U.S. Climate Analysis

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Project Concept

After many years of research, it is common knowledge among scientists that recent climate change is man-made and is likely already causing weather and environment changes across the globe. However, action on climate is arguably not fast enough, due in part to polluting individuals and nations (such as the United States and its citizens) not experiencing as many harmful effects as many other (less polluting) nations. It could be possible to persuade policymakers to take action on this issue by making local effects in the United States more visible.

We would like to utilize epa.gov climate change indicators data, as well as other public data documenting weather events, to demonstrate that climate change has a potent impact here in the United States. If there is evidence of a local impact, then federal and local interest groups may be more motivated to take action.

Users, Tasks, Example Insights

Users would include government policymakers, NGO activists, and interested citizens who would like to know the potential impact of climate change in the United States. *Tasks* would include demonstrating a relationship (across both geography and time) between climate change indicators such as temperature increases, sea level increases, and CO2 output with destructive events like drought and extreme storms. This enables *insight* into the actual local effect of climate change in the US, and if evidence aligns as expected, gives a reason for voters and policymakers to take action against it.

Data Sources

The EPA has public data available on many climate change indicators - such as greenhouse gas emissions, US and Global Temperature, sea level, natural disasters and more - at locations like https://www.epa.gov/climate-indicators/ and https://www.epa.gov/natural-disasters. There are also open-source datasets like https://www.kaggle.com/datasets/sobhanmoosavi/us-weather-events available. It should be possible to combine (join) these datasets on the basis of geography and time, then visualize the relationships between climate change indicators and potentially destructive changes in the United States.

Team Charter

How do we communicate when issues arise?

We direct-message on Slack, and agree to contribute to each others' questions and problems. For complex or severe problems, we can arrange a video meeting and/or contact an instructor.

How do we balance workload?

We communicate at least 1 week in advance of each deadline regarding our time commitments and availability, and balance assignments to get the work done while protecting each team member's work-life balance. We check-in one day ahead of each deadline to make sure we are on track.

When do we meet, and how, and how often?

We communicate via slack direct messages as described above. We also check-in via video call at least once a week (while actively working on the project), either during class or at another time, to verbally discuss the state of the project and make a plan for the week's work.

Any other details?

Tim is going on an international vacation in Europe from June 21 to July 20. James has a family vacation the week of July 4th. Additionally, Tim plans to work primarily with Python and Altair, while James plans to work primarily with Tableau. Both teammates are still expected to contribute their fair share of work to the project, harmonize the technologies used, and communicate their burdens in advance of any deadlines. Both teammates agree to accommodate each other in terms of setting up the timing of meetings, the timing of when each teammate creates work for the project, etc., as long as those timelines are in advance of class deadlines and fairly communicated with each other.

Works Cited

United States Environmental Protection Agency, available at epa.gov, accessed May 20, 2024 and June 9, 2024.

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Moosavi, Sobhan, Mohammad Hossein Samavatian, Arnab Nandi, Srinivasan Parthasarthy, and Rajiv Ramnath, "U.S. Weather Events (2016-2022)," January 2021, available at https://www.kaggle.com/datasets/sobhanmoosavi/us-weather-events/data, accessed May 20, 2024 and June 9, 2024.