EarthxHack

REAL CLIMATE CHANGE

Unstoppable Progress 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 the USA.

1

Data Source: kaggle

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

2

Data Description:

- Date
- State
- Average Temperature
- Average Temperature Uncertainty

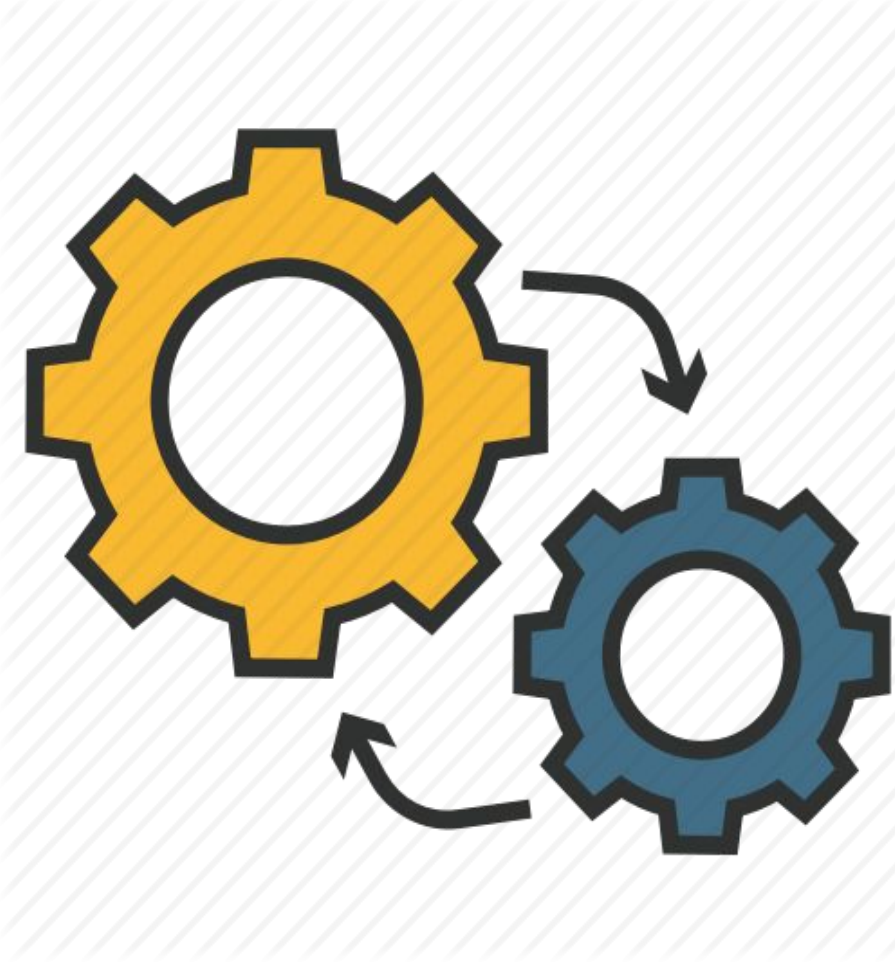
3

Data Source:

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

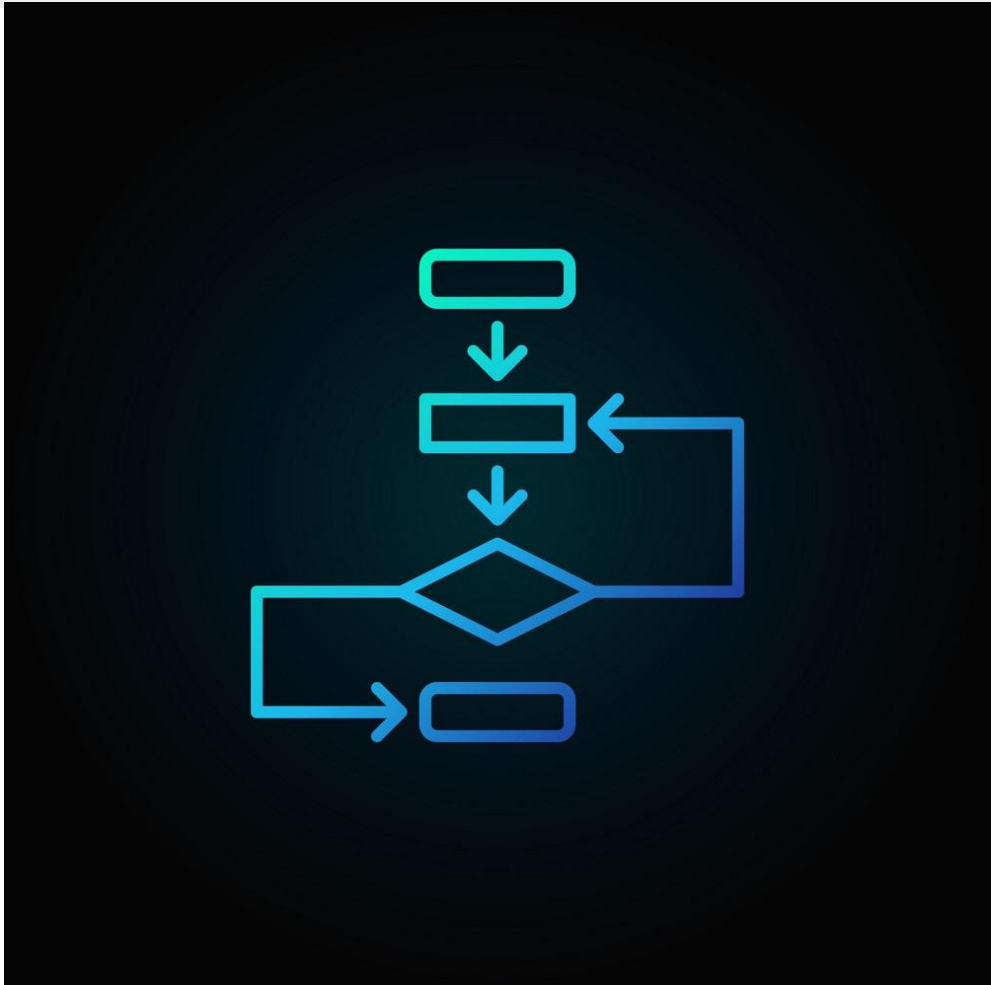
Methodology

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 way using a map chart.



Implementation

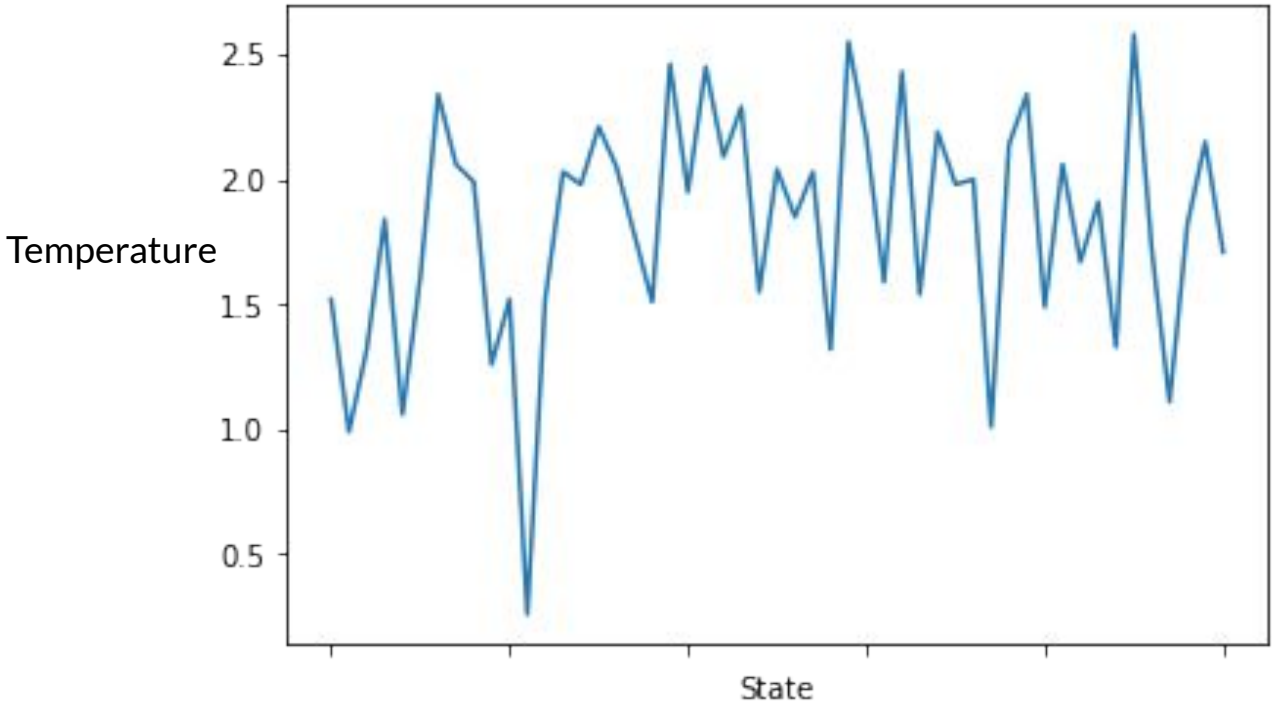
- **Programming Language:** Python
- **Used libraries:** pandas, geopandas, fiona, fiona.crs, requests, pandas, json, numpy, trollius, folium, branca
- **Main Functions:**
  a. pd.read_csv
  b. gpd.read_file
  c. pd.read_json
  d. gdf.merge
  e. fiona.crs.from_epsg
  f. gdf1.sort_values
  g. folium.LinearColormap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



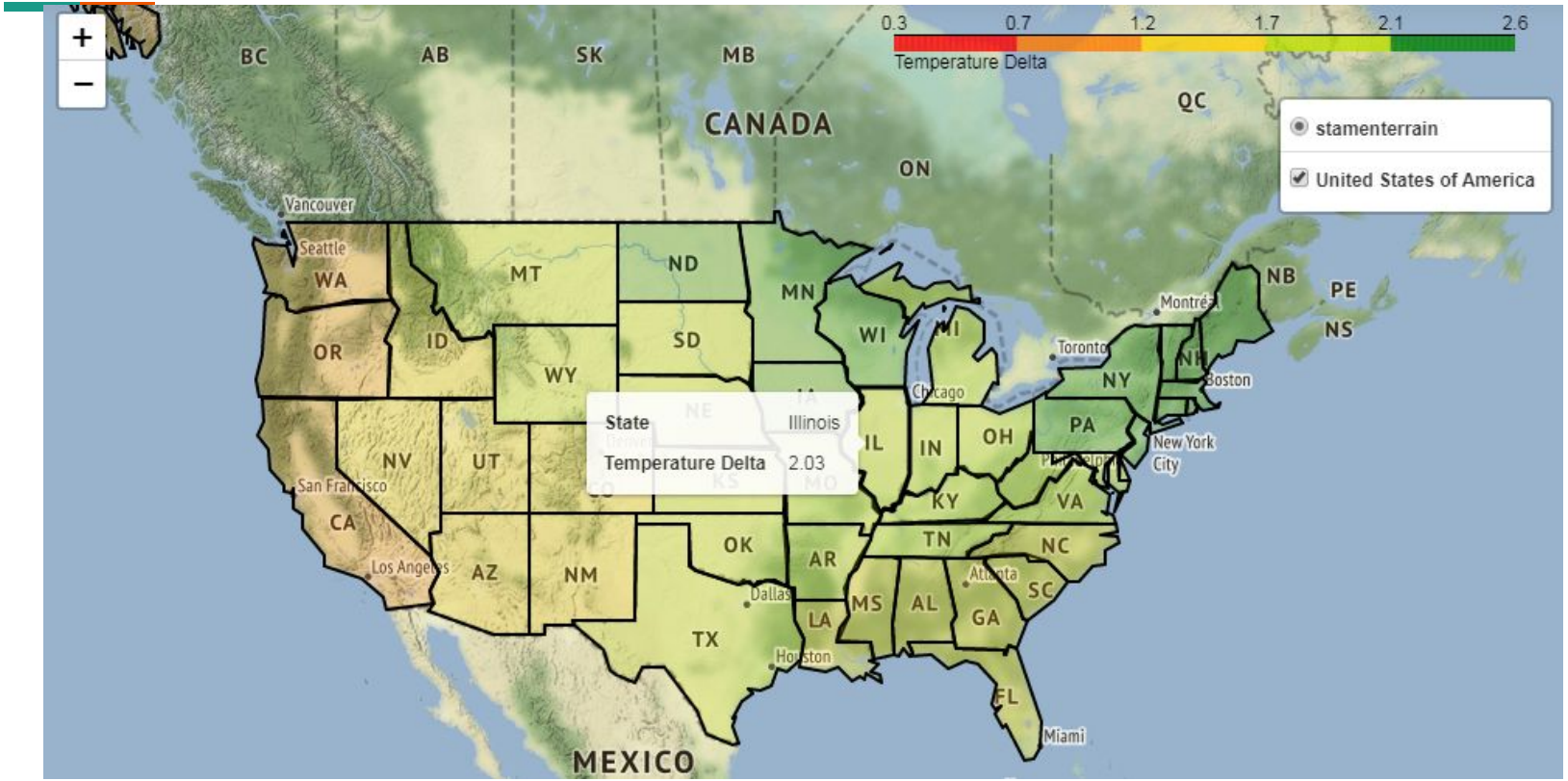
Results: Does the climate change exist?

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 temperature in the US.
- There is also a difference in the amplitude. East coast shows bigger temperature change.

Gang

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Mr Curly Hair

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Mr Industrialist

Mr Success
Stanislav
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Thank you!