Green Graphs by **Team Bagel Pizza**

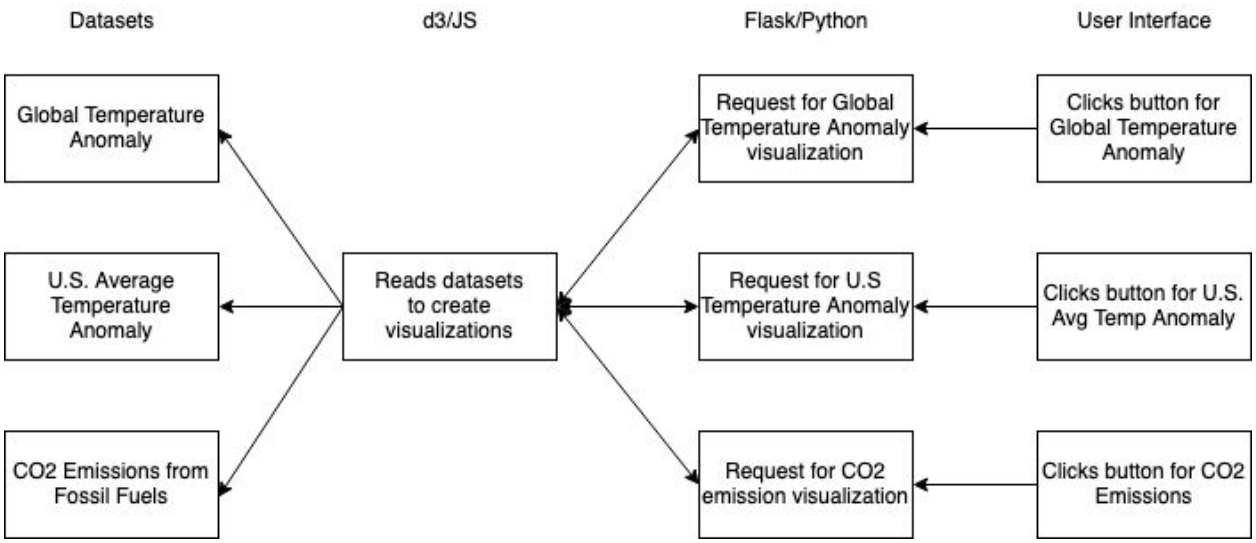
Alice Ni, Leia Park, Pratham Rawat, Hilary Zen

Our website's objective is to display climate change through graphs demonstrating the changes in temperature from 1901 to 2000, as well as CO2 emissions from fossil fuels globally. To use our site, the homepage will have three buttons labeled "Global Temperature Anomaly", "Carbon Dioxide Emissions" and "Compare Data". When each button is clicked, the user will be redirected to a page that has graphs displaying the specified data. The graphs are interactive, so the user can adjust the graphs to what they want to view.

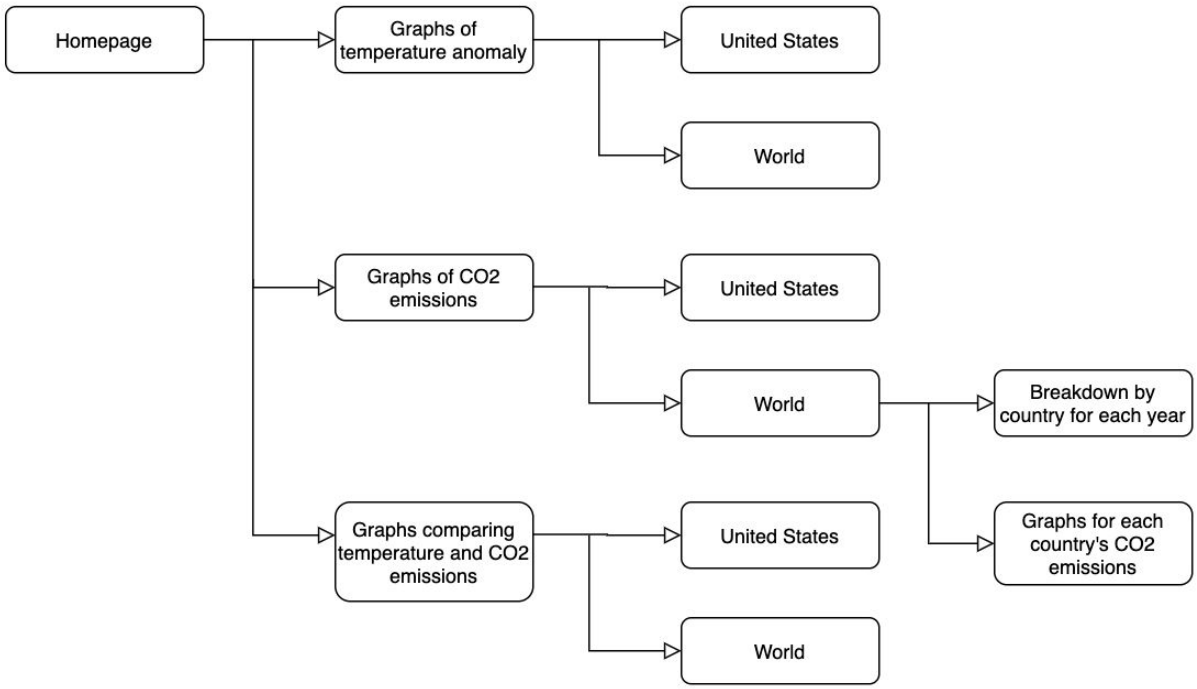
Roles:

Alice: Front-end, Bootstrap, JS/D3
Leia: Python, Database/CSV
Pratham: JS/D3
Hilary: Project Manager (prime minister), Flask

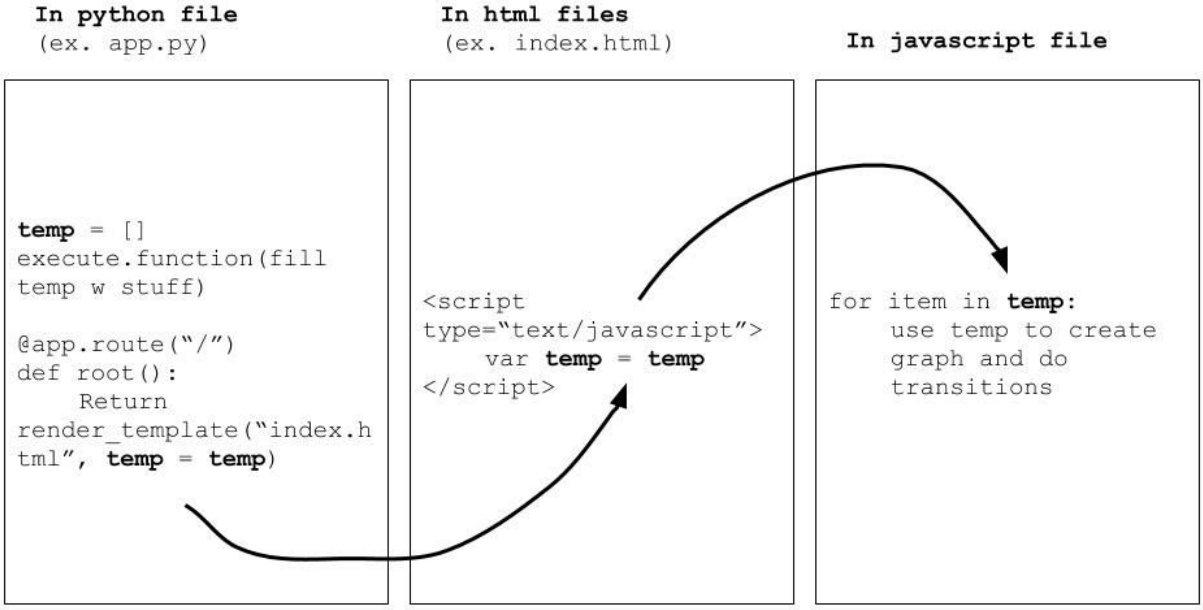
Component Map



Site Map



Breakdown of Data Transfer between Front & Back End



- The app.py file will read and organize the csv data and represent the data as variables.
- When executing the "render_template" function, the variables on the front-end will equate to the variables established in app.py

    - Ex. return render_template(“index.html”, temp = temperature…)
- For the d3 graph to display on the front-end, javascript is necessary
    - In the html file, a variable can be established for javascript by referencing to the variable obtained from app.py
    - Ex. <script type=”type/javascript”>
        var temp = {{temp}}
        </script>

Data Layout

Global Temperature Anomaly : JSON
U.S Average Temperature Anomaly : JSON
CO2 Emissions from Fossil Fuels since 1751, By Nation : CSV

These datasets will be saved as files and functions written in the __init__.py file will turn the data into something usable for d3.

Front-end Framework

Bootstrap

- Because we are familiar with bootstrap, we decided it would be the best option for us.

The user can choose if they want to see bar graphs or if they want to see plot graphs.

Files:

- base.html
    - Will serve as a template for the rest of the pages on the site
- home.html
    - Home page for the site
    - Buttons that redirect to pages corresponding to the datasets
    - Enlightenment button that displays trivia
- temp.html
    - Will have graphs of global temperature anomaly
- carbon.html
    - Will have graphs of CO2 emissions globally over the years
    - The user will be able to search for and view a graph of each country’s CO2 emissions over time, using a select menu for the bar graph
    - For the line chart, user can brush to zoom in, and double click to reset the graph
- alldata.html

    - Will have comparison graphs of both sets of data
    - Side by side graphs of temperature anomaly and carbon emissions
    - Line graph with both U.S. temp anomaly and global temp anomaly
    - Graph where user can click checkboxes to display/hide certain countries
    - All graphs are scrollable through time using the “Go Forward 10 Years” and “Go Back 10 Year” buttons

Backend Framework

- __init__.py
    - Contain flask to pull html files
    - Will read and organize csv files into easily manageable data as lists or dictionaries as needed
- All the d3 work will be done in in-line script tags in the HTML files.