Air Quality Data Visualization Tool
User Manual

CSE 412 F20 Group 9

Michael Cai, Jacob Farabee, Kesav Kadalazhi,

Madison Kuhler, Brennan Kuhman, Jack Summers

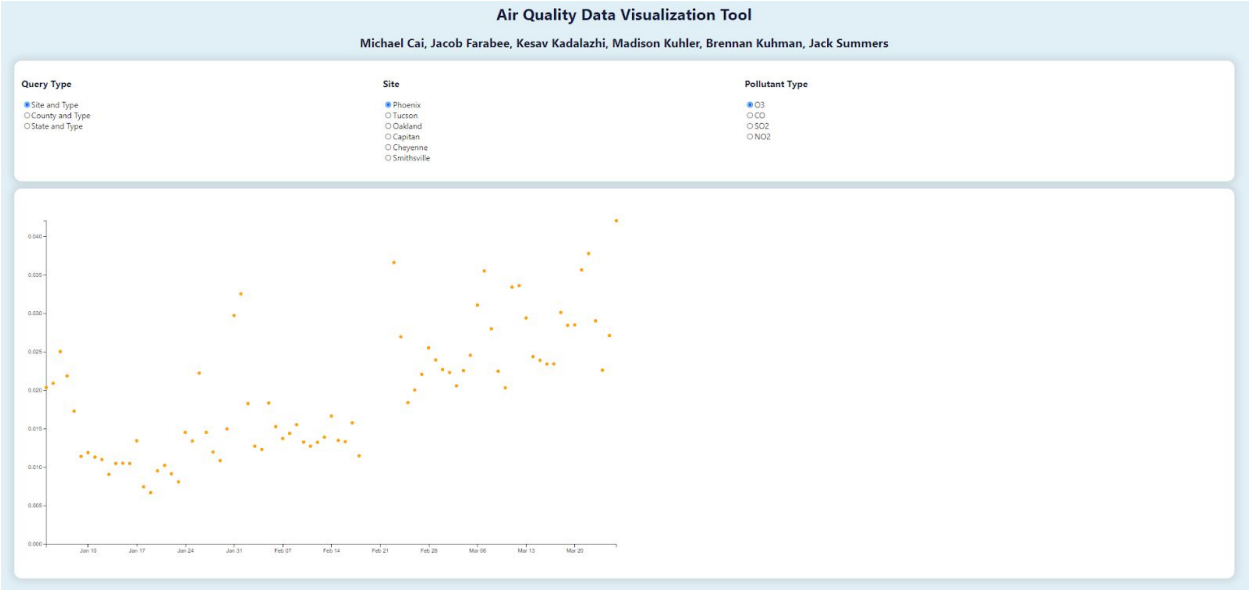
Using the Application

Video Demonstration

Here is a video demonstration showing how to use the app and how to add data via command line.

Application Access

The application is deployed and viewable at https://cai-michael.github.io/CSE412/. Upon loading the landing page, you should see the following:



Application Usage

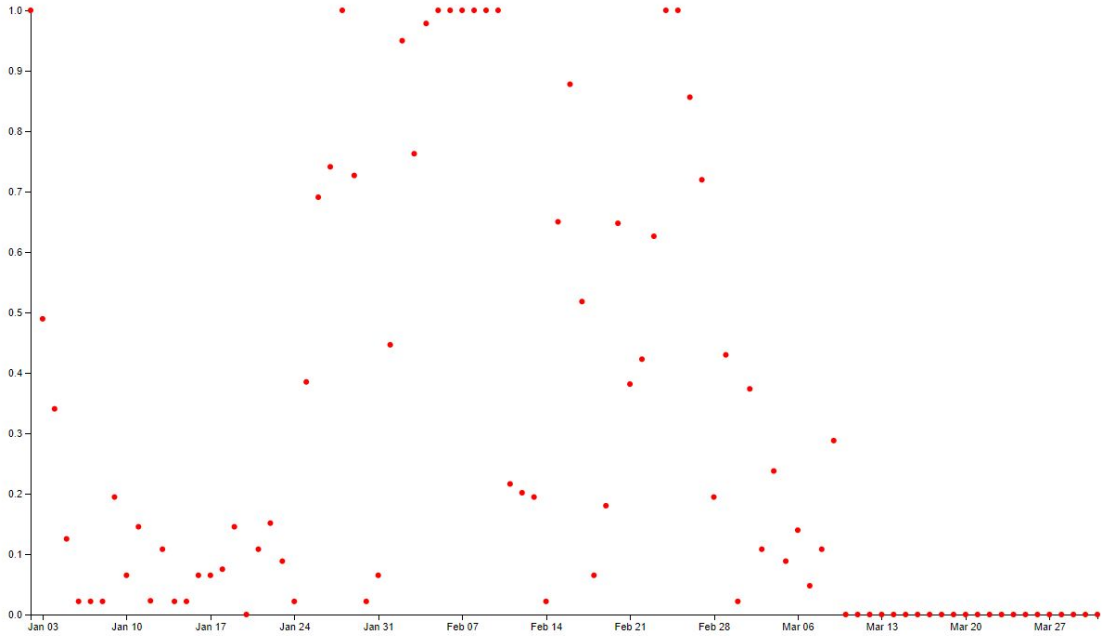
To test the database queries, select a query type, then select a location (a state, site, or county), and finally select a pollutant type. There are three queries that allow the user to select data for a specific site, county, or state by "type," which refers to the pollutant type. The middle column will change between displaying options for sites, counties, and states depending on the query selected.

Below are the three query options:

The graph will responsively display the pollutant data after querying the database when the user changes their selection.

For example, below you can see an example where a user has selected “County and Type” as the query, Santa Barbara as the County, and SO2 as the pollutant type.

Then, here is the resulting graph for that query:



Adding Data

Authorized users with the correct API key can insert data using the command line interface tool. This is located in the “lambdaFunctions” folder under the script name “insertInterface.py”. By running this script in python the user can add data to the database. In order to run this script, you will need psycopg2 installed and working on your machine and the API key for accessing the database.

```
What would you like to insert to the database?
1. State
2. County
3. Pollutant Site
4. Pollutant Sample
5. Quit
1
Please input a state name: Maine
"Successfully inserted ('Maine',) as id 10"
```

Choosing 1 will prompt the user to enter in a state name to insert into the states table

```
What would you like to insert to the database?
1. State
2. County
3. Pollutant Site
4. Pollutant Sample
5. Quit
2
Please input a county name: Lobster
"Successfully inserted ('Lobster',) as id 87"
```

Choosing 2 will prompt the user to enter in a county name to insert into the counties table

```
What would you like to insert to the database?
1. State
2. County
3. Pollutant Site
4. Pollutant Sample
5. Quit
3
Please input a county name: Lobster
Please input a state name: Maine
Please input an address: 1234 Fake Address
Please input a city: Smithtown
"Successful inserted 1234 Fake Address as 10004"
```

Choosing 3 will prompt the user to enter in a Pollutant Type and the required information into the database.

```
What would you like to insert to the database?
1. State
2. County
3. Pollutant Site
4. Pollutant Sample
5. Quit
4
What pollutant is it?: CO
Please input the address: 1234 Fake Address
At what point what the pollutant most concentrated?: 12
What date is this sample?: 12/1/2020
What is the max concentration reached?: 0.5
Please input the aqi: 1
Please input the units of measurement: ppm
Please input the mean concentration: 0.2
"Successfully inserted sample 5988"
What would you like to insert to the database?
1. State
2. County
3. Pollutant Site
4. Pollutant Sample
5. Quit
5
```

Choosing 4 will prompt the user to enter in a Pollutant Sample and the required information for a sample into the database.
Choosing 5 will quit the script.