



EarthxHack

# REAL CLIMATE CHANGE

Soviet (no) Hackers (no) Team 🇷🇺



# Entertainment program for today:

1. Research Question
2. Data
3. Methodology
4. Implementation
4. Results
5. Team



# **What to do if you are curious and distrustful? Find crazy team and answer the next question!**

- Does the climate change exist?
- Visualize climate changes in selected region.





# Data

1

Data Source: **kaggle**

- **Kaggle**, a subsidiary of Google LLC, is an online community of data scientists and machine learning practitioners.

2

Data Link:

<https://www.kaggle.com/berkeleyearth/climate-change-earth-surface-temperature-data#GlobalLandTemperaturesByCountry.csv>

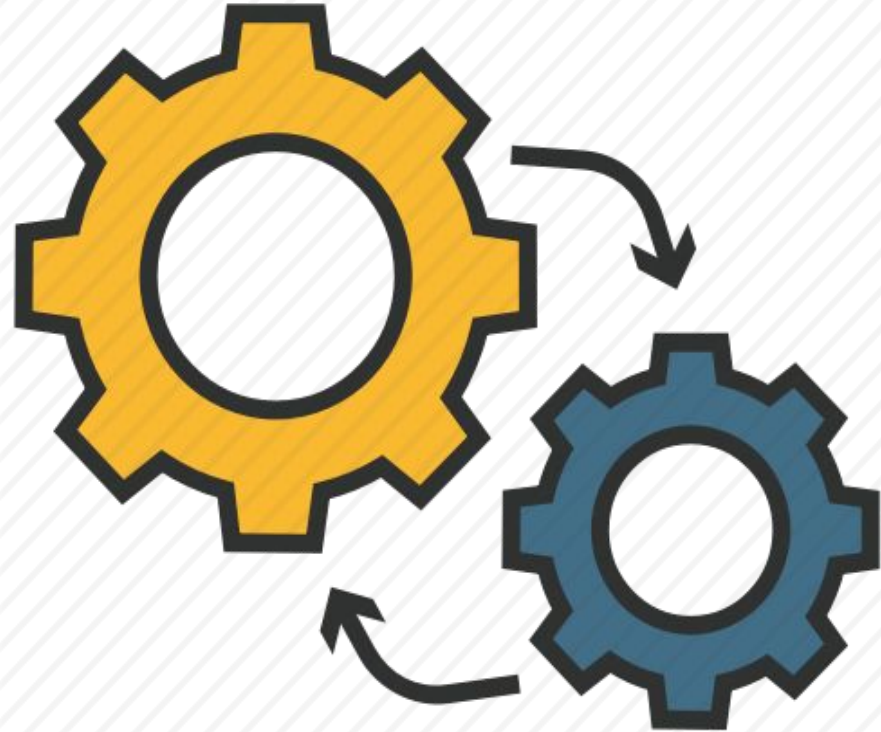
3

Data Description:

- Date
- Country
- Average Temperature
- Average Temperature Uncertainty

## Methodology

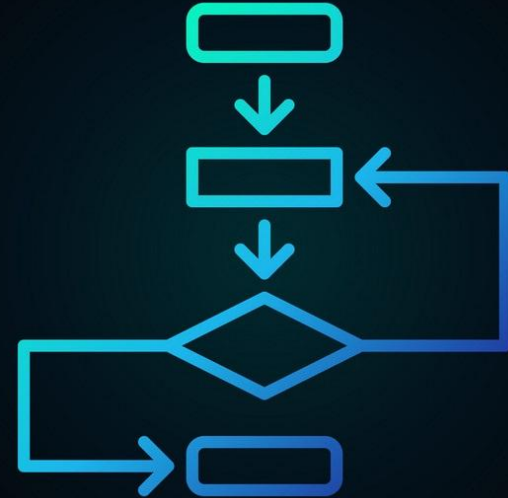
1. Find the difference between 10-years average and the-rest-time average for each state.
2. Visualize the findings in a natural and representative using a map chart.



# Implementation



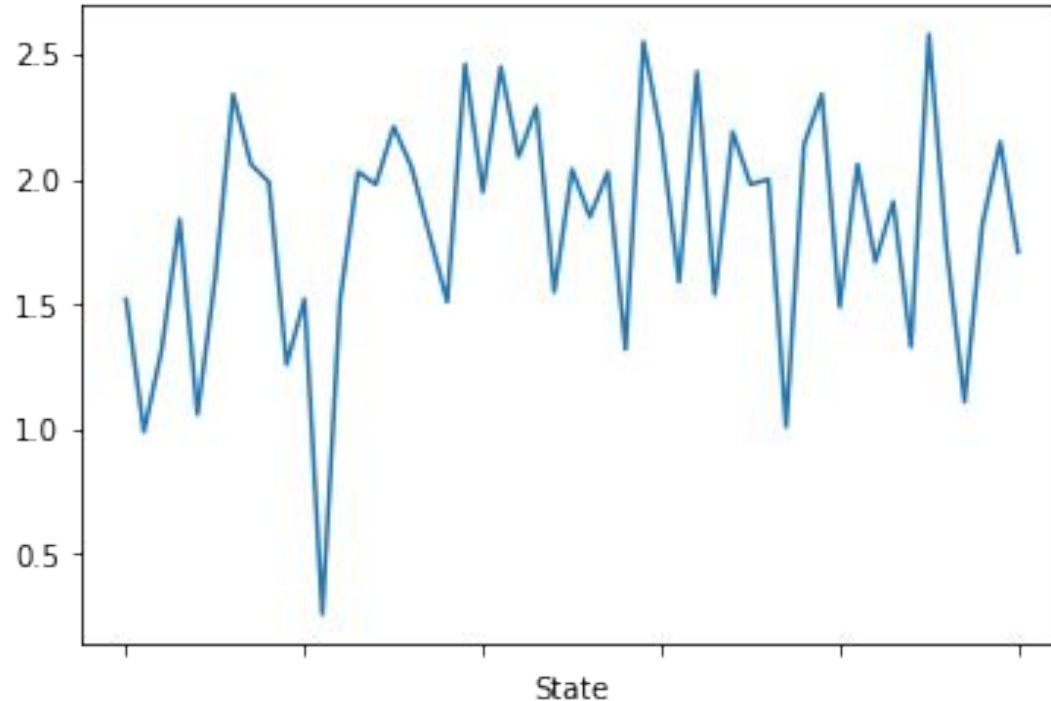
- **Programming Language:** Python
- **Used libraries:** pandas, geopandas, fiona, fiona.crs, requests, pandas, json, numpy, trollius, folium, branca
- **Main Functions:**
  - a. `pd.read_csv`
  - b. `gpd.read_file`
  - c. `pd.read_json`
  - d. `gdf.merge`
  - e. `fiona.crs.from_epsg`
  - f. `gdf1.sort_values`
  - g. `folium.LinearColormap`
  - h. `folium.Map`
  - i. `folium.GeoJson`
  - j. `folium.LayerControl`



# Results: Does the climate change exist?

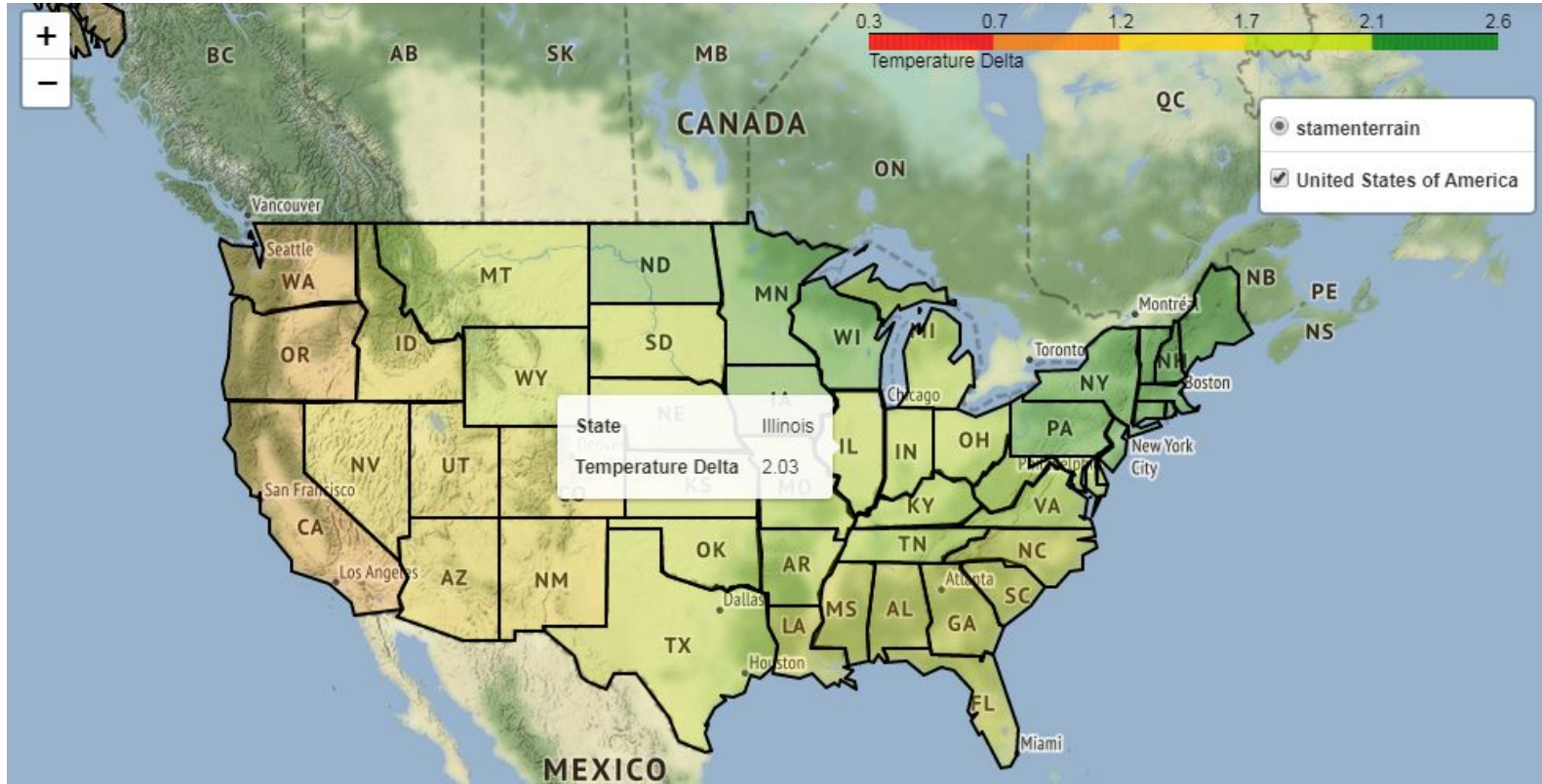
State	AverageTemperatureLast10	AverageTemperatureWoLast10	Delta
Alabama	18.57	17.05	1.52
Alaska	-3.92	-4.91	0.99
Arizona	16.69	15.36	1.32
Arkansas	17.39	15.55	1.84
California	15.37	14.31	1.06
Colorado	8.52	6.91	1.61
Connecticut	11.33	9.00	2.34
Delaware	13.93	11.87	2.06
District of Columbia	13.89	11.90	1.99

# Results: For all states the average is above zero!





# Results: Visualization via a Map



# Conclusion:



- Based on our research we found that there is a global change in climate temperature in USA.
- There is also a difference in the amplitude. East coast shows bigger change in temperature.



# Gang



**Ms Brain**

Nadzeya  
Yakimchyk

Panko  
Aliaksandr

**Mr Curly Hair**



**Mr Japan**

Maksim  
Gritsenia

Sergey  
Nasonov

**Mr Industrialist**



**Mr Success**

Stanislav  
Belochvostov

*Thank you!*



You have permission to rest.  
You are not responsible for fixing everything that is broken.  
You do not have to try and make everyone happy.  
For now, take time for you.  
It's time to replenish.

UNKNOWN



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