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Dataset:

Government Information Open Platform: https://data.gov.tw/dataset/6076

The csv file: https://data.epa.gov.tw/api/v2/aqx_p_434?api_key=e8dd42e6-9b8b-43f8-991e-b3dee723a52d&limit=1000&sort=monitordate%20desc&format=CSV

The data represent Taiwan's daily weather indicators, including, AQI, SO_2, CO, PM10, NO_2, PM2.5, and the time. And we selected some locations to compare various values.

Flow chart:
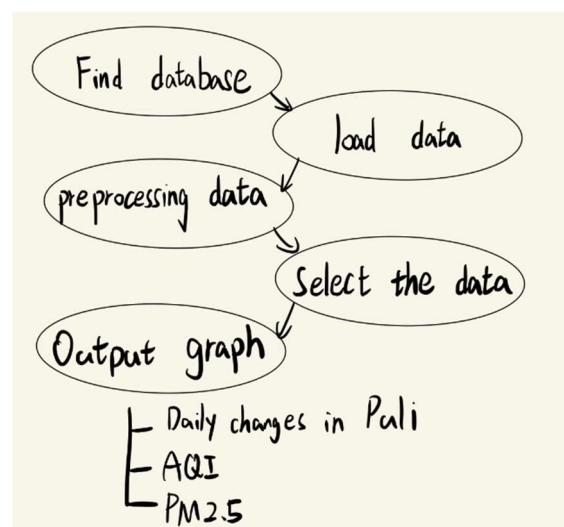

Data Pre-Processing:

We noticed that some of the data of some separate cities are lack of the materials in random day in December, so we read all of the data and chose some cities which have the required information and the numbers of the materials are the same to be our data to draw the below plots.

Pseudocode:

We use three place data in our project. First, we found the database. Second, we loaded data in our database by using csv.reader(), declared six kinds of list to storage our data, and preprocessed the data by xxx.reverse() because the order of the data are reverse. Then, we selected the data that we need. Last, we set the range of x-axis and y-axis, outputted the graph by using plt.scatter() and plt.plot() . Our project will search the column which we need, and save in the list. Then we can use the list to output the graph.

Objectives:

1. Daily changes in various indicators in Puli(埔里)

    *Create a list of various air qualities or gas distributions

    *Use plt.() to print out the chart
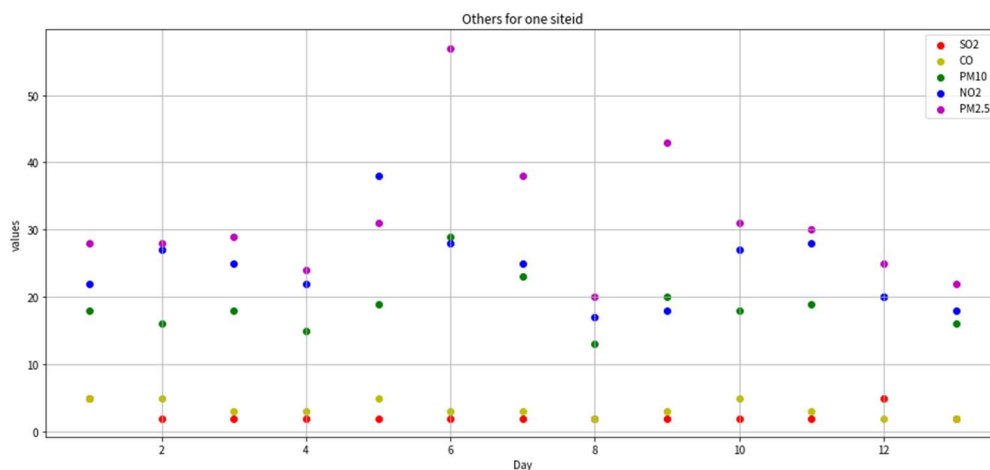
2. AQI index comparison

    *We choose Fuxing(復興), Changhua(彰化), and Hualien(花蓮) for numerical comparison.

    *Propose the AQI values of various places from the file and input them into their respective arrays. Use plt.() to print out
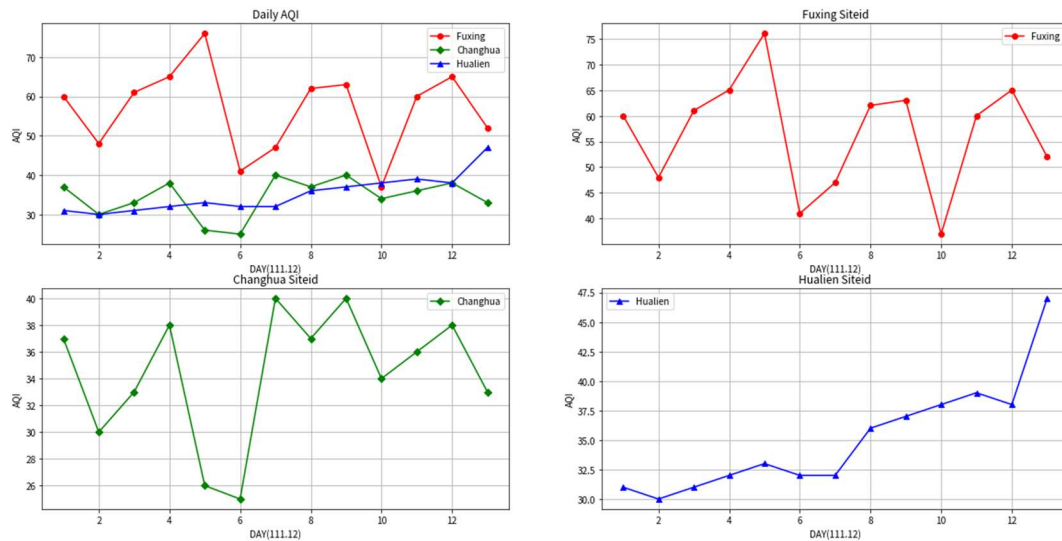
3.PM2.5 index comparison

*We choose Fuxing(復興), Changhua(彰化), and Hualien(花蓮) for numerical comparison.

*Propose the PM2.5 values of various places from the file and input them into their respective arrays. Use plt.() to print out
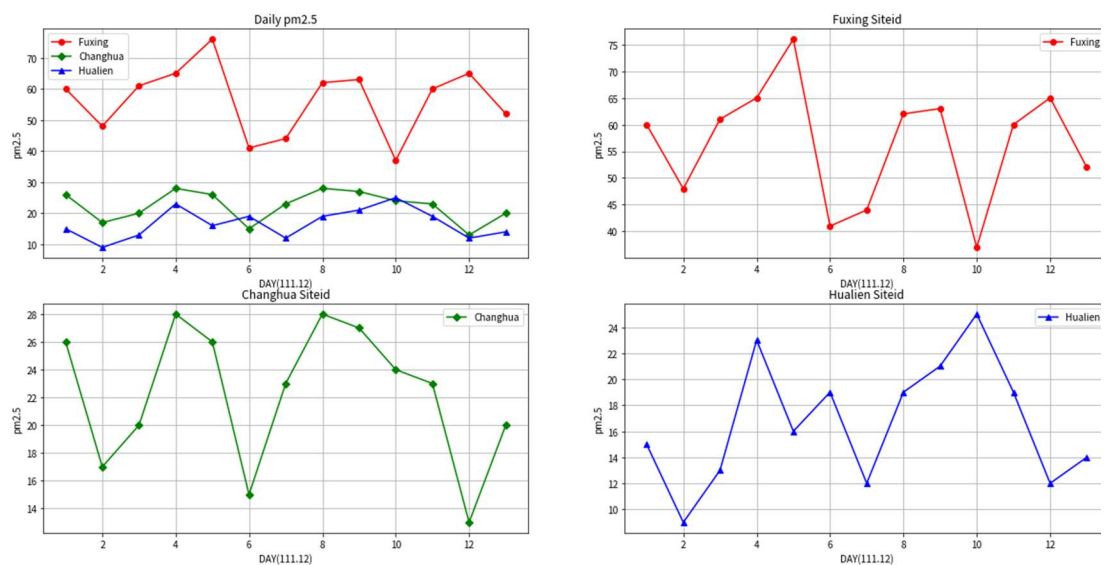
Result analysis:

Through the analysis of the above data, the following points can be drawn

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2. Combining the tables of 2 and 3, it can be seen that the values of AQI and PM2.5 have the same trend to a certain extent.

3. Combining the tables of 2 and 3, it can be seen that the values of AQI and PM2.5 have the same trend to a certain extent. For example, on December 5, the local AQI index in Fuxing rose, and PM2.5 also rose accordingly. On December 6, the two values in Changhua reached the lowest point of observation, but they both increased significantly after that. It can be seen that PM2.5 has a significant impact on The shadow of the AQI is quite large

Github Link: https://github.com/SunGj921028/Data-Analysis-for-AQI.git