Mapping API’s: Leaflet - Adding Markers

Welcome to the Essential ArcGIS Task Sheet Series. This series supplements the Iowa State University GIS Geospatial Technology Training Program short course series. The task sheets are designed to provide quick, easy instructions for performing mapping tasks.

This task sheet builds upon the previous task sheet: Mapping API’s: Leaflet - Getting Started, publication number PM2082-14r and will demonstrate how to add simple markers in Leaflet. Please refer to that document for the initial Leaflet map setup. The code for this task sheet and the previous task sheet can be found on the ISU Geospatial Technology Program GitHub page at https://github.com/ISUEOGTP/GISTaskSheets.

1. Adding a simple marker

a. Once the basic Leaflet map is setup, adding a marker to the page requires just one line of code be placed below the default tile layer definition.

```javascript
var marker1 = L.marker([43, -93]).addTo(map);
```

b. The line of code begins with defining a variable as marker1. In this example, the var marker1 is initialized as a Leaflet marker that is to appear at latitude 43, longitude -93. The line of code is completed by telling the marker to be added to the leaflet map called map.

c. If you just want to add a second marker you can do so by adding another marker variable such as below.

d. While it is not necessary to use a new marker name, having a unique name can help to avoid confusion when trying to interact with a single marker.

```javascript
var marker2 = L.marker([43.05, -93.1]).addTo(map);
```

e. If multiple markers are needed, a looping and array structure should be implemented. This will be covered in a future task sheet.

2. Marker Pop-ups

a. Pop-ups allow the user to click on a marker and display a window containing more information about the feature. Use the following code to add a pop-up to a marker.

   Hint: this one reason to have unique marker names.

```javascript
marker2.bindPopup("marker 2 here").openPopup();
```

b. The text displayed within a pop-up can be styled using standard HTML tags or with CSS.
c. Only one pop-up can be displayed at a time. This means that the pop-up code last or furthest to the bottom of the HTML page will be the only pop-up displayed on page load or reload. In this case, marker1's pop-up will be displayed because the code is written a line below marker2's pop-up code. *Hint: try changing the order, now marker2's pop-up should be displayed on page load.*

```javascript
var marker1 = L.marker([43, -93]).addTo(map);
var marker2 = L.marker([43.05, -93.1]).addTo(map);
marker2.bindPopup("marker 2 here").openPopup();
marker1.bindPopup("<b>Hello Leaflet Mappers</b>.".)
.openPopup();
```

**d.** If you have worked through the code to this point you may have noticed that having a pop-up display as soon as the map loads might not be desirable. To correct this you can remove `.openPopup()` from the end of the marker pop-up lines.

### 3. Marker Options

a. Markers can be customized with any of the 10 default Leaflet option settings. These settings include making the marker draggable, display a tooltip or have a custom icon style (covered in another task sheet).

b. To make a marker draggable and display a tooltip two lines are required. First add a comma after the [lat, long] value. *Hint: line 47.*

c. Next add a set of curly braces `{}`. Within these braces type the options as shown below. *Hint: a colon separates the option and its value and each option/value pair is separated by a comma.*

```javascript
var marker3 = L.marker([43.12, -93.1], {
  draggable: true,
  title: 'a tooltip'
}).addTo(map);
```


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