Reflection Statement: Collaborative Activities in the Assignment

The course project presented a unique opportunity for collaboration among fellow students to address the impact of wildfires on specific cities in the US. The focus of this reflection is to highlight specific insights I gained through collaborative activities and how these interactions influenced my approach to the assignment.

In Part 1 of the project, we were encouraged to share code snippets, statistical approaches, and visualization techniques to collectively address a common research question. This collaborative environment allowed us to work with the same data structure and context. I engaged in multiple interactions with classmates, primarily focusing on understanding code and methodologies they shared, aiming to leverage their insights to improve my analysis. One of the main instances where I really appreciated the help offered to me by one of the peers was when I was accessing the AQI API. I received insightful information from my peers about how to parse the data for your own city by dumping all the data received first in a list and then arranging that data year-wise inside a new dictionary.

Another collaborative experience during this assignment was the process of extracting the required dataset. It took approximately one hour of machine-runtime to successfully extract and filter the dataset. The collaborative efforts involved sharing techniques, tips, and insights on the most efficient and effective ways to extract the dataset from its source. We discussed how cloud platforms like Google Colab were taking close to 5 hours for the same extraction which our local desktops were able to do in about an hour. This saved me a lot of time as I generally prefer working in Colab.

Now talking about the technical learning, I had from this project, I gained invaluable experience of working with geodetic distances and how to compute distances between objects around the globe.

It was fascinating to comprehend the notation of attributes and geometry within a GeoJSON file. Working with various projections and determining which one to use for distance calculations was also an important aspect of this assignment and a worthwhile learning experience for me. Even though it took some time to get to know the data, I think it was really helpful because I now know about a whole different kind of data and might use datasets similar to this one in the future.

I also used code from Professor David McDonald's Python notebook to call the AQI API made available by the EPA and read the wildfire data from the USGS. But I did all of the

preprocessing and coding myself, and I collaborated with my peers on methods like processing the API response and ideas for the smoke estimate.