DSCI 510 Final Project Progress Report

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Project: Analyzing Weather and Air Quality in U.S. Cities

Project Scope Update

The project is going as planned. I am collecting weather data (temperature, humidity, wind speed) from different U.S. cities using the OpenWeatherMap API. Next I will get air quality data from the EPA and compare them to see if weather affects air quality. The scope has not changed from my original proposal.

Data Sources

Data Obtained:

I wrote a Python script that gets weather data from the OpenWeatherMap API. The script collects data for 3 cities (Los Angeles, New York, and Chicago). For each city, I get: temperature, humidity, wind speed, and weather condition. The data is saved in a JSON file in the data folder.

API Used:

I am using the OpenWeatherMap API (https://openweathermap.org/api). This API gives current weather information for any city. I signed up for a free account and got an API key. In my Python code, I use the requests library to call the API and get the data in JSON format. The API key is stored in a .env file so it's not uploaded to GitHub.

Issues / Difficulties

At first I had trouble understanding how to use an API, but after reading the documentation and watching some tutorials, I figured it out. I learned how to use the requests library and how to read JSON data. I also learned about environment variables to keep my API key safe. The next challenge will be getting the EPA air quality data. I need to download CSV files and figure out how to read them in Python. I also need to learn how to match the weather data with the air quality data by city and date.