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Mapping API's: Leaflet - Creating Polylines and Polygons

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Mapping API's: Leaflet - Creating Polylines and Polygons

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 ([polyLeaflet.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 simple polyline and polygon overlays to a Leaflet map and then modify the options to change how these overlays display.

1. Introduction

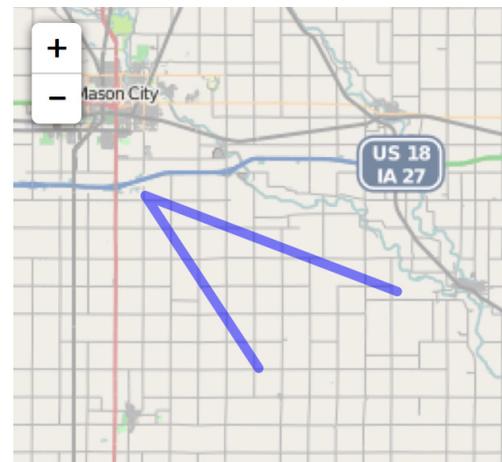
- First, you will need to start with a basic Leaflet map setup. Reference the task sheet: *Mapping API's: Leaflet - Getting Started* **PM2082-14r** to learn how to get this set up, or get the starter code from our GitHub page at <https://github.com/ISUEOGTP/GISTaskSheets/blob/master/Leaflet-Tutorials/helloLeaflet.htm>.

2. Creating Polylines

- Start by using the basic Leaflet setup to display a map and adjust the zoom and map center as desired.
- The first step is to instantiate a polyline or polygon object and to then provide it as an array of geographical coordinates and options describing how to display the object.
- A simple example of this is as follows and can be added to the end of the script after the map is created. *Note: the latlngs are currently an empty variable.*

```
var polyline = L.polyline(latlngs, {color: 'blue'}).addTo(map);
```

- Because the **latlngs** variable has not been defined, no line will appear on the map. Latitudes and longitudes can be added using a variety of syntaxes. Three different syntax examples are shown here and all examples have three pairs of coordinates passed that result in a V shaped polyline being drawn.
- In the example shown to the right, the coordinates are added directly to the constructor. However, this can make your code messy if you have a lot of data points.



```
var polyline = L.polyline([  
  [43.01, -93.1],  
  [43.1, -93.18],  
  [43.05, -93.7]  
], {color: 'blue'}).addTo(map);
```

- f. A more simple way to do this is to put the coordinates into a variable before the constructor as in the example below. However, this is also not as clean as it could be.

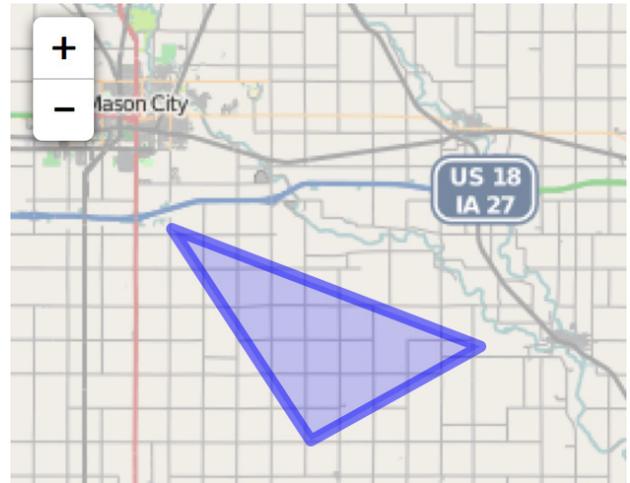
```
var latlngs = [
  new L.LatLng(43.01, -93.1),
  new L.LatLng(43.1, -93.18),
  new L.LatLng(43.05, -93.0)
];

var polyline = L.polyline(latlngs,
  {color: 'blue'}).addTo(map);
```

- g. A third way to provide the coordinates is to create an array of arrays as shown below.

```
var latlngs = [
  [43.01, -93.1],
  [43.1, -93.18],
  [43.05, -93.0]
];

var polyline = L.polyline(latlngs,
  {color: 'blue'}).addTo(map);
```



Polygon



Polyline

3. Creating a Polygon

- a. Switching the polyline to a polygon is very simple, just change **L.polyline** to **L.polygon**. Note that the first word *polyline* is a variable name and can be anything you wish e.g. *myPolygon*.

```
var polygon = L.polygon(latlngs, {color:
  'blue'}).addToMap);
```

- b. Polygons do not require any additional data points to close the polygons they just draw a line between the last and first point and fill the defined area with the specified fill color.
- c. Polylines and polygons can use a variety of options as defined by the Path class. As with the coordinates, options are best placed in a variable that is put before the polyline or polygon constructor. Options shown to the right. Note: *additional polylines and polygons can be created in a map and make use of the same options, however they would need to connect to a unique data set of points and coordinates.*

```
var pathOptions = {
  stroke: true, //stroke visibility
  weight: 1, //stroke thickness
  color: 'blue', //stroke color
  opacity: 0.5, //stroke opacity
  //for polygons
  fill: true, //polygon fill
  fillColor: 'yellow', //fill color
  fillOpacity: 0.5, //fill opacity
  //other options
  dashArray: '5,3' //dash pattern
  used by stroke
};

var polygon = L.polygon(latlngs,
  pathOptions).addTo(map);
```

Contact:

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