



159 Countries

Vast Amount of Data Points



-13°F to 31°F

Range of Annual Temperature Changes

# The Tools!



- HTML/CSS
- Javascript
- D3.js
- Leaflet.js
- Python
- Flask
- JSON
- MySQL & MongoDB
- Jupyter Notebook
- Visual Studio Code



# Database Building



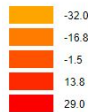
1. Data Cleansing
2. MySQL
3. Building Flask App



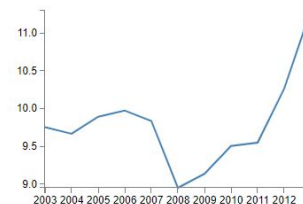
## D3 Globe Visualization

- Utilized D3.js
- Compare average change in temperature over time
- User driven interactive globe
- Chart next to globe for individual countries

Change Layout Change Data Encoding



### Analysis of Climate Change Across The World

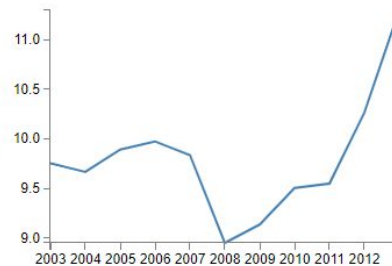
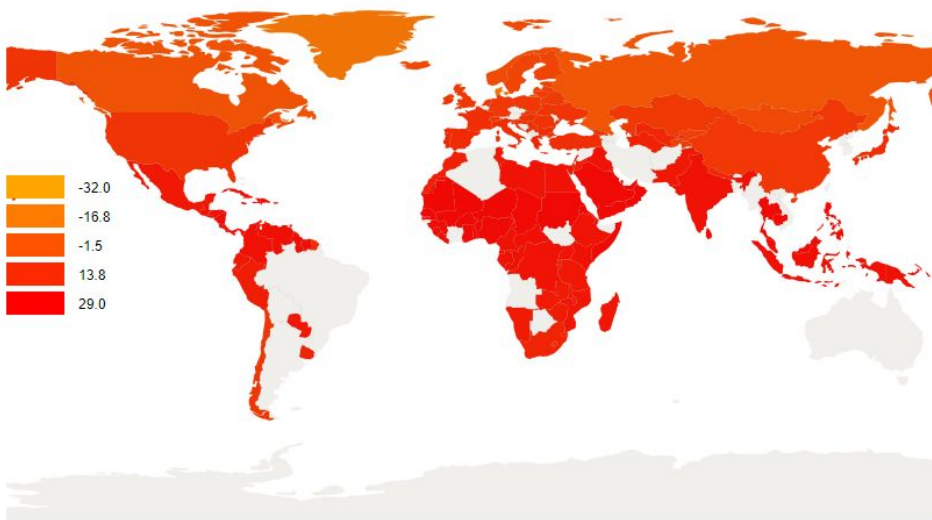


The first visualization is a combination of Globe and Map layouts, the user can toggle between these layouts using the Change Layout button, which initially displays the average temperature in the last 10 years. Although the user can see average temperatures, this doesn't indicate the climate change across the years. To address this issue an extra interaction was

## D3 Full Map Visualization

### Analysis of Climate Change Across The World

Change Layout    Change Data Encoding





## Dashboard

### Feelin' Hot Hot Hot!

Is the climate changing? Are global temperatures actually rising?

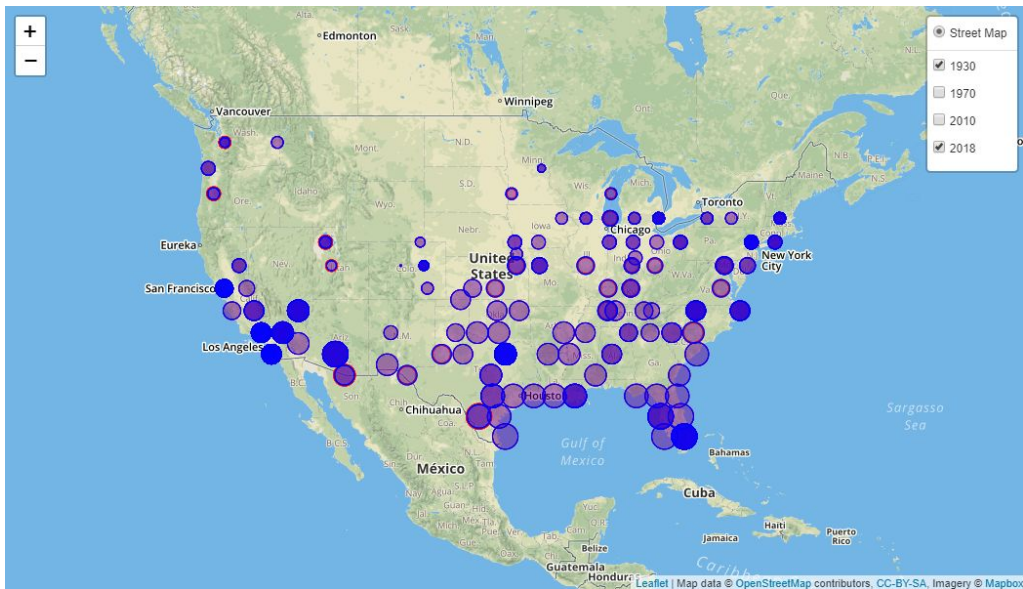
Using data from Berkeley Earth, we...

Map ▾

- Main HTML/CSS home page
- Drop down menu to select between visualizations
- D3 clears and updates visualizations on change with event listener
- Flask app pulls from MySQL, uses jsonify to serve up data

## Leaflet Map

- Circle marker with radius dependent on temperature
- Layers filtered by specific years (1930, 1970, 2010, and 2018)
- Pop ups show city and temperature data



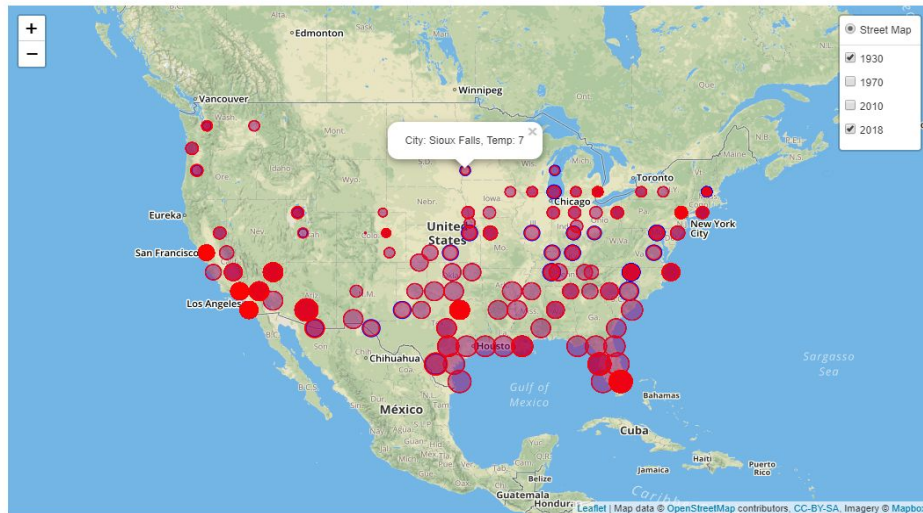


# Feelin' Hot Hot Hot!

Is the climate changing? Are global temperatures actually rising?

Using data from Berkeley Earth, we...

Map





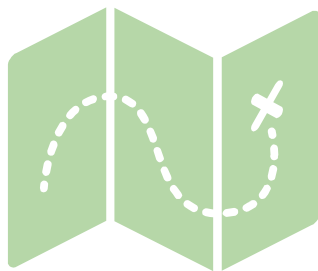


A polar projection map of Antarctica serves as the background. It features latitude and longitude lines, with the South Pole at the center. Various geographical features and historical exploration sites are labeled, including Alexander I. Ld., Bellingshausen 1821, Ross 1842, King Edward VII Land, and several mountain peaks like M. Longstaff and M. Markham. The map is partially obscured by a large red text overlay.

**+1.39°F**

**Global Temperature Change Since 1900**





THANKS!

Any questions?