Goals:

1. STEPS:
   1. Select all city records
   2. Get ID for each record
   3. Loop through ID and using city that match ID run python function that calls API
   4. Only return AQI, update AQI column of current ID
2. Update SQL every hour so it will render new heatmap
   1. Update by performing api call for each row in cities column. If someone input new country it will have more rows to update.
   2. **Q:**  what if user query database while being updated ????
3. Render daily air pollution news from <https://www.who.int/airpollution/en/> 🡪 issues we are facing right now to tell the world!
4. Analyze why certain country may have such aqi data
5. Create another method of text summarization(ml/dl)

>>> query = db.select([Aqi])

>>> result = connection.execute(query).fetchall()

>>> db.select([Aqi].where(Aqi.columns.Country == "Canada")

>>> result = db.engine.execute(query).fetchall()

>>> print(result)

This is item in a list (result):

(1, 'Canada', 'Acton', '63', 51.4925, -0.257252, datetime.datetime(2019, 7, 24, 14, 0))

(2, 'Canada', 'Alameda', '46', 37.7936, -122.263, datetime.datetime(2019, 7, 24, 7, 0))

Hardships:

1. Cleaning json file and create new one then storing into MySQL database.
2. Changing asynchronous function to become synchronous therefore when user inputs their country I can call api after title casing.

* Ans: I did not know what was going on, it took me a long time to figure out what was wrong and longer time understanding synchronous and asynchronous function in JavaScript and how I can manipulate them to get what I desire.

Grab air quality data use it to show users and save it to database of my own. (mongoDB)

Front page will contain globe with heatmap of AQI.

When region is clicked show concentration of pollutants and news info (explanation will be on website all the time no matter which region)

Scrape and analyze regional news and provide today’s information about the weather and what might be the cause of good/bad AQI today. (ex: volcanoe eruption may cause bad AQI just for few days.)

* Get large dataset on today’s news
* Only find relevant info using NLP, semantic search.

Provide information about their current condition on air quality.

* AQI, Pm2.5, pm10, O3, NO2, SO2, CO (explanations would be nice)
* Legends.
* Filter for particular molecule.

Problems they are facing

How it can be resolved

Scrape twitter/news sentiment analysis, current weather

What was the weather/air quality like on the same day in previous years.

Measurement unit used:

**Ppm**: parts per million

* ppm is a volume-to-volume ratio, which makes it independent of local temperature and pressure.

Ozone:

* Ozone pollution, usually talking about tropospheric ozone 🡪 0~10km in height.
* and more particularly the surface concentration which matters in order to quantify the health impact. Moreover, the tropospheric Ozone is having a diurnal cycle, with pollution peaking in the afternoon when the temperature reaches its maximum, and almost no pollution during the night.

Credits:

Csv file of list of countries and cities: <https://simplemaps.com/data/world-cities>

Air quality API: <http://aqicn.org/city/beijing/>