

Citi Bike

A large part of this class is going to be devoted to working on a mini-project in Leaflet. We will utilize the Citi Bike API in order to retrieve the statuses and locations of all of the Citi Bike stations in New York.

It's highly recommended to complete the **Basic Version** before attempting the **Advanced Version**.

Instructions

Basic Version

1. Use the [Citi Bike Station Information Endpoint](#) to retrieve information about station names and locations. Take a moment to study the data sent back by the endpoint in your browser.
 - Each object in the `stations` array has `station_id`, `name`, `capacity`, `lat`, and `lon` properties.
 - The `logic.js` file in the skeleton folder contains coordinates that can be used to position a Leaflet map over New York City.
2. Create a basic Leaflet map using a tile layer, perform a GET request using D3 to the [Citi Bike Station Information Endpoint](#).
3. Loop through the stations and create a marker to represent each station.
4. Give each marker a popup to display the name and capacity of its station.



Advanced Version

After completing the **Basic Version**, write code to complete as much of the **Advanced Version** as possible.

1. Write code to perform a second API call to the [Citi Bike Station Status Endpoint](#). Take a few moments to study the data being returned. In particular we are concerned with the `station_id`, `num_bikes_available`, `is_installed`, and `is_renting`.
2. Using the data retrieved from the second API call, try to add the following functionality:
 1. Display the number of bikes available inside the popup for each marker.
 2. Add a layer control and split the markers up into the following overlay layers:
 1. **Coming Soon:** If a station is not installed.
 2. **Empty Stations:** If a station has no bikes available.
 3. **Out of Order:** If a station is installed but not renting.
 4. **Low Stations:** If a station has less than 5 bikes available.
 5. **Healthy Stations:** If a marker does not fall into any of the previous layer groups.
3. Utilize a Leaflet plugin to create different types of markers to represent each layer. The example shown below is using [Leaflet.extra-markers](#), but you are free to use another plugin if you prefer.
4. Add a legend to your map to explain the different markers.



Hints

- Some helpful links:
 - [Leaflet Usage Example](#)
 - [Citi Bike Station Information API EndPoint](#)
 - [Leaflet Popup Doc](#)

- [Citi Bike Station Status API EndPoint](#)
- [Leaflet Layer Groups Doc](#)
- [Leaflet Extra Markers](#)
- [Leaflet Legend Doc](#)