

Mapping API's: Leaflet - Creating Simple Circles and Rectangles

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

The code for this task sheet (**RectangleLeaflet.html**) and the previous task sheets can be found on the ISU Geospatial Technology Program GitHub page at <https://github.com/ISUEOGTP/GISTaskSheets>. This task sheet demonstrates how to add rectangle and circle overlays to a Leaflet map and then modify the options to change how the overlays display. This compliments task sheet : *Mapping API's: Leaflet - Creating Polylines and Polygons* **PM2082-15j**.

1. Introduction

- First, you will need to start with a basic leaflet map setup. Reference the task sheet: *Mapping API's: Leaflet - Getting Started* **PM2082-14r** to learn how to get this set up, or get the starter code from our GitHub page at <https://github.com/ISUEOGTP/GISTaskSheets/blob/master/Leaflet-Tutorials/helloLeaflet.htm>.

2. Creating Rectangles

- Start by using the basic leaflet setup to display a map and adjust the zoom and map center as desired.
- Define the boundary of the rectangle as two pair of coordinates for the southwest and northeast corners of the rectangle.

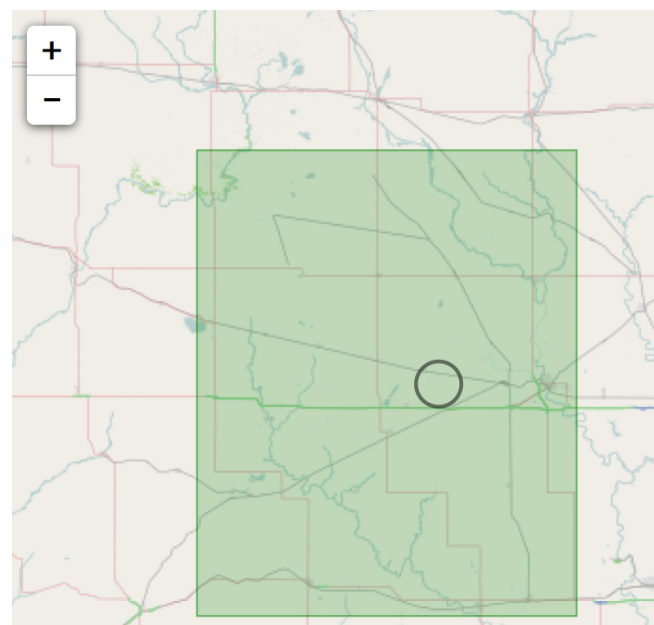
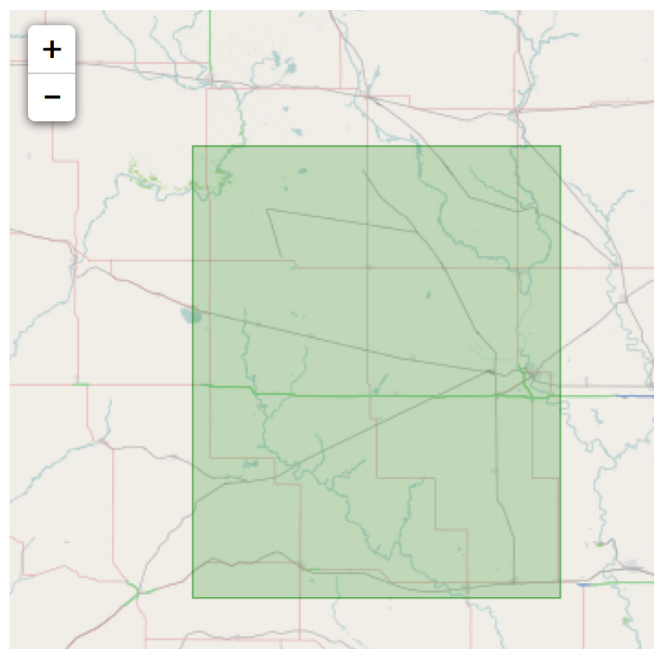
```
// define geographical bounds of the rectangle  
var boundCoords = [[42.0, -95.2], [43.0, -94.1]];
```

- Next, instantiate a rectangle object that includes the variable containing the bounds coordinates. Options for the rectangle can be provided as a variable or written directly in the constructor, see **step 4a**.

```
// create a green rectangle  
L.rectangle(boundCoords, {  
    color: "green",  
    weight: 1  
}).addTo(map);
```

- Because the bounds of the rectangle may be larger than the area displayed, the method **fitBounds** can be used to add automatically zoom the map to the bounds of the rectangle.

```
// zoom the map to the rectangle bounds  
map.fitBounds(boundCoords);
```

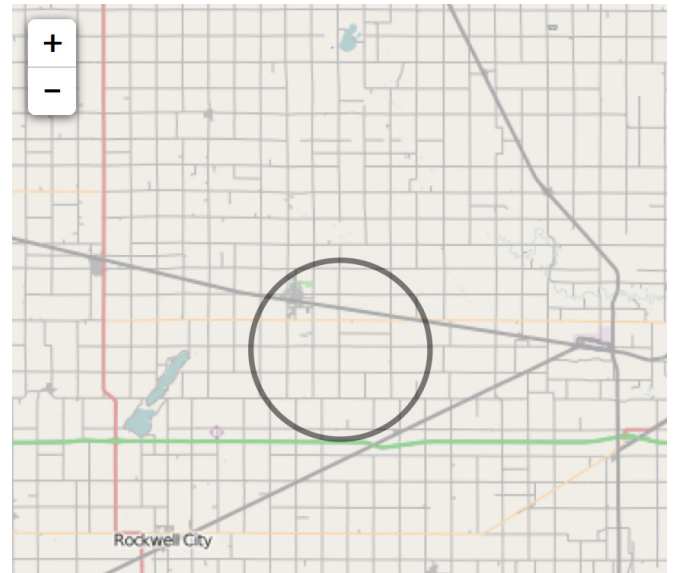


3. Creating Circles

- Circles are very easy to create in Leaflet requiring just the coordinates of the center and a value for the radius of the circle expressed in meters. Options for the display of a circle can also included.

```
//add circle with options
L.circle([42.5, -94.5], 5500, {
  color: 'black',
  fill: false,
  weight: 2
}).addTo(map);
```

- For radius expressed in pixels, see task sheet *Mapping APIs: Leaflet - Content Styled Circle Markers* **PM2082-15h** that discusses circle markers.



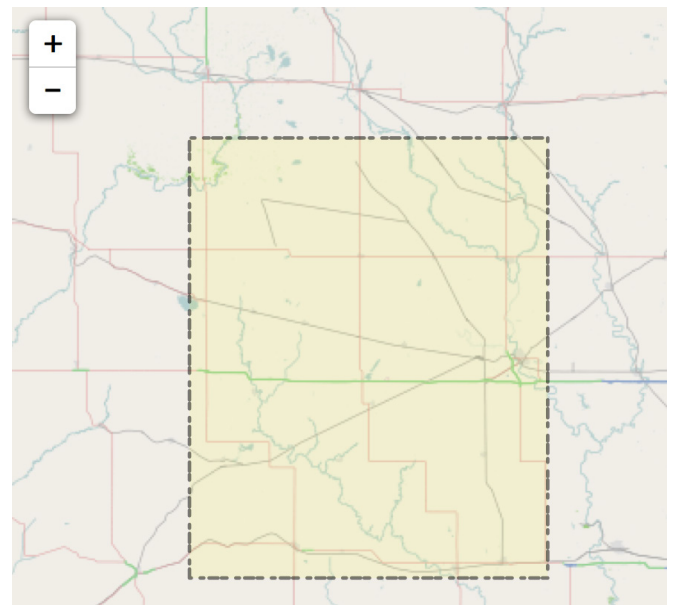
4. Additional Options

- Additional options include the following:

```
stroke: true, //stroke visibility
weight: 1, //stroke thickness
color: 'blue', //stroke color
opacity: 0.5, //stroke opacity 0 - 1

//for polygon
fill: true, //fill polygon with color
fillColor: 'yellow', //hexidecimal or named color
fillOpacity: 0.5, //fill fill opacity 0 - 1

//other options
dashArray: '5,3' //dash pattern for stroke
```



5. Additional Rectangles and Circles

- Additional rectangles and circles can be added by simply writing a new constructor that utilizes new coordinates. *Note: if you later want to interact with these items you should create each as a named object e.g. myCircle1. This will then allow them to more easily respond to methods and events that remove them from the map or change their style.*

```
var myCircle1 = new L.Circle([43.0,
-93.0], 3500, circleOptions.addTo(map);

//map.removeLayer(myCircle1);
myCircle1.setStyle({fillColor: 'yellow'});
```

Contact:

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