Country Pollution App

Project Summary

The Country Pollution App aims to analyze and visualize various data points such as land size, population, GDP, and carbon emissions for different countries. By evaluating this information, users can understand how their country performs in terms of pollution and carbon footprint. This app will serve not only residents seeking awareness about their country's environmental status but also tourists looking for healthier travel destinations, particularly those sensitive to pollution-related health issues.

Project Description

The core purpose of this application is to promote transparency regarding the pollution levels in different countries. Users will be able to interact with an intuitive map that allows them to select and explore various countries or regions. Each country will feature an overall climate score that reflects its performance in reducing greenhouse gas emissions, accompanied by subcategory scores detailing how the main score was derived (e.g., emissions per capita, energy consumption, etc.).

A key creative component of this project that is also a technically challenging feature will be an interactive world map, enabling users to click on or hover over countries. Upon hovering, a popup will display critical information, including the overall climate score and the breakdown of subscores, thereby enriching the user experience and facilitating easier comprehension of the data.

Usefulness

This application has potential to be useful for several reasons:

- **Transparency**: It provides citizens with insights into their country's environmental impact, allowing for informed discussions and potential advocacy for policy changes.
- **Health Awareness**: For travelers, it offers vital information about pollution levels, helping them make healthier travel choices, especially for those with pre-existing health conditions.
- **Educational Resource**: It serves as an educational tool for students and researchers interested in environmental studies, providing them with real time data for analysis.

Currently, applications like the Global Carbon Atlas and various environmental impact apps exist. However, our application will differentiate itself by providing a clear, interactive scoring system and an engaging map interface that allows for real-time data exploration.

Data Sources (Realness)

We will utilize multiple datasets sourced from Kaggle, ensuring a comprehensive analysis of carbon emissions across countries.

1. **GDP Dataset**: Contains country GDP and GDP per capita data in CSV format.
2. **Land Use Dataset**: Provides information about land size, percentage used for agriculture, and other relevant metrics in CSV format.
3. **Population and Emissions Dataset**: Includes details on population density and carbon emissions statistics for various countries in CSV format.

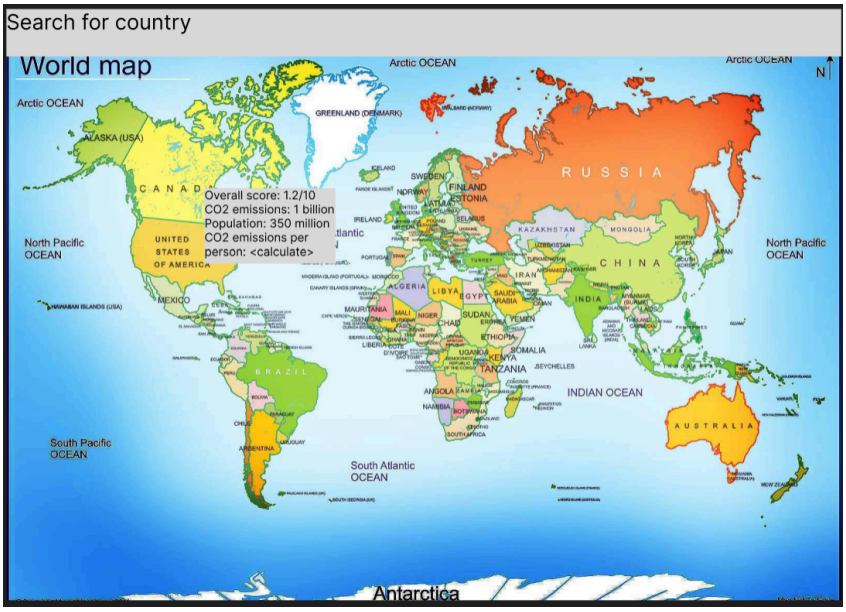
These datasets will allow us to create a detailed scoring system to evaluate each country's pollution metrics.

Functionality Description

The Country Pollution App will deliver the following functionalities:

- **Interactive Map**: Users can click on or hover over countries to reveal detailed information.
- **Scoring System**: Each country will have an overall climate score, with subscores for various criteria such as emissions per capita and land use efficiency.
- **Search and Filter Options**: Users will be able to search for specific countries and filter by different metrics to compare pollution levels effectively. Users can also directly compare multiple countries side-by-side based on various indicators.
- **Data Visualization**: Graphical representations will showcase trends in carbon emissions, helping users visualize changes over time.

UI Mockup:



Project Work Distribution

- **Siddhaarta**: Responsible for integrating and harmonizing the multiple datasets, ensuring data consistency and compatibility.
- **Anupam and Sayuj**: Tasked with developing the metrics that will score each country based on their pollution data, identifying key performance indicators.

  We will use these key factors:

  - Aggregate real estate
  - Population
  - GDP
  - Trade of Balance
  - CO2 Emissions

  Using these variables we will try to create a scoring mechanism to find Economics value

  to CO2

- **Ayush**: Will be in charge of compiling the metrics to generate the overall climate score that will be prominently displayed for each country.