# Additional Dataset

Description of the data

We utilized a weather data extraction website, called Visual Crossing, to gather meteorological information for our regions of interest - Chau Phu, Chau Thanh, and Thoai Son. The data was collected within a defined timeframe, encompassing various features such as precipitation, temperature, and humidity daily from the beginning of the timeframe to the end. Our primary focus was on obtaining rainfall data for an entire crop cycle before the harvest date indicated in the provide Crop Yield data.

Process to extract and download the Data

Simply go into this website at this link www.visualcrossing.com and it will prompt you to this page shown below. Click on to the *Weather Data* section (highlighted as red oval) of this page to begin downloading the data.
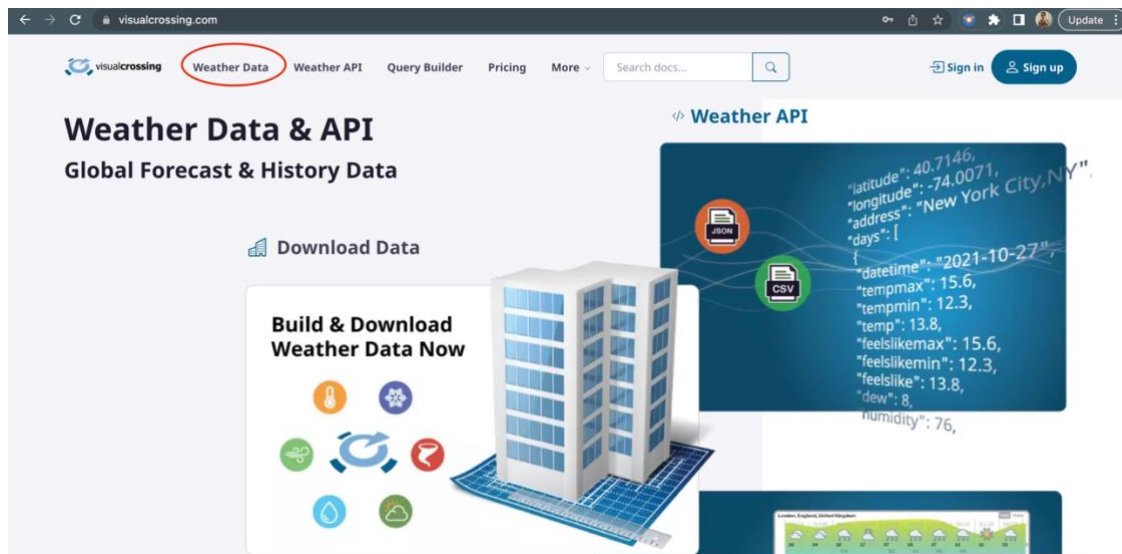

For our dataset, we collected data according to the region of interest and you can start by searching for the region in the search bar and as an example we are showing how we get data for the Chau Phu region below.
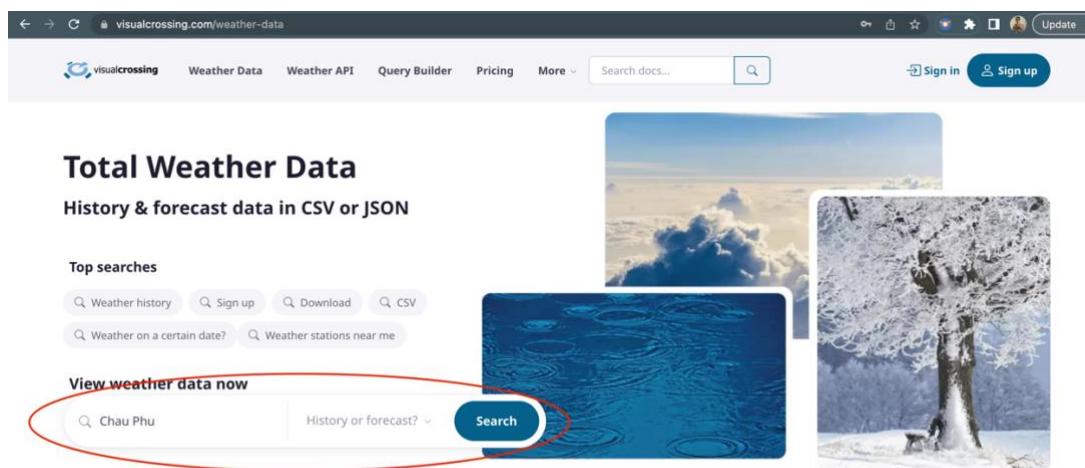
Upon typing in the region, you can further add filters to isolate the timeframe for which you want the weather data for the Chau Phu region using the built in Date range function.

The data can then be downloaded using the download icon shown in the picture and it will take you to the next window.
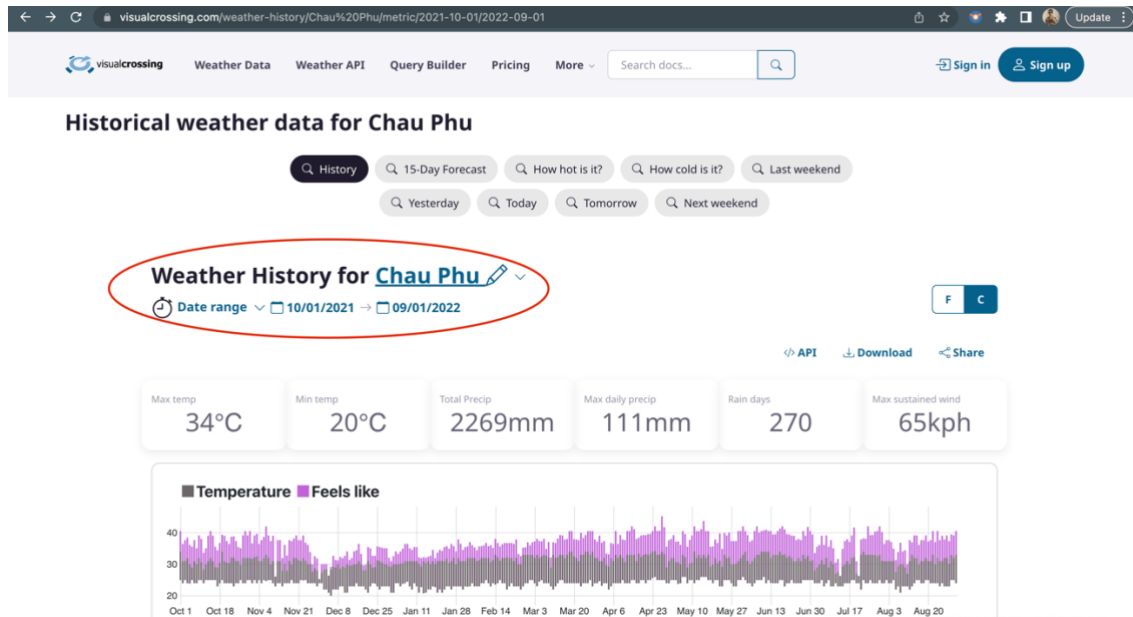
Upon reaching this page, click on the Guided Data Download option in the screen shown below.
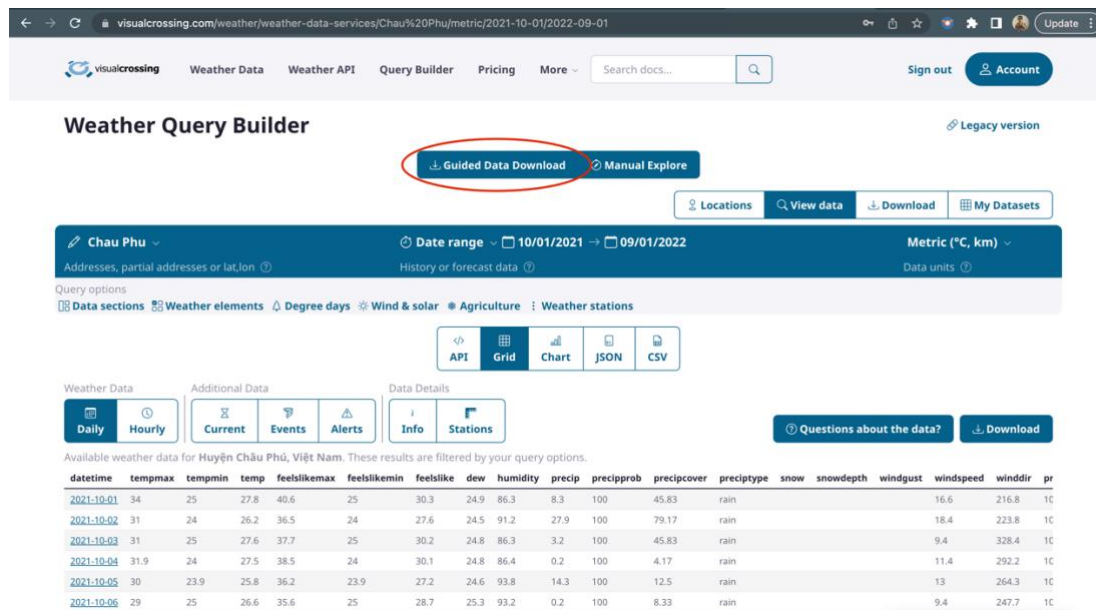
You will then have to repeat the process of typing in the region of interest in the guided data download option. Click on *Next* to proceed from here.

Similarly repeat with the time frame and click on *Next* to proceed.

Finally, you will be prompted to ask to download the data a second time and click on *Next* to proceed and move forward.

For our specific purpose, we used the csv format so that it can be incorporated with our code efficiently and match our submission template format. Click on *Continue* to check the data format, and specifics one last time and the percentage completion bar will show your progress to downloading the data.

For our purpose, we needed to access precipitation data for the target cities. Therefore, we were able to obtain free data from public datasets. However, we are aware that data extraction from this website is limited for everyone. To overcome this limitation, one can search for other free websites or use advanced satellites, like MODIS, to obtain precipitation data. It is worth mentioning that we chose this website due to its convenient table format and the fact that data preprocessing was unnecessary, saving us time.

Click on *Continue* and check the time frame of data to see if it matches with what you want.

Click on the *Run Query* button to begin extraction of real time data for your region of interest and time frame.

Finally, download the data by clicking on the *Download* button. This will initiate the data and we have our data ready for manipulation.
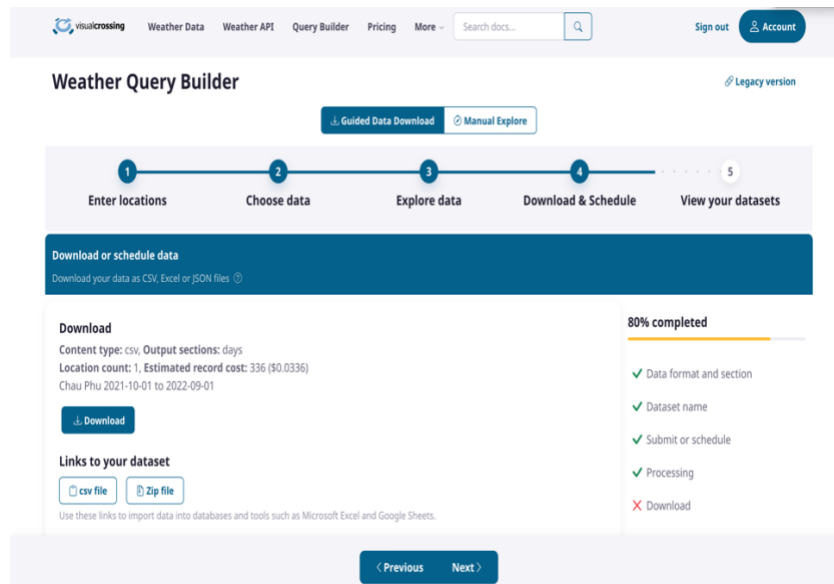
Similarly, we follow the same procedure for finding weather data for Chau Thanh and Thoai Son.

Side Note – We have attached the excel spreadsheet for Chau Phu city for reference. Chau Thanh and Thoai Son cities follow the exact same order.