Project Manual

Introduction:

The goal of the project is to provide people with information regarding air quality. A website will be created to inform people about air quality. The website will link to PlumeLabs, IQAir, and AirNow so that people can check the air quality in their local area. The website will also contain information regarding basic measurements of air quality, what to do if air quality is poor, how government actions related to air quality, the health effects of differing air quality, and environmental justice with regards to air quality.

Air quality is important to consider as climate change is on the rise. Progressing climate change has increased the amount of wildfires, which in turn decreases air quality.

Research (new):

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Requirements:

- Github - Github can be used to store the files for the project as well as for version control and easier collaborative team effort.
- Github Pages - Pages allows for the website to be viewed on the internet.
- React - React can help better organize the different parts of the website.
- Google Documents - Google Documents can be used to write out the documentation needed for the project such as the Project Manual and Project Progress Documents.

Database:

Data arrives from the research of other websites such as PlumeLabs (Air Quality Chicago, IL: Live air quality and pollution Forecasts), IQAir (Chicago Air Quality Index (AQI) and Illinois Air Pollution | IQAir), AirNow (Air Quality Index (AQI) Basics), World Health Organization (Air pollution is responsible for 6.7 million premature deaths every year), American Lung Association (Protecting Yourself from Poor Air Quality: Answering FAQs to help you understand AQI | American Lung Association), Youtube (A Brief History of Environmental Justice).

A database can be created out of data inputted by the users of the website. The user can submit feedback about the website. Once submitted, that feedback can be placed into a database for storage and categorization. Data can also be collected from the quiz. Users can submit their quiz answers, and those answers can be placed into a database to see what people entered as answers for the quiz.

Roles:

Raymond Loi:

I have worked on the project manual, index.html, quiz.html, and environmentalJustice.html. On quiz.html I was able to create 2 questions and which answers can be checked by clicking buttons. On the environmentalJustice.html page, I provide information about air pollution and environmental justice. On the index.html page, I provide general introductory information on air quality and why it is important for human life. I also worked on styling the page with CSS features.

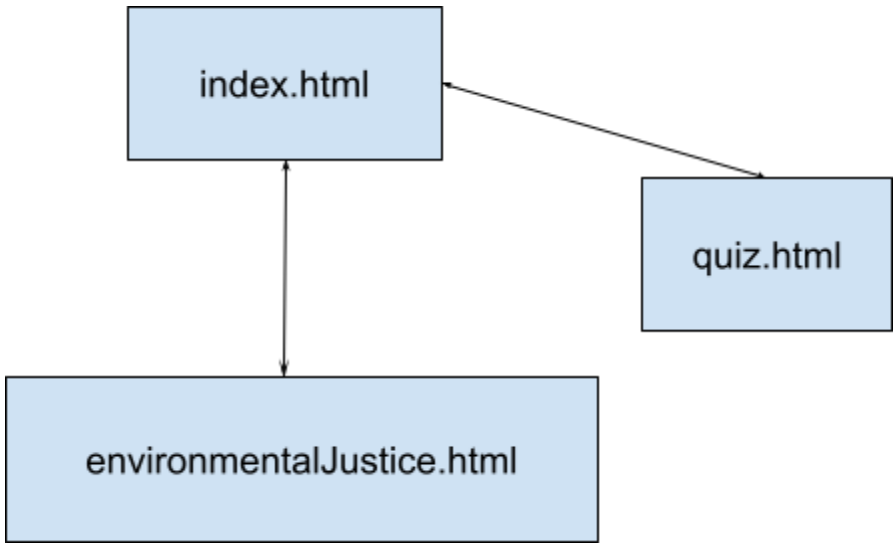
I was able to create a Google slides powerpoint for the Week 11 update and present the powerpoint in class. I was able to research information about air pollution and air quality and summarize that information for the website.

I was able to create the github repositories to store the capstone project's progress. I was able to utilize github pages to test the pages online. I helped with the progress documents of the project.

A general thing I did on the project was learn more about web development. I learned how to use React libraries as well as learn more about building a website.

Application Workflow:

The homepage is located at index.html. index.html links to quiz.html and enivornmentalJustice.html. quiz.html and enivornmentalJustice.hml link back to the index.html (homepage), but not to each other. Given the small size of the website, I believe that a navigation bar can hold all of the web pages for easy access for the users to navigate to.



Features table (listing):

Feature	Feature Description	Software Used	Added, Improved, Already Existing, or Future Feature?
index.html	Informs the user about air quality	React, Github Pages	Added Feature

quiz.html	Allows the user to test out their knowledge after reviewing the website's informative content	React, Github Pages	Added Feature
enivornmentalJustice.html	Informs the user about how air quality relates to the community.	React, Github Pages	Added Feature

Project Planning:

A majority of the project planning has been drafted with Google Documents. Files have also been stored in Github for viewing and organization.

Test Planning:

Running through the websites on different web browsers is important. Although Google Chrome holds a huge share of the web browser market, it is important to check if one's website functions on other browsers in order to include non-Google Chrome users. Testing potential web browsers include: Firefox, Duckduckgo, Edge, Safari, Brave, Vivaldi, Opera.

There should also be testing of the different features of the website's navigation. Proper navigation is key for the functionality of the website.

Once those tests are completed, a more ambitious test would be to see how the website functions on smaller devices such as tablets and mobile phones. The smaller screen size will require different CSS for the user to be able to read and navigate the website more easily.

Future adds:

Intentionally left blank. (TODO)

Conclusion:

Raymond Loi:

What I found challenging was learning how to use React. Learning a new library like React was surprisingly interesting. This experience with React has expanded my understanding of web development. I feel like despite the difficulty being introduced to new unknown concepts, I feel like this web development journey has been a great opportunity for me. Making the unknown known has been very fun for me.

I think I am learning how a group project can work. This is very independent from class in multiple ways and requires me to plan. Usually most classes have a syllabus which guides the class. This capstone project requires me to do the planning to achieve my goals in web development.

I am also learning more details regarding air quality. Before, I knew there were problems with air pollution. But as I do more research for this class, I feel like I am better understanding

the science behind air pollution such as particulate matter and the dangers of high levels of particulate matter.