Assignment 04
CS-4032 Web Programming Fall 2022
Angular-based Bus Tracker

Develop an angular web application for Live Bus Tracking

Open Date - Nov 21, 2022 **Deadline - Nov 27, 2022 11:30 PM**

Instructions

- You need to Call Bus Tracker API developed in assignment 3 in backed of angular application
- You are not allowed to copy/paste code from the internet as it is.Zero for copying the code from the source/internet.
- 70% of the code must be written by yourself.

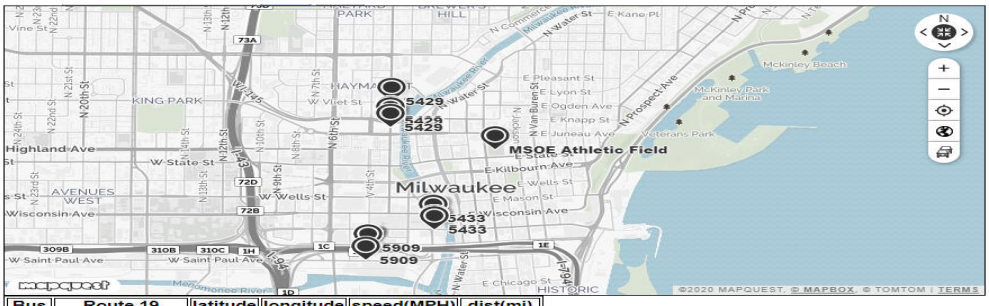
Tasks:

In this assignment, you will write a web application using Angular

- that regularly tracks the Bus Information in a table format as well as on a Google Map similar to what is shown below:

You will have a screen to input and below screen will be displayed

- Enter Route Id and press the start button to display the buses details operating on the given route in the table and on the map.
- Speed and press the start button to display the buses details exceeding the given speed in table and on the map



Bus	Route 19	latitude	longitude	speed(MPH)	dist(mi)
5406	College via 13th	43.094	-87.94	30	2.12140
5429	College via 13th	43.046	-87.91	17	6.12159
5802	College via 13th	42.973	-87.92	30	12.07178
5122	Silver Spring	43.002	-87.92	0	5.48144
5159	Silver Spring	43.067	-87.91	16	10.72121
5188	Silver Spring	42.930	-87.92	7	0.48068
5433	Silver Spring	43.038	-87.91	15	9.45947
5601	Silver Spring	43.118	-87.95	20	16.22159
5804	College via 20th	43.071	-87.91	9	4.39223
5127	College via 20th	42.930	-87.93	22	16.47140

For the map:
You can Google Map API or MapQuest API

- Google Maps API; however, although Google supplies free keys for limited use, you are required to supply a credit card to obtain their license. You can get a Google API key by following these instructions.

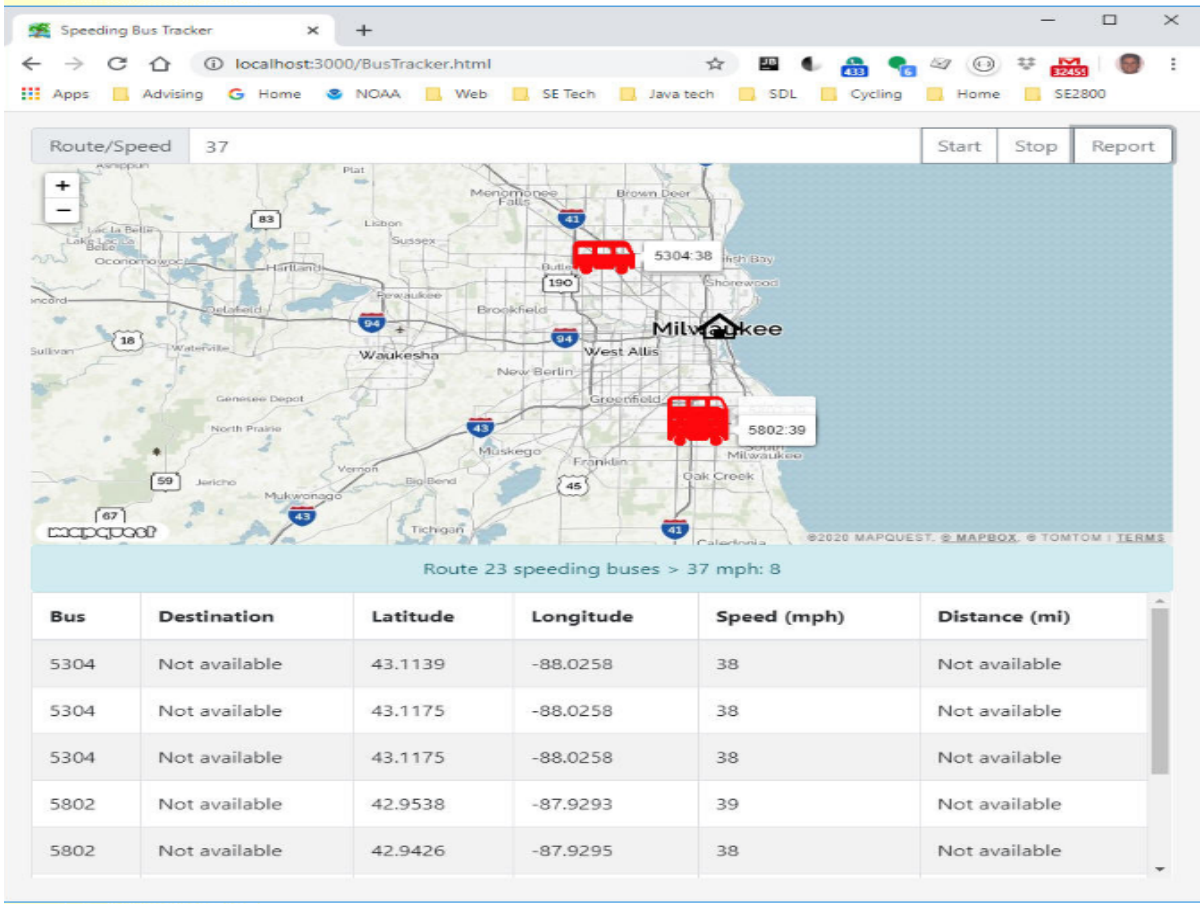
- If you want to use MapQuest, you can see the documentation of mapquest API from this link:
  https://developer.mapquest.com/documentation/mapquest-js/v1.3/

For google Map: You can generate your Key by yourself
For Mapquest API: you can use the below key generated for this assignment.
Key : IUiemKsi8qWkxUHTB3GryfF8GfABVB67

Required Features :

- you will add a marker on the map for each bus (the number of markers is the same as the number of rows in your table).
- The map must be static in this case, and does not need to be updated at regular intervals.
- Change the indicators on the marker to display the vehicle id and speed together (for example: 5516:47MPH). When you hover or click, the time should be displayed.
- In the message field, indicate how many buses are contained in the table (and shown as markers on the map).

The screen below illustrates what the output should look like in general when the report button is pressed (in this example, the buses on route 23 have been monitored by API , and those buses exceeding 37MPH are displayed). Custom icons are used in this example to display the bus locations.



Report button

- Invokes a "generateReport" method when pressed. In the generateReport method, read the value that is in the **Route/Speed** text field.
  (Note: You may add a second separate **Speed** input field if you wish if you don't like using the same input field for both route and speed specification).
- Supply this value - now representing a speed value (in API) as a parameter to an Ajax GET request to the /**BusSpeed** route of your Bus Tracker server, where your server interprets the value as a speed (rather than a route number) and returns a collection of all busses exceeding that speed.
- This collection may be empty (if your speed threshold is high) or quite large (if the speed threshold is low).