Project Proposal ENG-220: Air Quality on the East Coast

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Main objective and Purpose:

We are aggregating air quality throughout the states of Florida, Georgia, Maine, New York, and Virginia. The purpose of this is to help track trends in air quality and see which states are most affected by pollution within the areas. Also, Health Risk Assessments, air quality readings, particularly of pollutants like PM2.5, PM10, ozone (O3), nitrogen dioxide (NO2), sulfur dioxide (SO2), and carbon monoxide (CO), help assess potential health risks. Data can be analyzed to identify high-risk areas for respiratory and cardiovascular diseases.

Data Collection:

Sources:	Description
Source 1: https://www.epa.gov/aboutepa/regional-and-geographic-offices	How clean the air is within the region pollution/pollution (greenhouse gases) factors throughout the east coast.
Source 2: https://www.niehs.nih.gov/health/topics/agents/air-pollution	How clean the air is within the region pollution/pollution (greenhouse gases) factors throughout the east coast.
Source 3: https://www.epa.gov/outdoor-air-quality-data/air-quality-index-report	Shows regions that are affected by most by Air
Source 4: https://www.epa.gov/outdoor-air-quality-data/download-daily-data	Has drop downs that can specify which states and what gases we want to get readings from.

Data Preprocessing:

Some of the ways we want to specify the information that we obtain is through, getting the following information below:

- Compiling specific gases
- AQI (Air Quality Index)

- Particular matter
- Time: (Five years time constraint, Monthly reports)
- Wind: (Speed, changes)

Feature Extraction:

- Calculating average values, trends over time, such as the wind changes within our region of choice. The more highly polluted areas and how that effects our plant life and our ecosystem in general. Getting averages and air quality metrics across regions, we intend to identify any significant differences or trends over time, such as seasonal climate variations or changes in air, which could indicate pollution.

Conclusion:

We want to get information that can help prevent some of these greenhouse gases from affecting our environment and our health. From the information we obtain, we are going to process five years' worth of information to see how and where we can do better in the years to come. The factors of how bad air quality affects our health and environment are very important. Being able to process, examine and show recent elements that affect air quality, will help us understand how exactly it affects us. It will also help us determine how global climate changes can occur due to air pollution.