JEKYLL, LEAFLET & TURFJS

A Presentation to the Northeast Ohio GIS Sympoisum

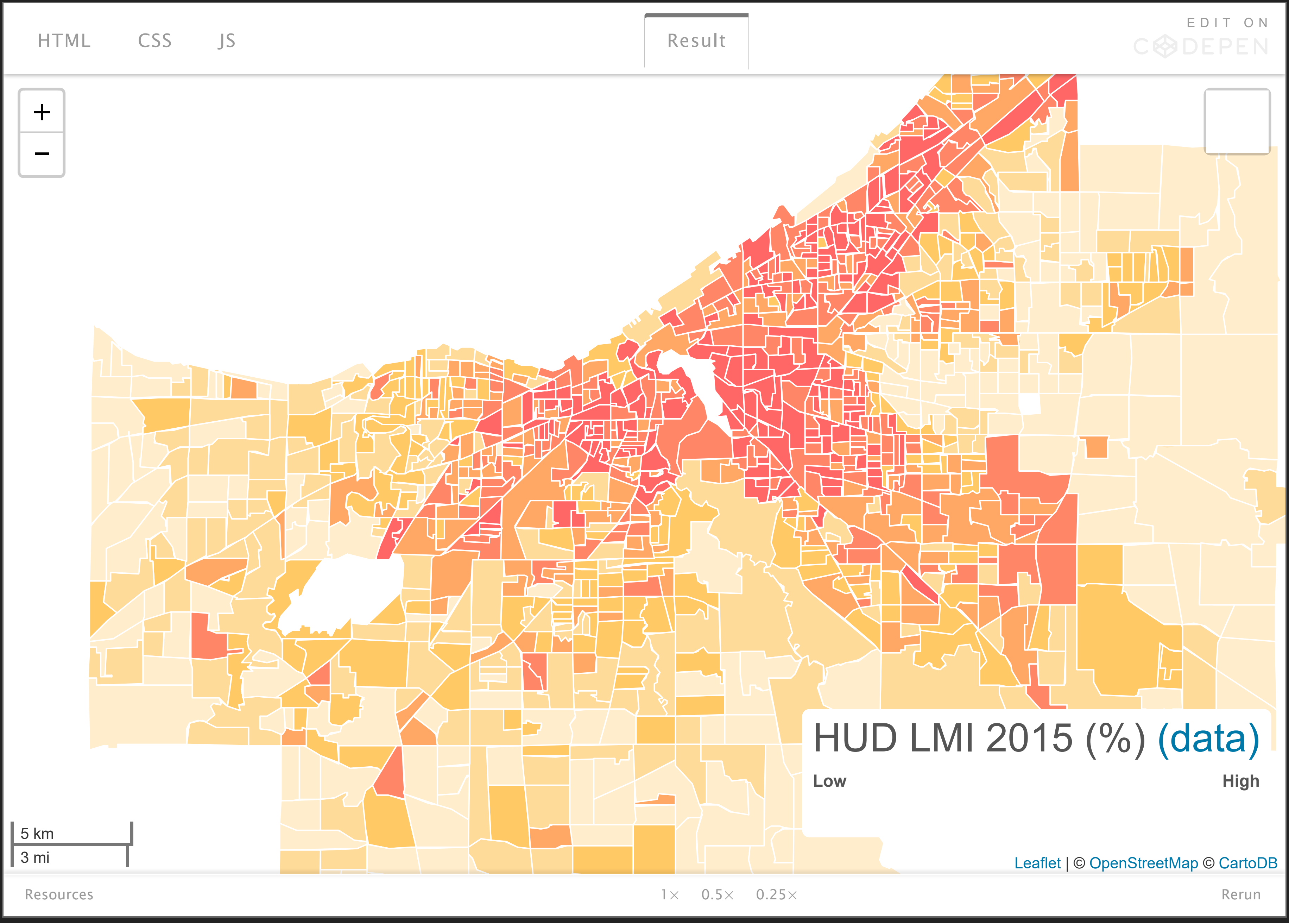
August 25, 2016 - Malcolm Meyer

LOCATION

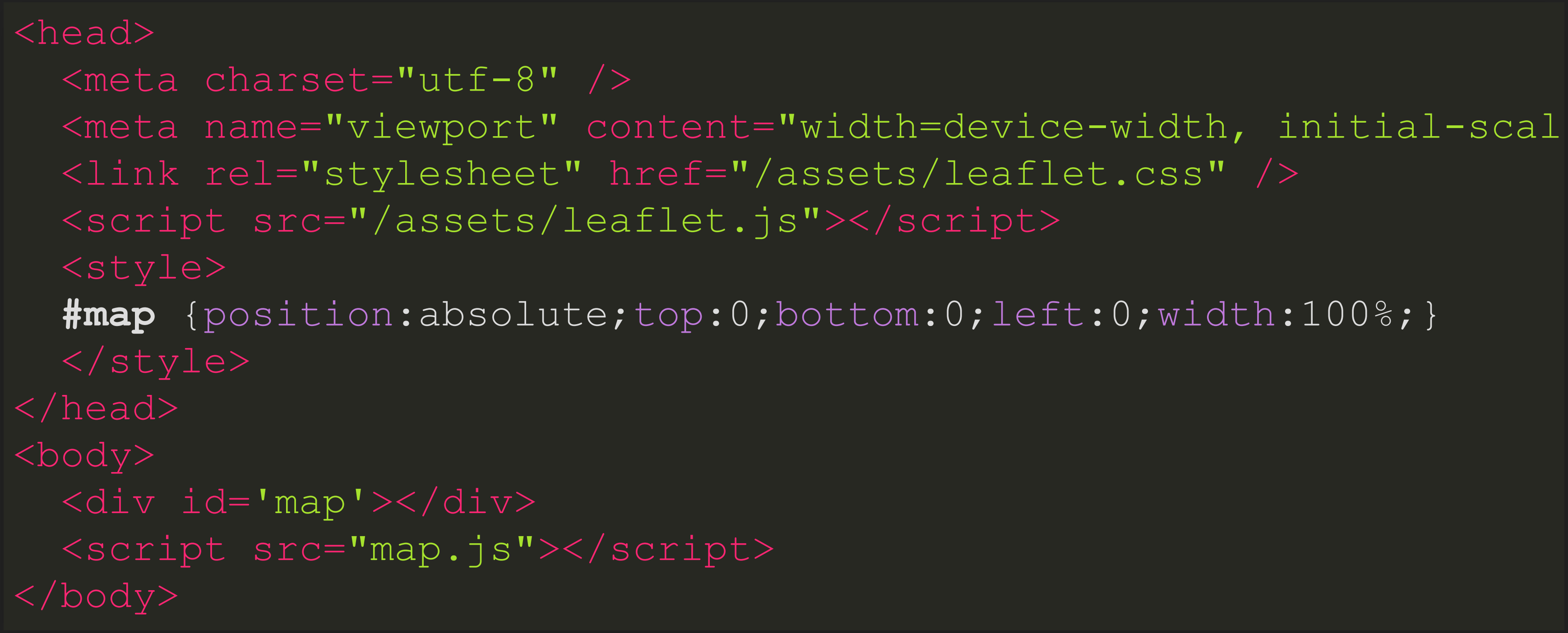
LOCATION INFORMATION

MAPS TELL A STORY

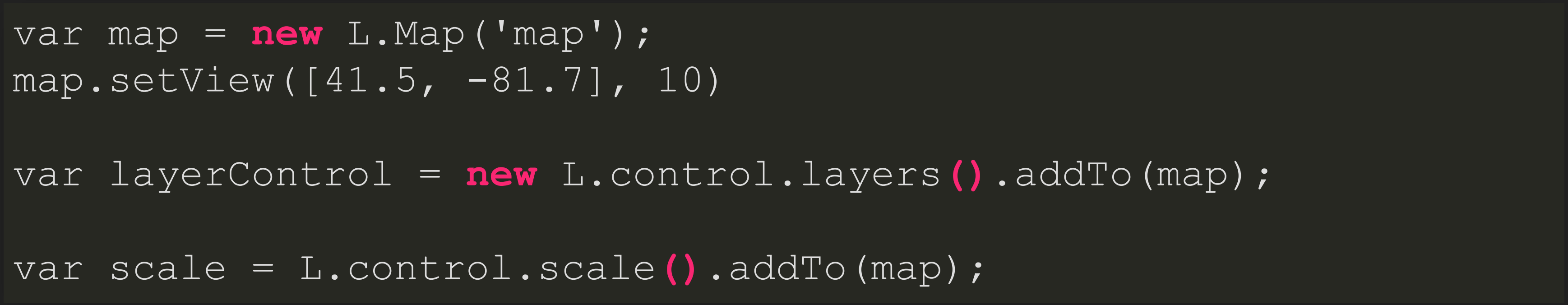
LOW TO MODERATE INCOME



FULLSCREEN LEAFLET MAP



```
<head>
  <meta charset="utf-8" />
  <meta name="viewport" content="width=device-width, initial-scal
  <link rel="stylesheet" href="/assets/leaflet.css" />
  <script src="/assets/leaflet.js"></script>
  <style>
  #map {position:absolute;top:0;bottom:0;left:0;width:100%;}
  </style>
</head>
<body>
  <div id='map'></div>
  <script src="map.js"></script>
</body>
```



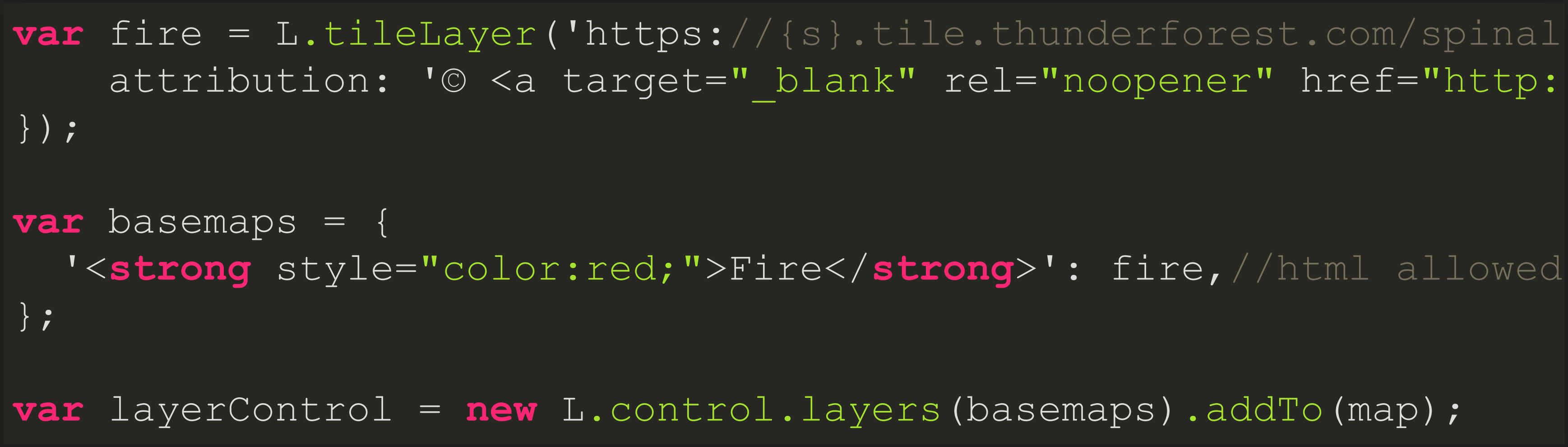
```
var map = new L.Map('map');
map.setView([41.5, -81.7], 10)

var layerControl = new L.control.layers().addTo(map);

var scale = L.control.scale().addTo(map);
```

WE FORGOT THE LAYERS!

HTML
CSS
JS
Result
EDIT ON
CODEPEN
+
−
10 km
5 mi
Leaflet
Resources
1×
0.5×
0.25×
Rerun

ADDING BASEMAPS

LEAFLET PROVIDERS



```
var fire = L.tileLayer('https://{s}.tile.thunderforest.com/spinal
    attribution: '© <a target="_blank" rel="noopener" href="http:
});

var basemaps = {
  '<strong style="color:red;">Fire</strong>': fire,//html allowed
};

var layerControl = new L.control.layers(basemaps).addTo(map);
```

ADDING LAYERS

SIMPLIFICATION & TOPOJSON VIA MAPSHAPER

Original GeoJSON: 3.7mb

```
var blockGroups = L.geoJson(null, {
  onEachFeature: function(feature, layer) {
    lmi = (layer.feature.properties.lowmodpct * 100).toFixed(2);
    layer.bindPopup('LMI: ' + lmi + '%');
  }
});
```

leaflet-omnivore

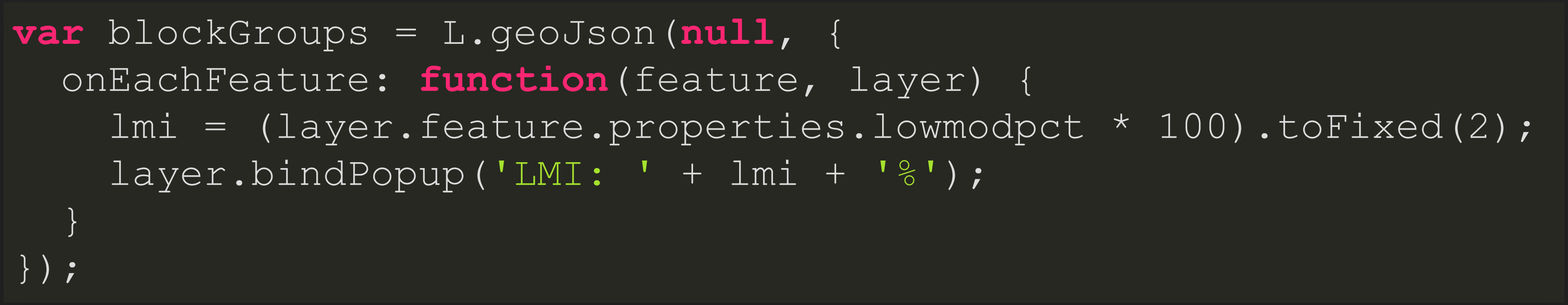
```
var data = omnivore.topojson('/assets/blockgroups.json', null, bl
```

ADDING LAYERS

SIMPLIFICATION & TOPOJSON VIA MAPSHAPER

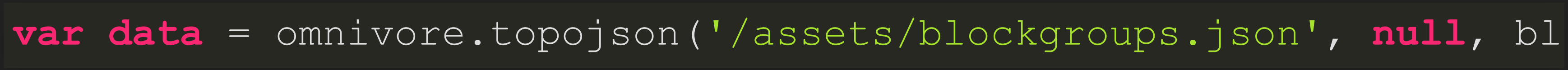
Original GeoJSON: 3.7mb

Simplified Topojson: **324kb**



```
var blockGroups = L.geoJson(null, {
  onEachFeature: function(feature, layer) {
    lmi = (layer.feature.properties.lowmodpct * 100).toFixed(2);
    layer.bindPopup('LMI: ' + lmi + '%');
  }
});
```

leaflet-omnivore



```
var data = omnivore.topojson('/assets/blockgroups.json', null, bl
```

ALTERNATIVE METHODS

(Topojson Support Must be Added)

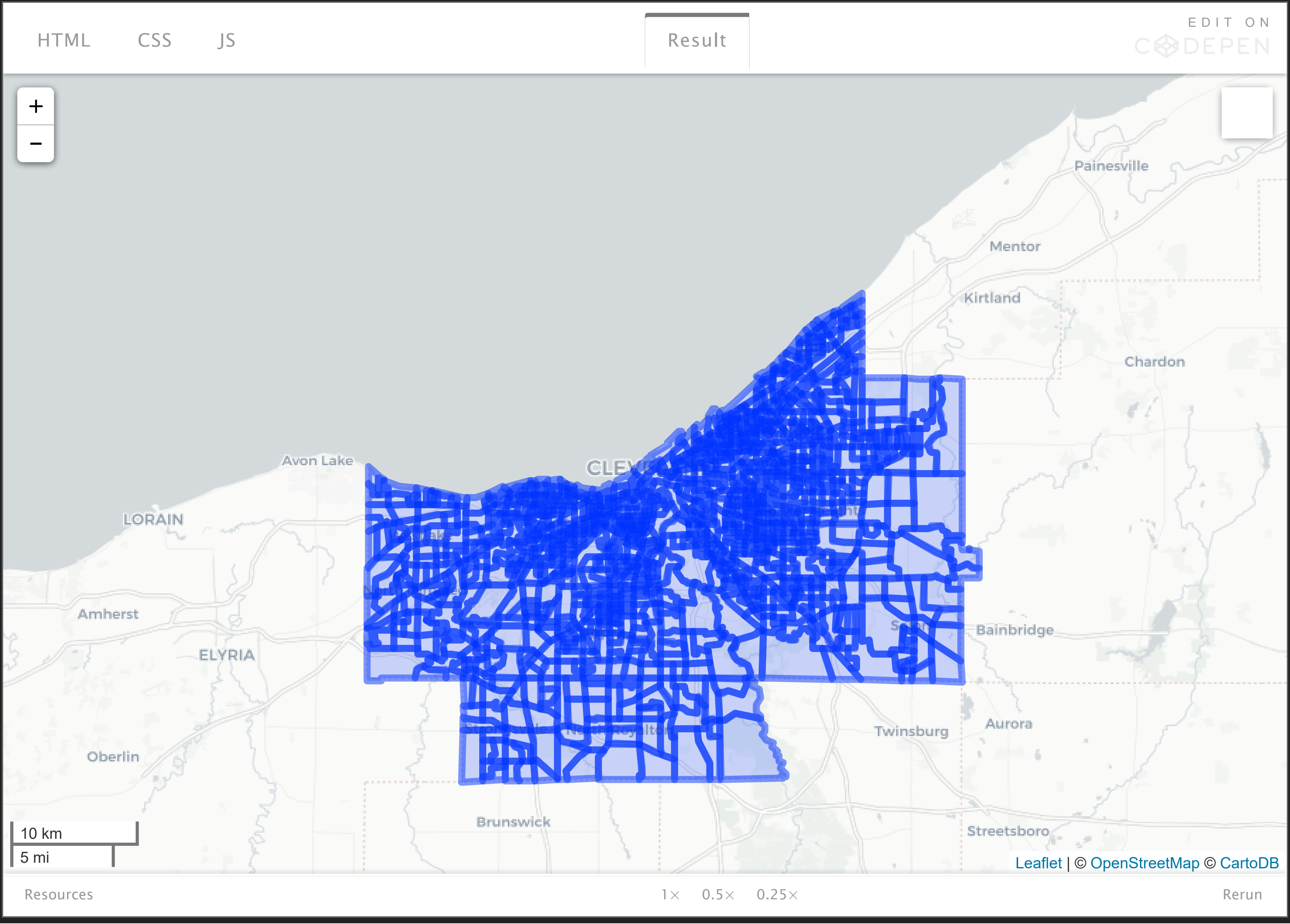
leaflet-ajax

```
/*Load data directly but dependent on jQuery*/
var blockGroups = new L.GeoJSON.AJAX("/assets/blockgroups.geojson
```

jQuery

```
/*Or just use jQuery*/
$.getJSON("/assets/blockgroups.geojson", function(data) {
  /*add geojson formatted data to our L.geoJson() feature*/
  blockGroups.addData(data);
});
```

BLOCK GROUPS (TOPOJSON)

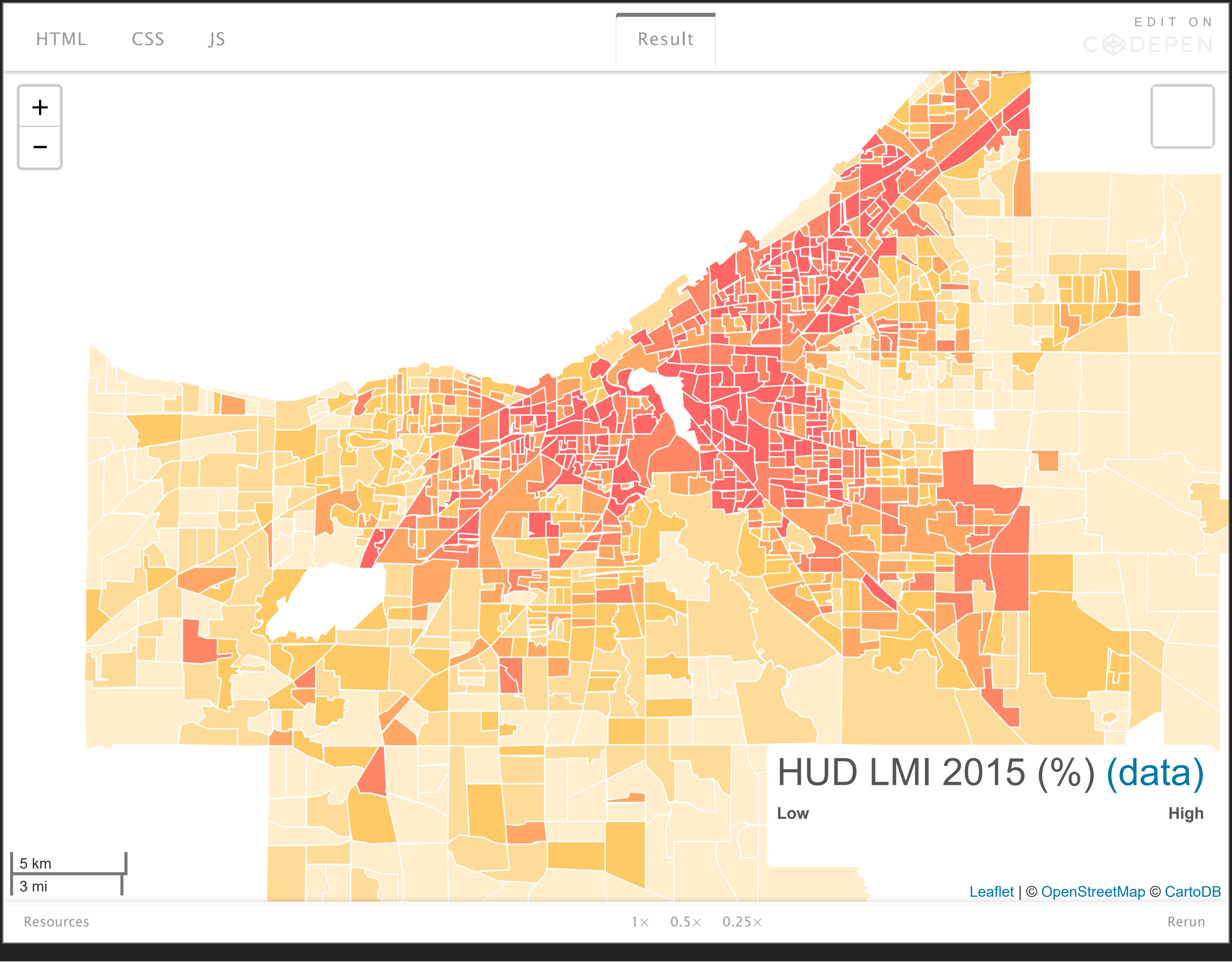


WHAT ABOUT THOSE PRETTY COLORS?

CHOROPLETH MADE SIMPLE

CHOROPLETH PLUGIN

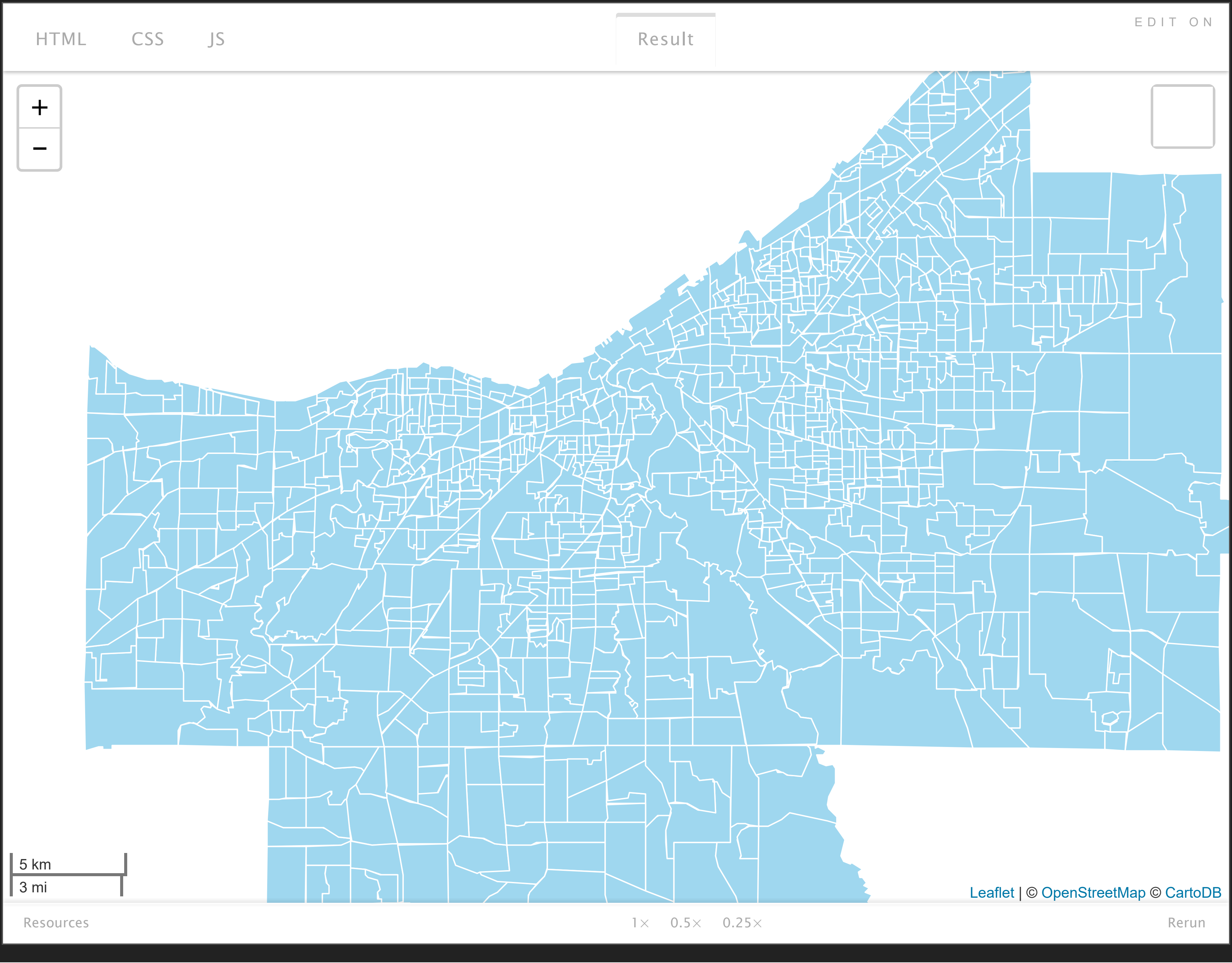
```
var choropleth = L.choropleth(data.toGeoJSON(), {
    valueProperty: 'lowmodpct',
    scale: ['white', 'orange', 'red'],
    steps: 7,
    mode: 'q',
    style: {
        color: '#fff', // border color
        weight: 2,
        fillOpacity: 0.8
    },
    onEachFeature: function(feature, layer) {
      lmi = layer.feature.properties.lowmodpct * 100;
      layer.bindPopup('LMI: ' + lmi + '%')
    }
}).addTo(map)
```


HTML
CSS
JS
Result
EDIT ON
CODEPEN
+
−
HUD LMI 2015 (%) (data)
Low
High
5 km
3 mi
Leaflet | © OpenStreetMap © CartoDB
Resources
1×
0.5×
0.25×
Rerun

ANALYSIS WITH TURF - WITHIN

TURF DOCUMENTATION

```
data.on('ready', function() {
  var selBridges = new L.geoJson().addTo(map);
  blockGroups.on('click', function(e) {
    selBridges.clearLayers();
    var selLayer = new L.geoJson(e.layer.toGeoJSON());
    var within = turf.within(bridges.toGeoJSON(), selLayer.toGeoJ
    selBridges.addData(within);
  })
});
```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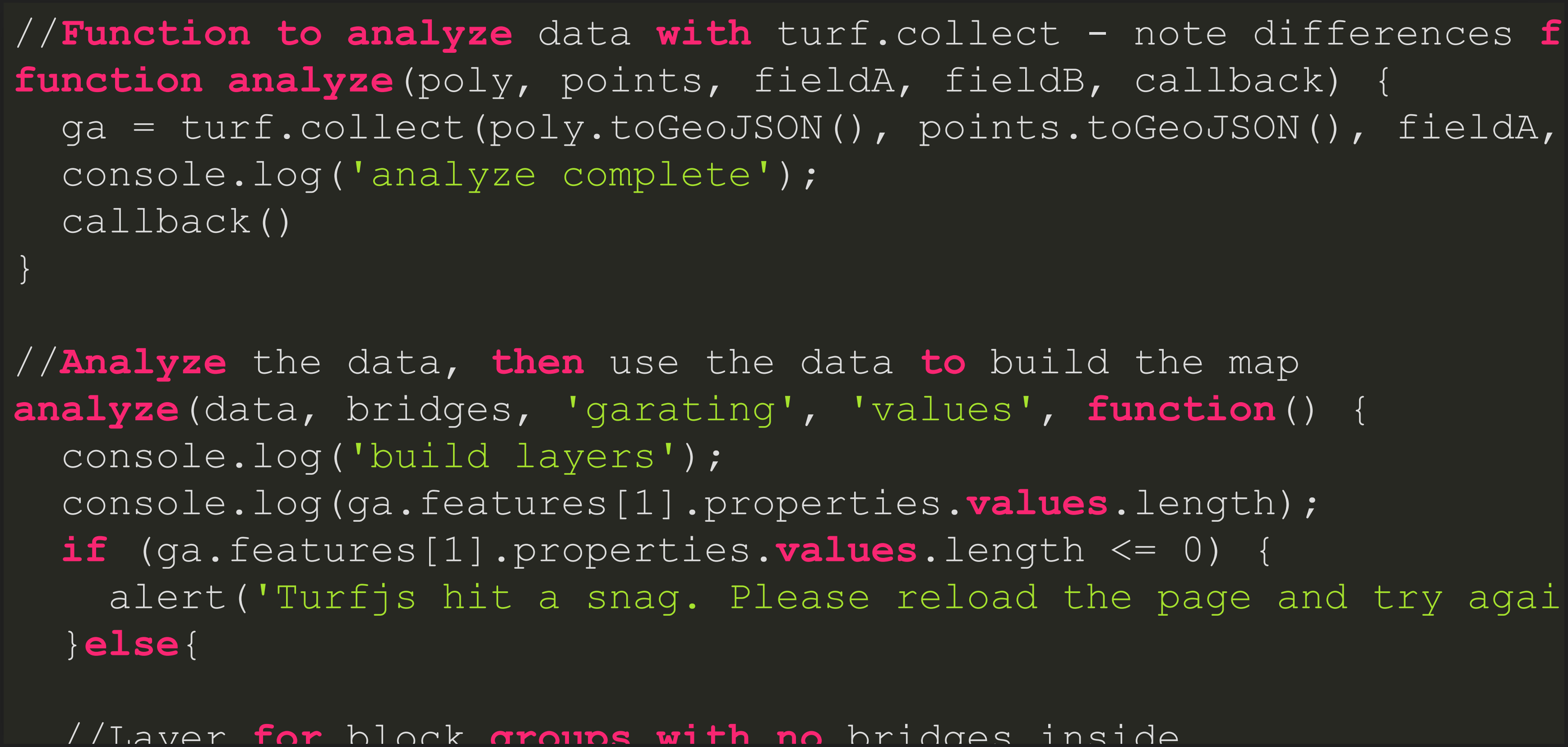
−
5 km
3 mi
Leaflet | © OpenStreetMap © CartoDB
Resources
1×
0.5×
0.25×
Rerun

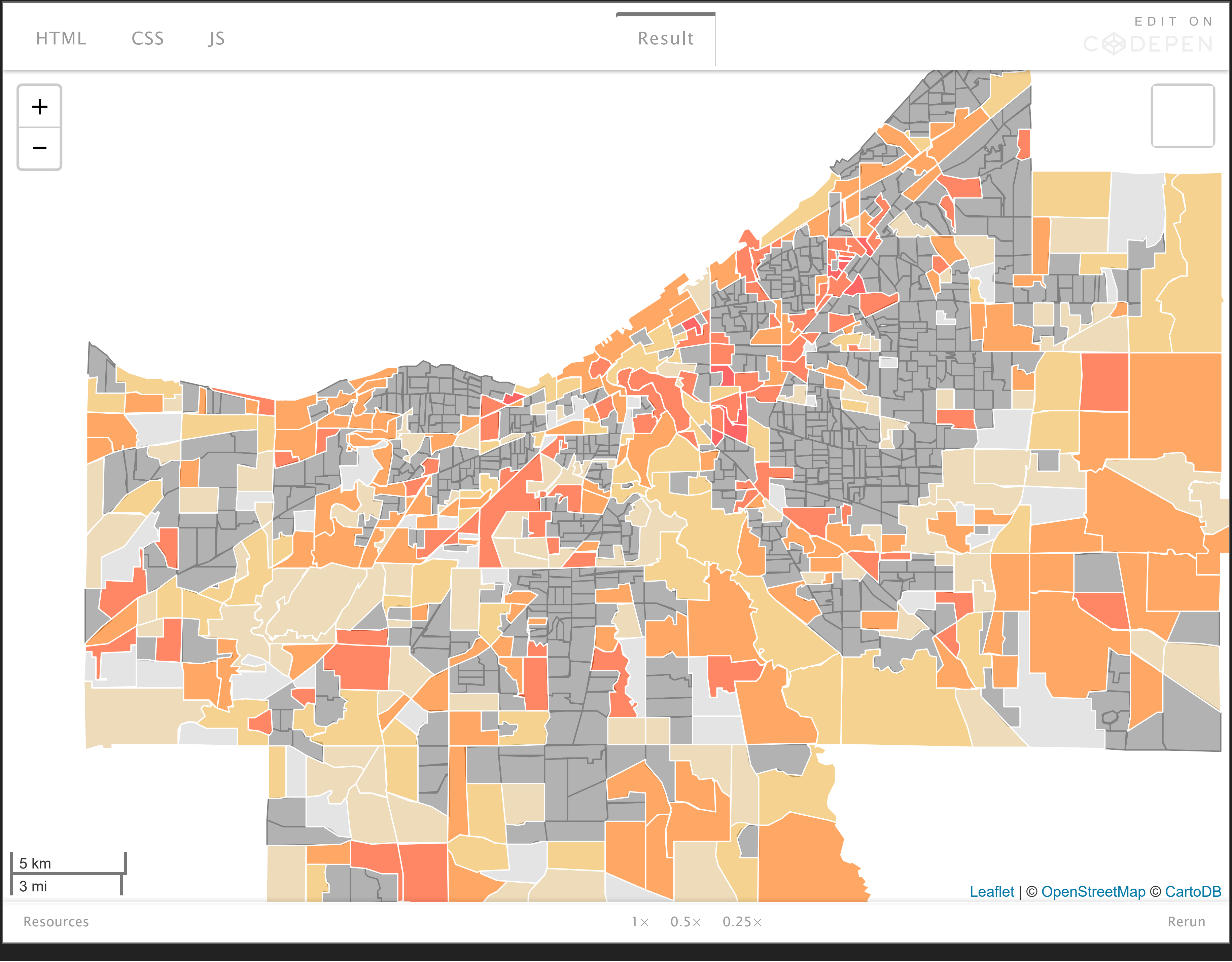
TURF COLLECT



```
//Function to analyze data with turf.collect - note differences f
function analyze(poly, points, fieldA, fieldB, callback) {
  ga = turf.collect(poly.toGeoJSON(), points.toGeoJSON(), fieldA,
  console.log('analyze complete');
  callback()
}

//Analyze the data, then use the data to build the map
analyze(data, bridges, 'garating', 'values', function() {
  console.log('build layers');
  console.log(ga.features[1].properties.values.length);
  if (ga.features[1].properties.values.length <= 0) {
    alert('Turfjs hit a snag. Please reload the page and try agai
  }else{

  //Layer for block groups with no bridges inside
```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5 km
3 mi
Leaflet | © OpenStreetMap © CartoDB
Resources
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0.5×
0.25×
Rerun

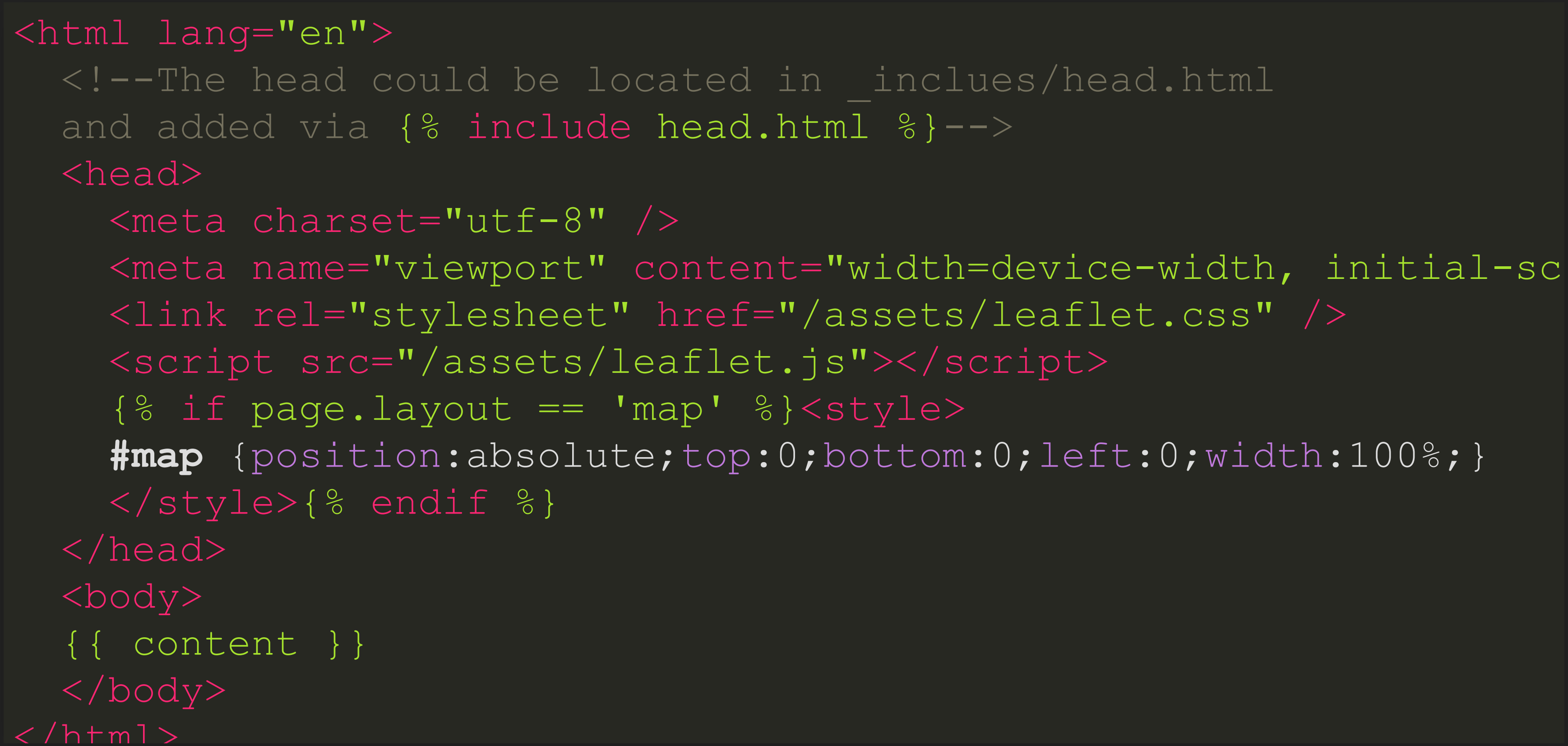
SIMPLIFY PRODUCTION WITH JEKYLL

CREATING
A JEKYLL _site/

_data/
_includes/
_layouts/
_posts/
_config.yml

DEFAULT LAYOUT

_layouts/default.html



```
<html lang="en">
  <!--The head could be located in _inclues/head.html
  and added via {% include head.html %}-->
  <head>
    <meta charset="utf-8" />
    <meta name="viewport" content="width=device-width, initial-sc
    <link rel="stylesheet" href="/assets/leaflet.css" />
    <script src="/assets/leaflet.js"></script>
    {% if page.layout == 'map' %}<style>
    #map {position:absolute;top:0;bottom:0;left:0;width:100%;}
    </style>{% endif %}
  </head>
  <body>
  {{ content }}
  </body>
</html>
```

MAP LAYOUT

_layouts/maps.html

```
---
layout: default
---
<div id='map'></div>
<script>
var map = new L.Map('map');
map.setView({{page.center}}, {{page.zoom}})//values from the post

var scale = L.control.scale().addTo(map);

//Load your basemaps here
var ortho = L.tileLayer();
var streets = L.tileLayer();
var topo = L.tileLayer();

//Add them to the layerControl
```

MAP POST

_posts/YYYY-MM-DD-my-post-title.js

```
---
layout: maps
title: My New Map
center: "[41.5, -81.7]"
zoom: 10
basemap: ortho
---
//Add code here such as layers and interaction
```

THANKS!

MALCOLM MEYER

@getBounds

GitHub Examples

CODEPEN Examples