Final Project Design Report

The audience we chose to focus on for this project was the general public, because climate change is a global issue that can't be resolved unless the masses are informed and aware of it. We wanted our artifact to evoke emotions more than anything, and by keeping this focus in mind, we were able to create visualizations that should create a sense of shock and urgency in our audience. We also wanted to educate our audience on the general scale of the problem, which is why we used maps to demonstrate the climate change in each country. By combining these two factors together, we wanted to give the audience a reason to want to act, or at least keep climate change in mind as they leave the room and go about their lives. These needs influenced our design decisions directly, as they were the driving force behind why we chose the type of our visualizations. Other simple visualizations like bar graphs can only communicate so much information, so we chose to try and use the most effective chart (in this case, maps) to prove the existence of climate change and show how pressing of a matter it is.

1. **Story Structure**
    - Outline how information flows through your artifact (narrative flow, dashboard sections, or scrolling progression).
    - Explain how *visual hierarchy* and *grouping* guide attention and storytelling flow.
    - If interactive: describe how user pathways or filters support story discovery.

In our artifact, we chose a chronological flow, moving from the past to the present to build urgency around the effects of climate change. We start by displaying the historical baseline in 1961 to some of the more recent states of climate change in 2022. These visualizations show the global conditions transitioning from a cooler climate to a more alarming climate. This can also be reflected in the line graphs that represent the world and the US. These line graphs display how much the temperature fluctuates from the baseline. While the world graph shows the global trend rising steadily, the US graph shows a greater variability. Visual hierarchy, through the layout, color, and spacing, helps guide the reader from a top-to-bottom flow. The user starts with the bold headline to establish the core message. Next, the visualizations are grouped in the top and the center, showing geographic change. Additionally, the line charts are grouped together to show more of the time-based changes. Lastly, the text boxes kind of act like transitions between the comparison maps.

2. **Design Choices**
    - Discuss color, typography, layout, preattentive cues, interaction design, clutter reduction, and accessibility choices.
    - **Chart & Encoding Rationale:** explain *why* you chose each chart or visual form — what it communicates better than alternatives.
    - Reference any relevant design principles or frameworks (e.g., Gestalt, storytelling with data, cognitive load, affordances).

In our poster, our decision choices highlight and emphasize specific points that we wanted to include in our presentation. For example, in our maps, we use the blue to red gradient to demonstrate the scale of climate or temperature change in whatever time period we use for that specific graph. This helps us show the highs and lows on a global scale and compare countries.

3. **Evaluation & Iteration (Optional but encouraged)**
    - Describe how you tested or received feedback (peer critique, pilot viewing, instructor feedback).
    - Summarize what you learned and any revisions you made based on feedback.
    - Note unresolved trade-offs or constraints you intentionally accepted.

4. **Reflection**
    - What worked well?
    - What challenged you?
    - How did this project change your approach to communicating data?
    - What would you do differently with more time or resources?

The map charts were probably the most well suited part of our poster, it aptly showed what our project was about in an effective way. Being able to show a wide array of countries in a chart that is specifically suited for it is immensely helpful in conveying a story to the audience. Along with this, being able to set up the map charts in such a quick way, given the ease of the iso codes provided in the dataset worked well. As for the challenges we faced, this mostly pertains to delving into the best manner in which to show net change over a time for a given country. You can show the change in a country's temperature in many different ways like taking the max and min temperatures and using the different (the range), or using the first year minus the last. In our poster, we used the difference between the averages of the first 5 years and the last 5 years. This prevented any specific volatile years from skewing the data, as well as, focusing on the change between what the general average temperature was back in the 60s to what it is now. This project helped invoke the idea of trying to find chart types that are specifically apt for displaying the data, this is because using the map charts was an amazing and apt way to demonstrate the change of the climate over time across countries. With more time and resources, we would’ve like to make the poster more aesthetically pleasing as well as doing further analysis into patterns that are demonstrated in the analysis of the global temperatures over time.