CSCI 5609: Video Script (Check-In #6)

David Kelm and Noah Hendrickson

Script Draft

[Title/Authors]

Introduction (~30 sec)
[Montage of Various Vis Tools Being Used]
[i.e. dragging countries, switching years, opening/closing map]
In the age of rapidly progressing technology, air pollution and the health of the planet we live on remains a constant cause for concern and study. In order for change to be made, information first must be provided. We present [name], a pollution data visualizer that allows users to ingest pollution data across the world in a concise, easy to use, and customizable manner.

[Show Menu / Something that includes the data]
The data included is constituted of levels of PM2.5, PM10, and nitrous oxide pollution in grams per meter cubed and covers 20(?) years and 118 countries across the globe. *[swap between types of data, years, countries during this]*

[Show images of all three screens]
The visualization consists of three screens.

Vis Feature 1: The Link Between the Map and the Bar Charts (~1 min)
[Zoom in to the image of the bar data screen]
Upon loading the visualization, the user is on the main screen which contains an empty slot to view a country's data.

[Drag country from side menu into frame]
By dragging in one of the countries from the side panel, the data for that country is then displayed. Alternatively, by clicking on the map selector tool,

[Click on map selector tool button to switch to map view]
the user is presented with a tool to select a country from a world map. This map also provides an overview of the data. Notice the color mapping for each country. It changes based on the level of pollution with cool colors towards the low end and warm colors towards the top end in order to give the user an intuitive idea about whether the level of pollution is "good" or "bad".

[Change type of pollutant displayed]

Here, we cycle through the pollutants. Each pollutant has a visually different color mapping to make them easily distinguishable from one another.

[Hover over a country of interest]
Once we observe a country we want to know more details about, it can be clicked on,

[Click on the country to return to the main screen]
which selects the country and returns to the main screen having selected that country, building off of the idea of "details on demand". Notably, the bars follow the same color mappings as the map visualization, providing a consistent visual style across all screens.

[Fade out]

Vis Feature 2: The Options Menu & Country Comparisons (~45 sec)
[Fade in]
[Start on bar chart screen, move mouse to settings button]
While viewing data for one country can give some insights, the user will often want to directly compare multiple countries to each other. By going to the settings menu,

[Click to open settings menu. Change some of the settings]
the user can customize the visualization. This includes changing the data aggregation method, the pollutants being displayed, and the number of bar charts being displayed. To compare countries, the user can increase the number of bar charts.

[Select to display 2 different bar charts and return to the bar chart screen.]
[Select countries for each of the two bar charts]
Then, using the same tools as before, two countries can be selected to be compared to each other. The bar charts share the same axis scaling and begin at the same location so that the data values for each country can easily be visually compared.

[Fade out]

Vis Feature 3: Year Changing in the Map and the Bar Charts (~45 sec)
[Fade in]
[Start on bar chart screen with three empty bar charts, open the map selector for one of them]
In addition to comparing different countries to each other, the user may also want to look at how air pollution in a country changes over time.

[Cycle through several years on the map screen]

In the map selector, the year can be cycled through using the UI elements. To get a better comparison over time, however, the user can

[Select a country on the map and then select the same country for all bar charts]
select the same country for all of the bar charts and adjust the years for each of the bar charts. This enables a side-by-side comparison over time similar to the side-by-side comparison used to compare countries to one another.

[Fade out]

Conclusion & Future Work (~30 sec)
[Fade in]
Our tool provides an interface for the user to explore the levels of pollution across the globe, however, our dataset is quite incomplete meaning the user is left out of a lot of information.

[Open map and display how many years and countries have no data]
Notice how many countries across the years are grayed out–for example the only country with data reported in 2022 is South Africa! Part of this is the difficulty of collecting data and perhaps other parts are due to the state of the world. In the future, we'd like to see our visualization adapted to include more pollution datasets in order to fill in those gaps of data.