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MBTA Project Reflection

Project Overview:

This project required the use of two APIs, the json module to extract the data from the websites, and the creation of .hmtl files to render web pages to display the data in an organized way. The two APIs used were Map Quest, which allows users to specify a place name or address and receive a longitude and latitude, and the MBTA-realtime API which allows the user to extract locations of MBTA stops, scheduling and delays, maps, and a host of other useful data. For this project, we focused on using the Map Quest API to convert place names and addresses into longitude and latitude coordinates, and then using those coordinates to find the location of the nearest MBTA station as well as whether or not that station was wheelchair accessible through the second API.

This code is then implemented in the web application we create using the flask module. This also required the creation of several HTML files to display the information on the webpages. The two main HTML files were one for inputting the location and one for displaying the closest MBTA station to that location.

Project Reflection:

In terms of the process of creating this program, I think I was able to do a good job initially extracting the data necessary from the two APIs and cutting down the information given to have the function only return the data necessary for the application I was creating. It took a while to understand the structure of the list/dictionary returned by the json module, and drill it down to the point where only one answer was returned by the function. It was also difficult to understand how to connect all the functions I created so that the final function would run each step in the process. Once I understood the flow of information and the structure of the data being returned, it helped me cut down on the lines of code I had, and helped me understand how to troubleshoot any errors being given when running the code.

The part I mainly struggled with was taking the json data and displaying it on the webpage. Connecting the functions that extracted the json data to the code for the actual webpage, and then connecting that code to the different HTML files was very difficult for me initially because it required understanding of HTML code that I did not initially have, and also required me to keep track of all the different variable and function names. Understanding how each component was connected, and tracing the errors back to specific files or sections of code proved to be quite difficult.

I would have liked to improve the accuracy of the program. For some locations, the closest MBTA station returned is not actually the one that is closest. This may have something to do

with how the location is entered, but I am unsure as to how to fix this issue. Another improvement I wanted to make was the overall design of the web pages. I was able to implement a few design aspects through the use of HTML and CSS, but I could have definitely done more. I wish I had a better understanding of the json module and HTML before starting this project because I think it would have been much easier for me to perform the initial tasks assigned, and spend more time after on how to improve upon the program and make the web pages look nicer.

Going forward, I can use what I have learned in this project and apply it to other APIs to extract data of all kinds. I can also then take that data and link it to web pages that I design. I would like to learn more about the design aspect of the web pages, while obviously still focusing primarily on functionality. I am considering taking Web Tech next semester to look into this subject further.