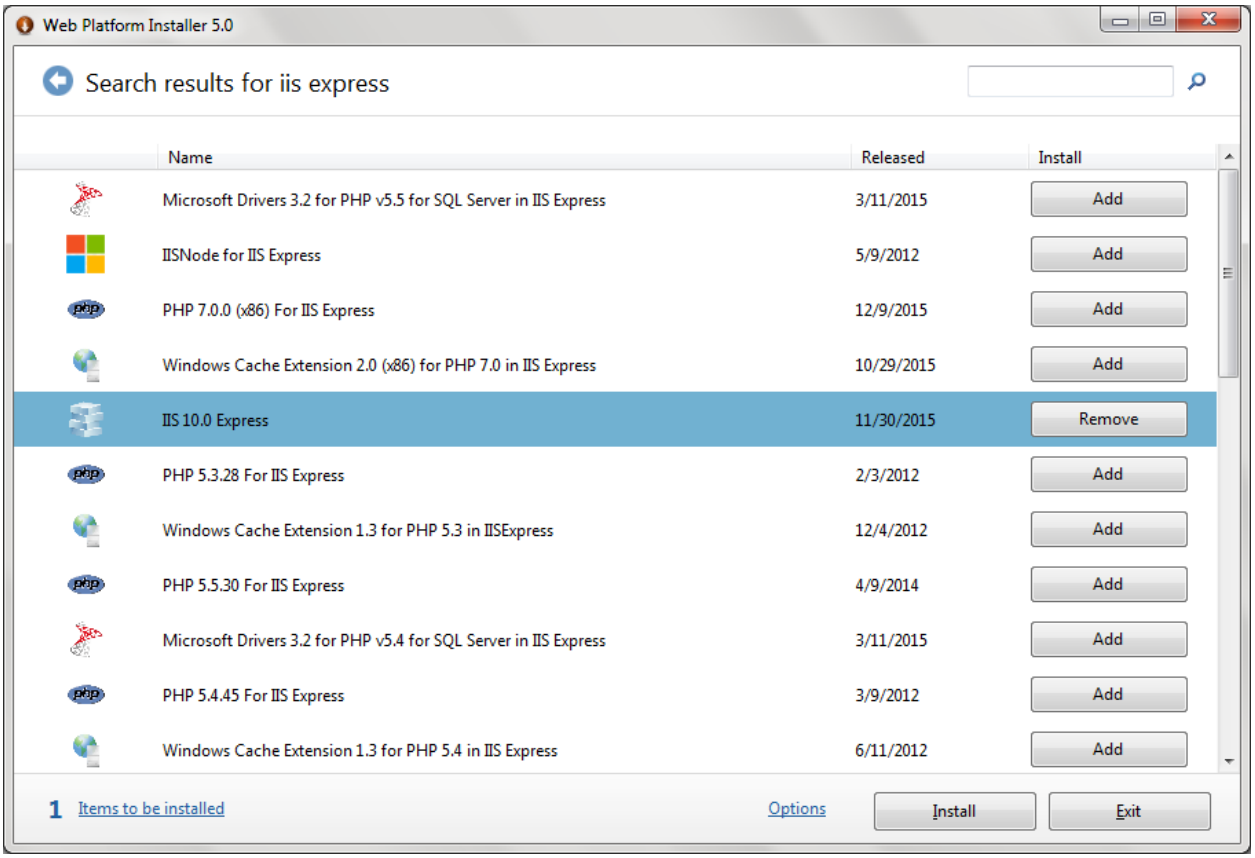
Chapter 1: Foundation for the API




https://developers.arcgis.com/javascript/jsapi/
ArcGIS for Developers
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ArcGIS API for JavaScript
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Guide
API Reference
Sample Code
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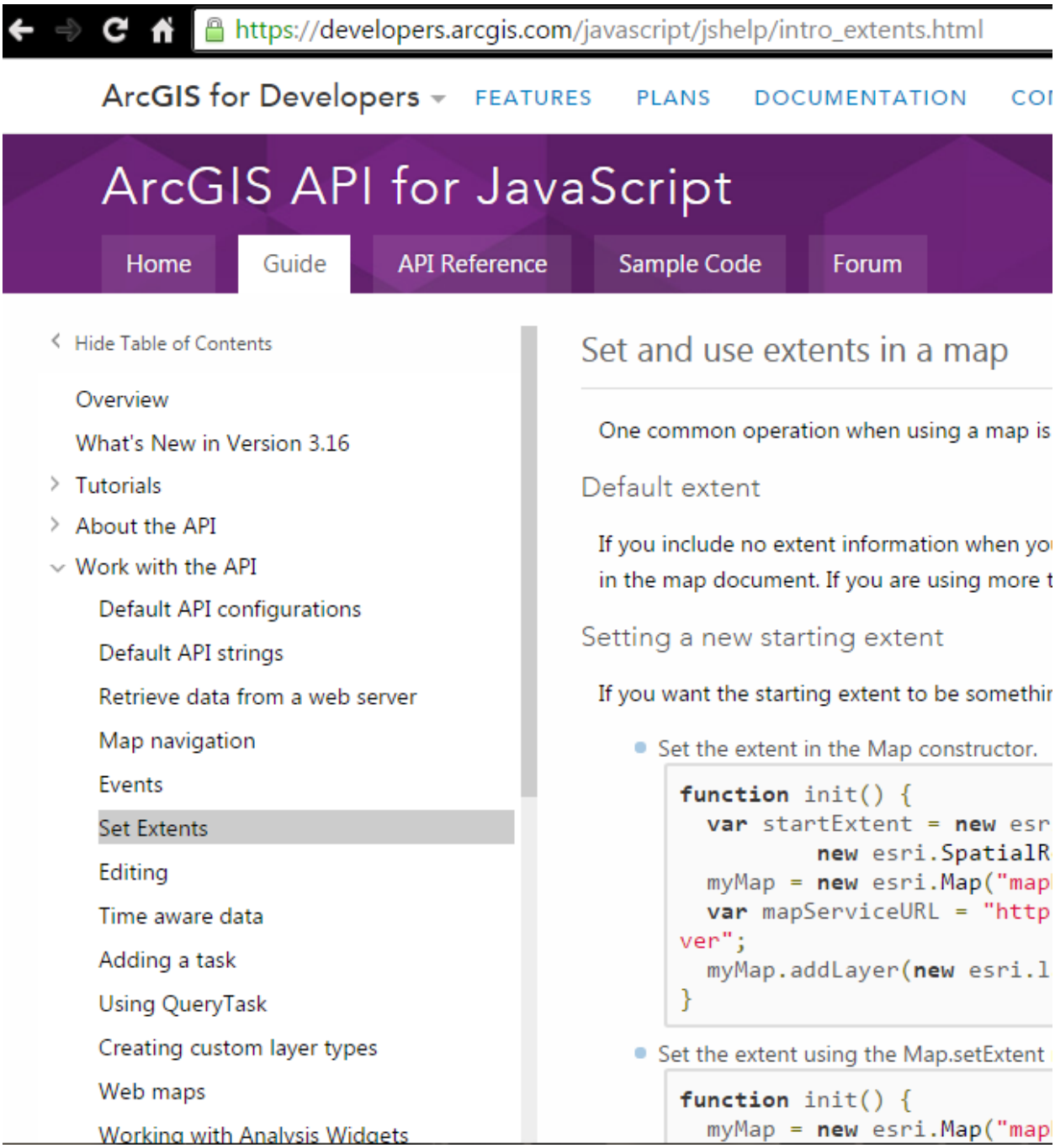
esri/dijit/analysis
esri/dijit/editing
esri/dijit/geoenrichment
esri/dijit/util
esri/geometry
esri/layers
ArcGISDynamicMapServiceLayer
ArcGISImageServiceLayer
ArcGISImageServiceVectorLayer
ArcGISTiledMapServiceLayer
CodedValueDomain
CSVLayer
DataAdapterFeatureLayer
DataSource
DimensionalDefinition
Domain
DynamicLayerInfo
DynamicMapServiceLayer
FeatureEditResult
API Reference Overview
The API Reference contains detai
as properties, methods and even
Classes in the API are organized i
module, refer to the preferred ar
packages (also sometimes called
If you are interested in writing yc
Modules which Inherit from esri/layers grouped under it


https://developers.arcgis.com/javascript/jshelp/intro_extents.html
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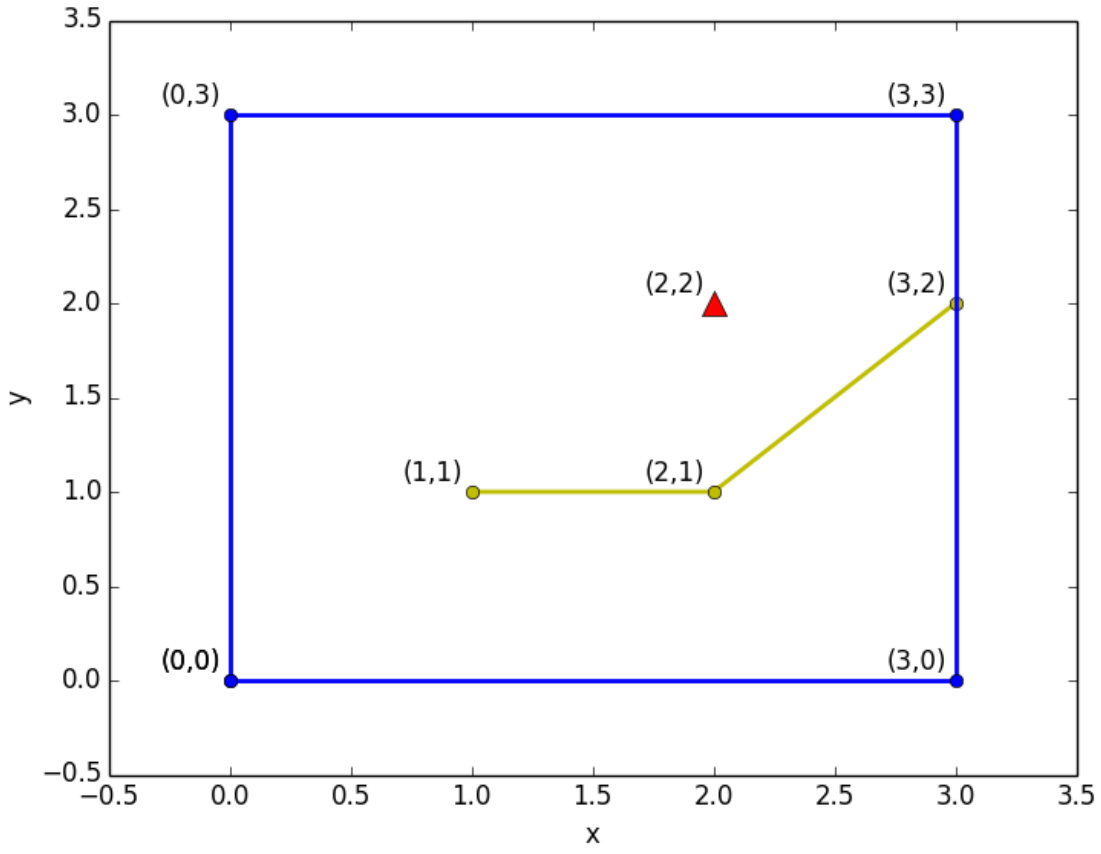
Overview
What's New in Version 3.16
Tutorials
About the API
Work with the API
Default API configurations
Default API strings
Retrieve data from a web server
Map navigation
Events
Set Extents
Editing
Time aware data
Adding a task
Using QueryTask
Creating custom layer types
Web maps
Working with Analysis Widgets
Set and use extents in a map
One common operation when using a map is
Default extent
If you include no extent information when yo
in the map document. If you are using more t
Setting a new starting extent
If you want the starting extent to be somethir
Set the extent in the Map constructor.
function init() {
var startExtent = new esr
new esri.SpatialR
myMap = new esri.Map("map
var mapServiceURL = "http
ver";
myMap.addLayer(new esri.l
}
Set the extent using the Map.setExtent
function init() {
myMap = new esri.Map("map

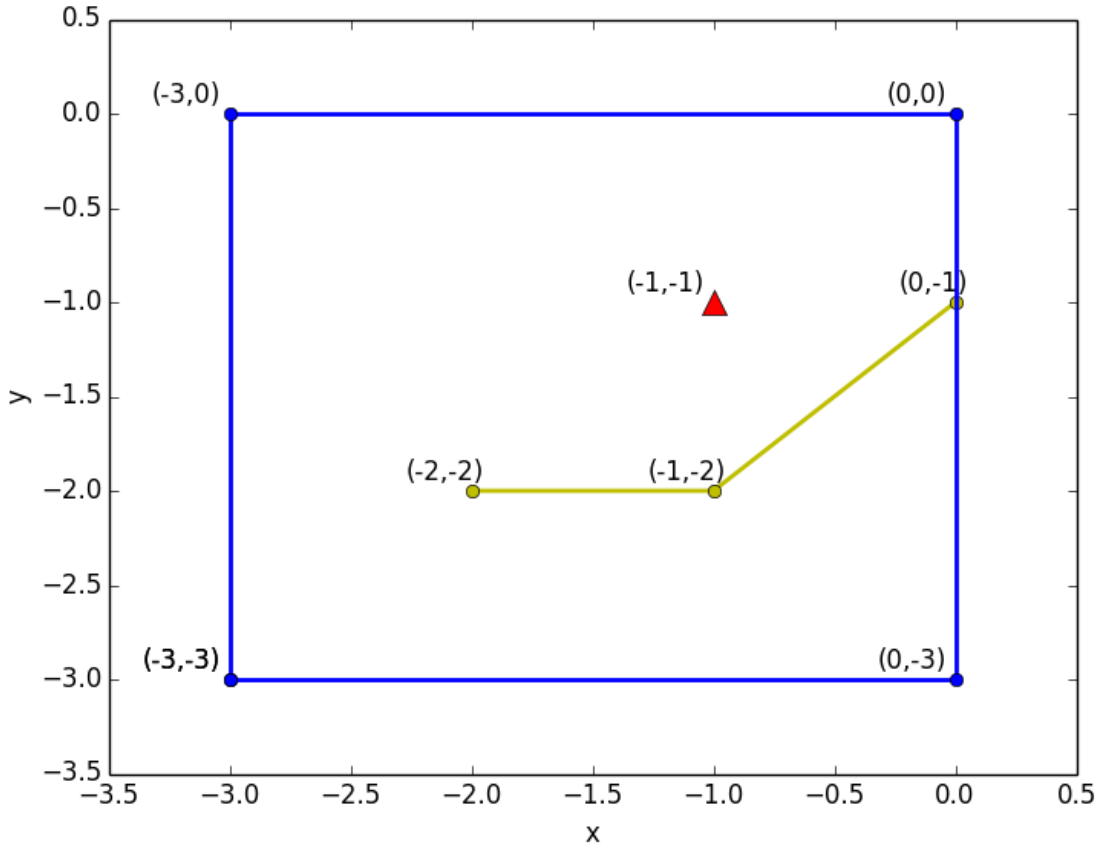
```
require(
[
"module1",
"module2",
"module3"
],
    function (
        Module1,
        Module2,
        Module3
    ) {
        var module1 = new Module1();
        Module2.method1();
    });
```

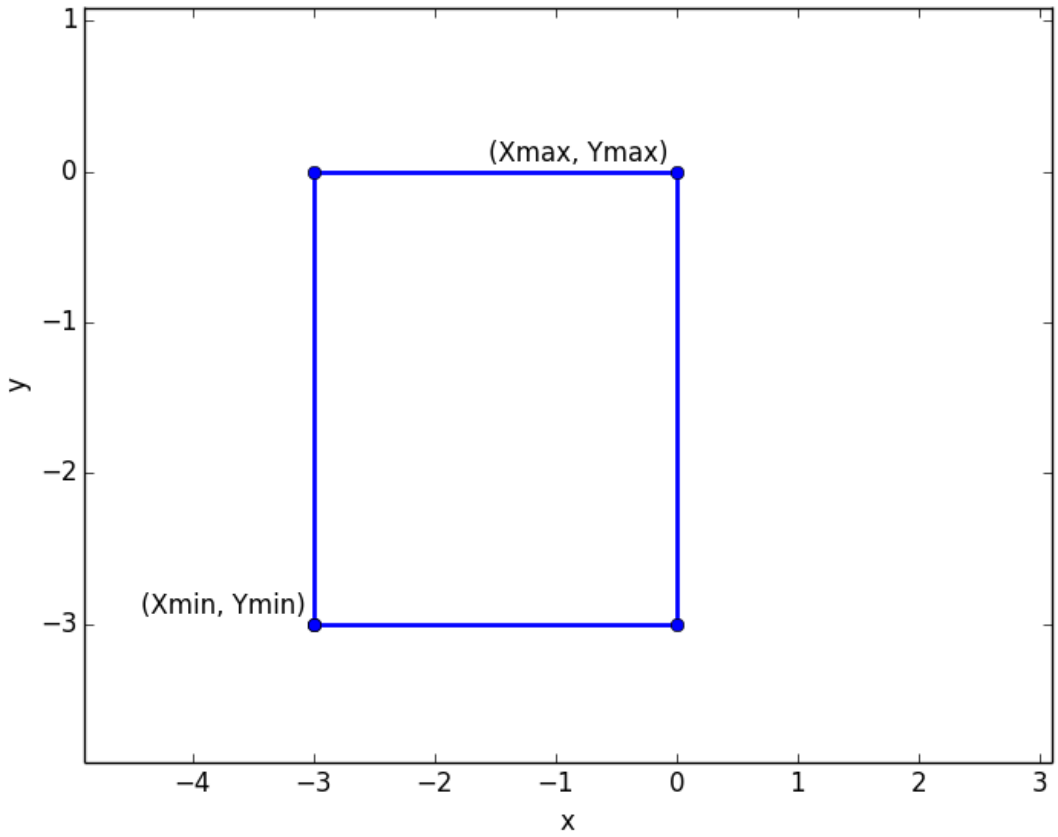
Load dependency modules' array

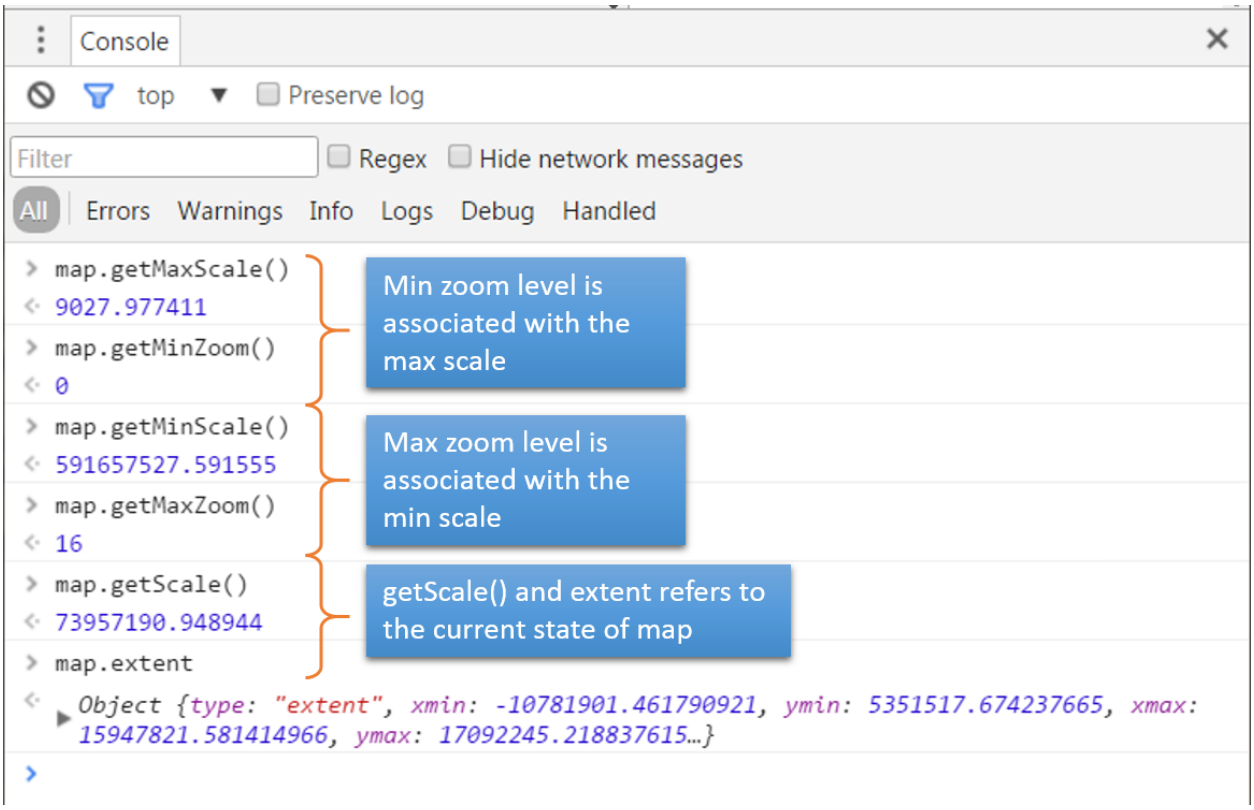
Callback function providing aliases for the loaded modules

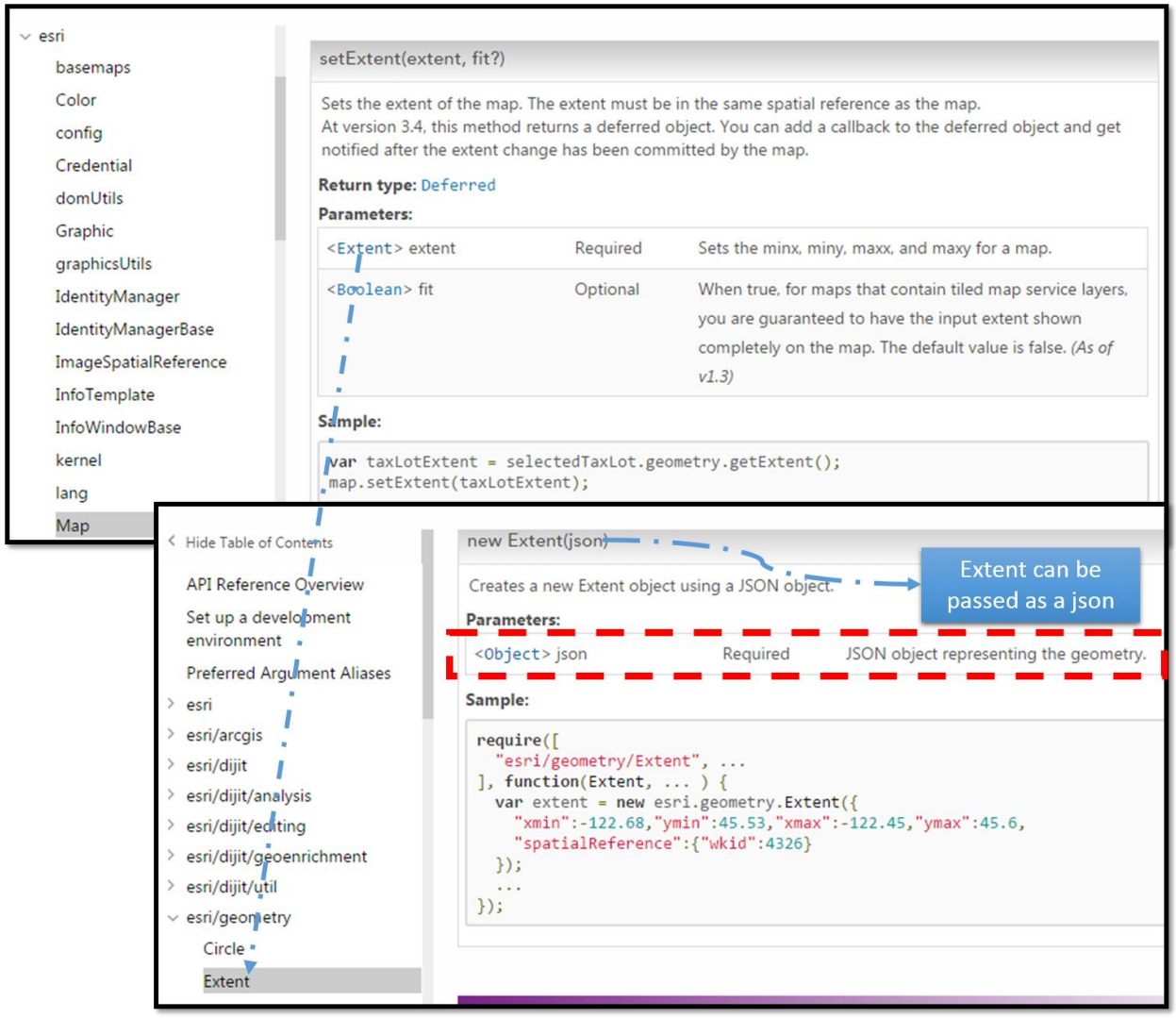
Use the methods exposed by the modules or instantiate the modules with parameters




(-3,0)
(0,0)
(-1,-1)
(0,-1)
(-2,-2)
(-1,-2)
(-3,-3)
(0,-3)
0.5
0.0
−0.5
−1.0
−1.5
−2.0
−2.5
−3.0
−3.5
y
−3.5
−3.0
−2.5
−2.0
−1.5
−1.0
−0.5
0.0
0.5
x


(Xmax, Ymax)
(Xmin, Ymin)
y
x
1
0
−1
−2
−3
−4
−3
−2
−1
0
1
2
3


Console
top
Preserve log
Filter
Regex
Hide network messages
All
Errors
Warnings
Info
Logs
Debug
Handled
map.getMaxScale()
9027.977411
map.getMinZoom()
0
map.getMinScale()
591657527.591555
map.getMaxZoom()
16
map.getScale()
73957190.948944
map.extent
Object {type: "extent", xmin: -10781901.461790921, ymin: 5351517.674237665, xmax: 15947821.581414966, ymax: 17092245.218837615…}
Min zoom level is associated with the max scale
Max zoom level is associated with the min scale
getScale() and extent refers to the current state of map


esri
basemaps
Color
config
Credential
domUtils
Graphic
graphicsUtils
IdentityManager
IdentityManagerBase
ImageSpatialReference
InfoTemplate
InfoWindowBase
kernel
lang
Map
setExtent(extent, fit?)
Sets the extent of the map. The extent must be in the same spatial reference as the map.
At version 3.4, this method returns a deferred object. You can add a callback to the deferred object and get notified after the extent change has been committed by the map.
Return type: Deferred
Parameters:
<Extent> extent
Required
Sets the minx, miny, maxx, and maxy for a map.
<Boolean> fit
Optional
When true, for maps that contain tiled map service layers, you are guaranteed to have the input extent shown completely on the map. The default value is false. (As of v1.3)
Sample:
var taxLotExtent = selectedTaxLot.geometry.getExtent();
map.setExtent(taxLotExtent);
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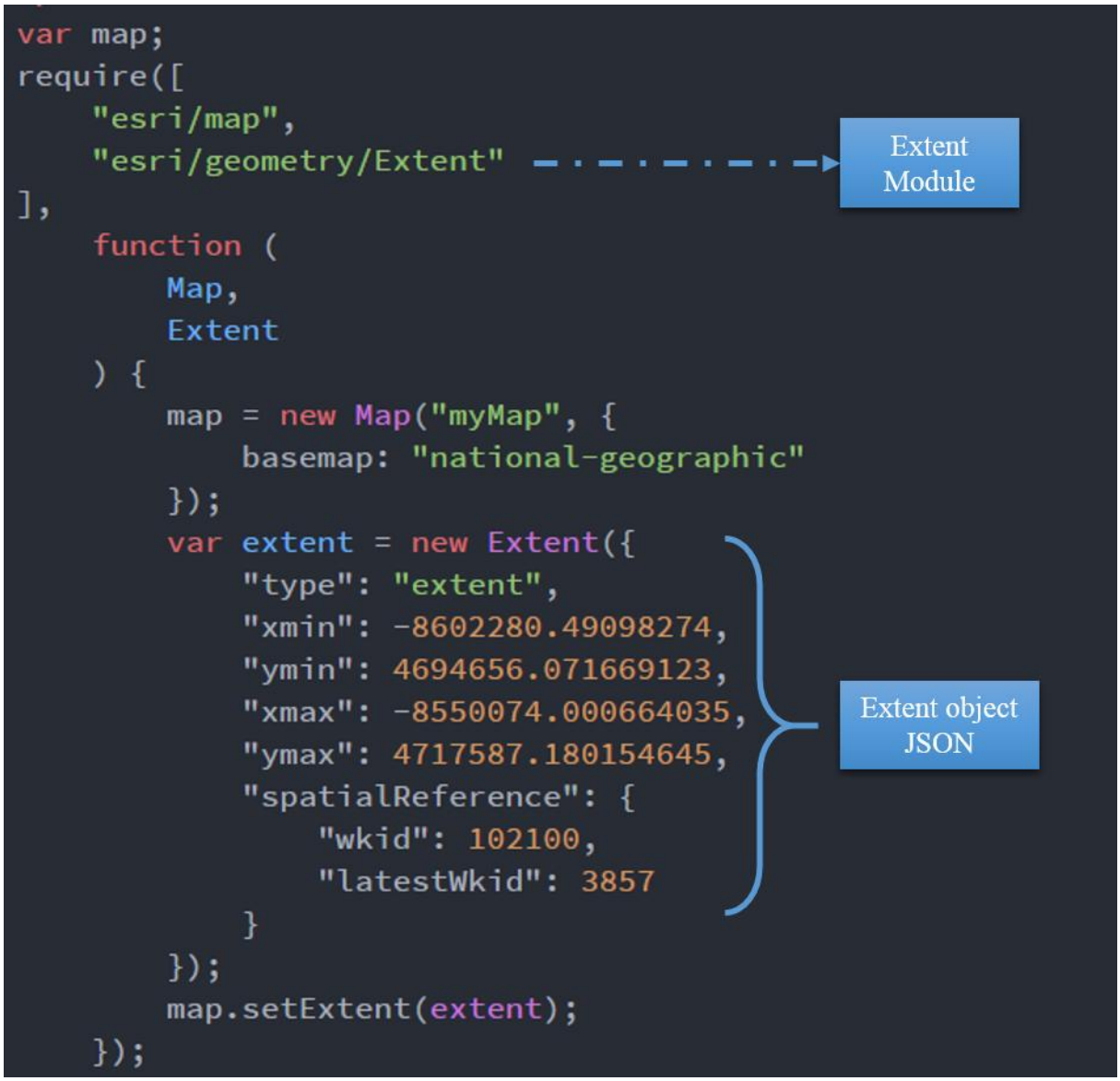
API Reference Overview
Set up a development environment
Preferred Argument Aliases
esri
esri/arcgis
esri/dijit
esri/dijit/analysis
esri/dijit/editing
esri/dijit/geoenrichment
esri/dijit/util
esri/geometry
Circle
Extent
new Extent(json)
Creates a new Extent object using a JSON object.
Extent can be passed as a json
Parameters:
<Object> json
Required
JSON object representing the geometry.
Sample:
require([
"esri/geometry/Extent", ...
], function(Extent, ...) {
var extent = new esri.geometry.Extent({
"xmin":-122.68,"ymin":45.53,"xmax":-122.45,"ymax":45.6,
"spatialReference":{"wkid":4326}
});
...
});

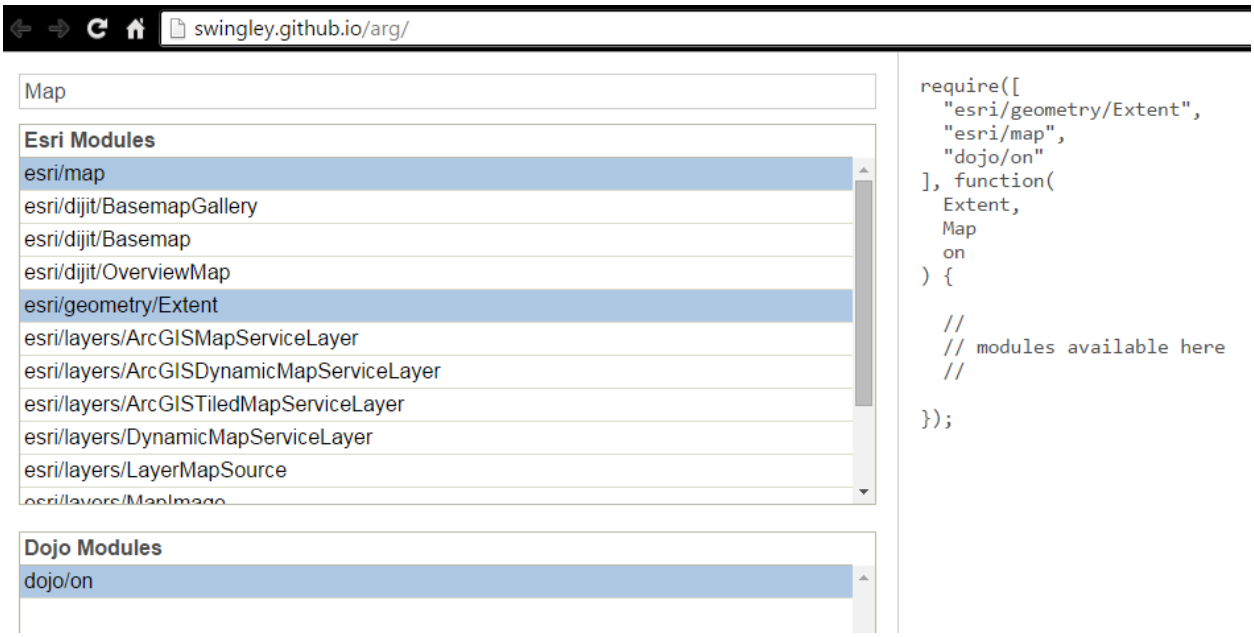
```
> map.extent
```

Map extent object

```
Object {type: "extent", xmin: -10691400.02030139, ymin: 4108957.3424341204, xmax:
-7350184.639900655, ymax: 5576548.285509114…}
  ▶ spatialReference: Object
    type: "extent"
    xmax: -7350184.639900655
    xmin: -10691400.02030139
    ymax: 5576548.285509114
    ymin: 4108957.3424341204
  ▶ __proto__: Object
> JSON.stringify(map.extent)
"{"type":"extent","xmin":-10691400.02030139,"ymin":4108957.3424341204,"xmax":-73501
84.639900655,"ymax":5576548.285509114,"spatialReference":
{"wkid":102100,"latestWkid":3857}}"
>
```

Map extent object as JSON

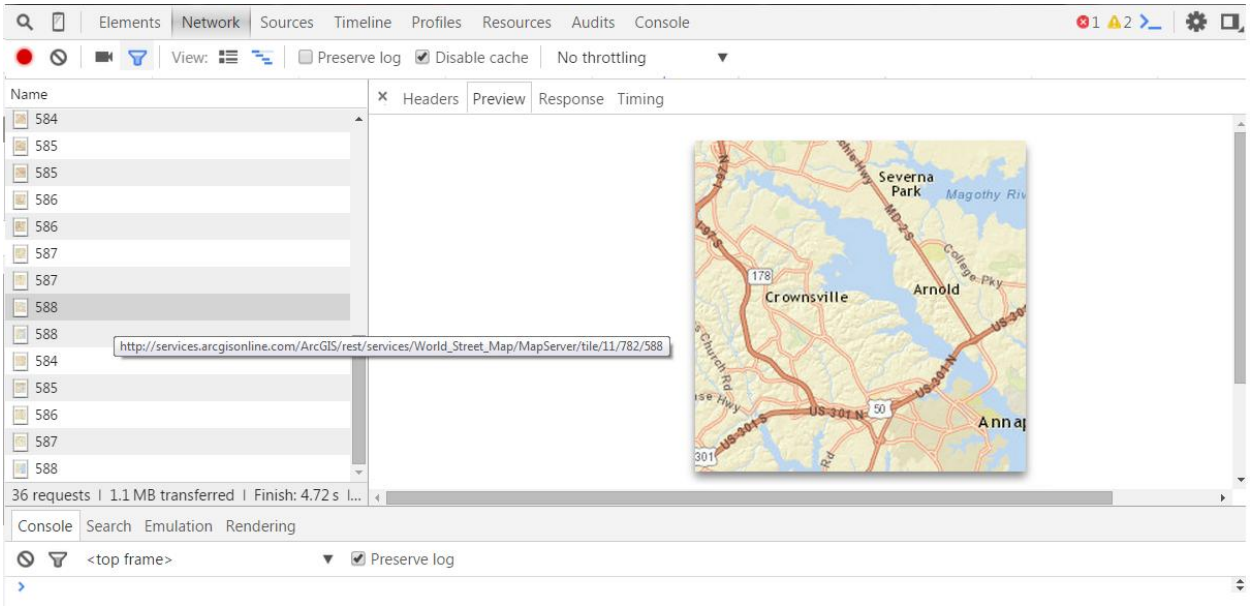

var map;
require([
"esri/map",
"esri/geometry/Extent"
],
function (
Map,
Extent
) {
map = new Map("myMap", {
basemap: "national-geographic"
});
var extent = new Extent({
"type": "extent",
"xmin": -8602280.49098274,
"ymin": 4694656.071669123,
"xmax": -8550074.000664035,
"ymax": 4717587.180154645,
"spatialReference": {
"wkid": 102100,
"latestWkid": 3857
}
});
map.setExtent(extent);
});
Extent Module
Extent object JSON




```
define('DojoGreeting', [],
    function () {
        var _dojoGreeting = 'Hello, from Dojo!';
        return _dojoGreeting;
    });
```

```
require([
    'DojoGreeting', //load the module 'myModule'
    'dojo/dom',
    'dojo/domReady!'
], function (dojoGreeting, dom) {
    dom.byId('greeting').innerHTML = dojoGreeting;
});
```

```
<script>
    require(["dojo/_base/array"],
        function (array, dom, domConst, on, domStyle) {
            var arr = ["Mon", "Tues", "Wednes", "Thurs", "Fri", "Satur", "Sun"];
            var daysOfWeek = array.map(arr, function (item) {
                return item + "day";
            });
            var weekdays = array.filter(daysOfWeek, function (item) {
                return item[0] != "S";
            });
            array.forEach(daysOfWeek, function (day, idx) {
                console.log("Day #" + (idx + 1) + " is " + day);
            })

        });
</script>
```



ArcGIS Services Directory

Home

Folder: /

Current Version: 10.0

View Footprints In: Google Earth

Folders:

- BloomfieldHillsMichigan
- Earthquakes
- Fire
- HomelandSecurity
- Hurricanes
- Hydrography
- Network
- Petroleum
- Portland
- SanFrancisco
- World

Services:

- Geometry (GeometryServer)

Supported Interfaces: REST SOAP Sitemap Geo Sitemap

ArcGIS Services Directory

Home > BloomfieldHillsMichigan > Parcels (MapServer) > Building Footprints

Layer: Building Footprints (ID: 0)

Query Building Footprints:

PARCELID:

Filter Geometry:

Geometry Type: Point

Input Spatial Reference:

Spatial Relationship: Intersects

Relation:

Object Ids:

Where:

Time:

Query (GET) Query (POST)

Result Options:

Return IDs only: True False

Return Geometry: True False

Max Allowable Offset:

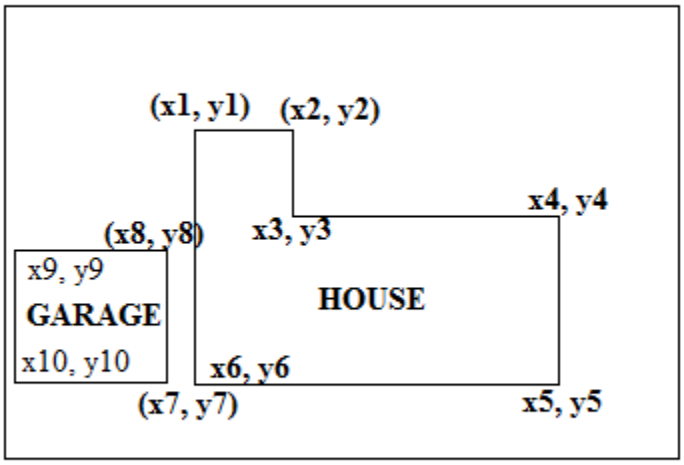
Output Spatial Reference:

Return Fields *(Comma Separated)*:

Format: HTML

```
{
  "displayFieldName": "PARCELID",
  "fieldAliases": { … }, // 1 item
  "geometryType": "esriGeometryPolygon",
  "spatialReference": { … }, // 1 item
  "fields": [ … ], // 1 item
  "features": [
    {
      "attributes": {
        "PARCELID": "1916101009"
      },
      "geometry": {
        "rings": [
          [
            [
              13414403.970144361,
              397379.2099737525
            ],
            [
              13414379.790026248,
              397382.52001312375
            ],
            [
              13414381.669947505,
              397396.27985563874
            ],
```


CONCEPT OF RINGS



TWO DISCONTIGUOUS POLYGONS, BUT CONSIDERED SAME UNIT


```
<!DOCTYPE html>
<html>

<head>
    <title>Hello, Map</title>
    <meta charset="utf-8" />
    <link rel="stylesheet" href="http://js.arcgis.com/3.15/esri/css/esri.css">
    <script src="http://js.arcgis.com/3.15/"></script>
    <script>
        var map;
        require(["esri/map"],
            function (Map) {
                map = new Map("mapDiv", {
                basemap: "national-geographic"
            });
            });
    </script>
</head>

<body>
    <div id="mapDiv" style="width:100%;height:600px;" />
</body>

</html>
```

ArcGIS JavaScript API

Map module

Adds a National Geographic basemap to the map div element

Chapter 2: Layers and Widgets

Identify the data source

ArcGIS Server service, OGC data, CSV, KML, etc.

Identify the API module which supports the data source

ArcGISDynamicMapServiceLayer, FeatureLayer, CSVLayer, KMLLayer, OpenStreetMapLayer

Instantiate the Layer

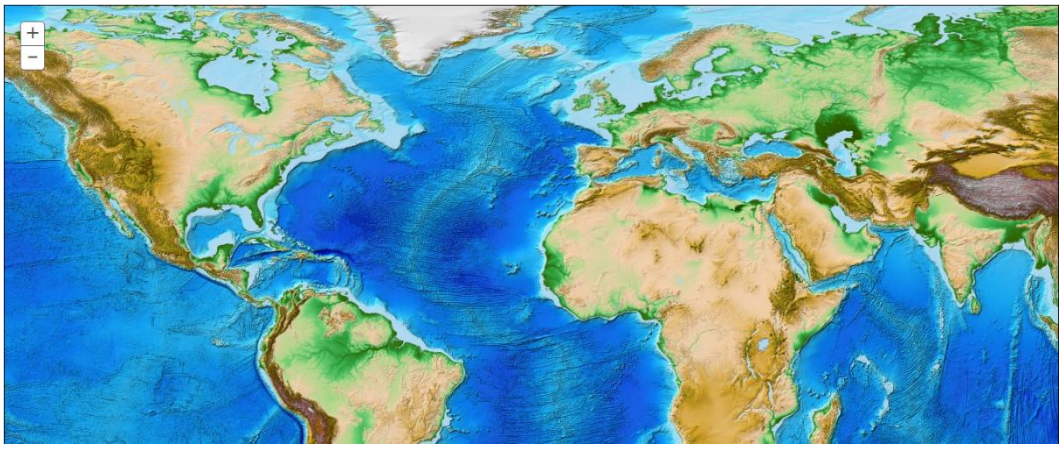
Mostly requires the data source to be available as a REST URL

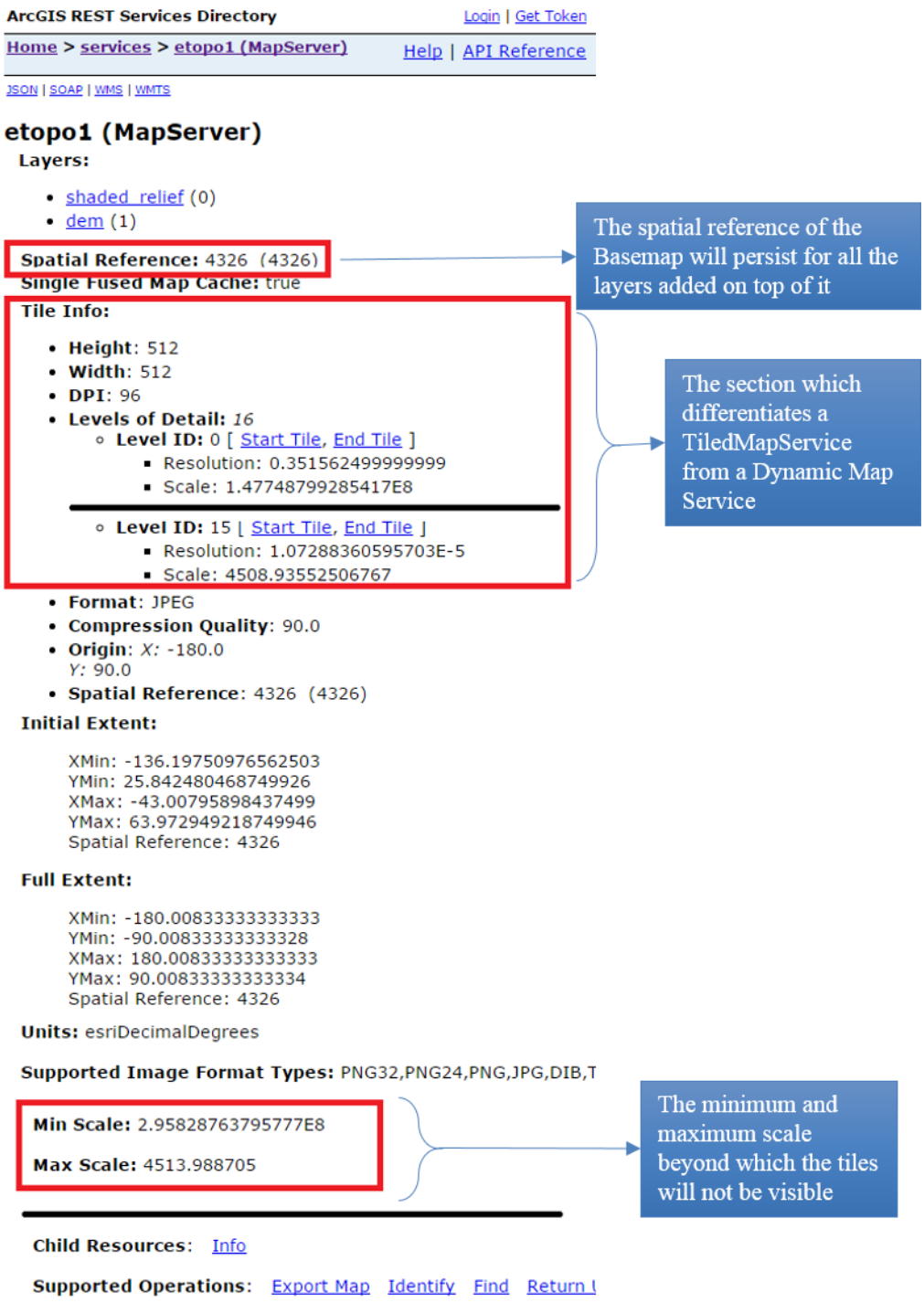
Set Layer properties

Id, visibility, transparency, data filter to be applied, default symbology, rendering,..

Add layers to the Map object

map.addLayers([layer1, layer2,..])




ArcGIS REST Services Directory
Login | Get Token
Home > services > etopo1 (MapServer)
Help | API Reference
JSON | SOAP | WMS | WMTS
etopo1 (MapServer)
Layers:
shaded_relief (0)
dem (1)
Spatial Reference: 4326 (4326)
Single Fused Map Cache: true
Tile Info:
Height: 512
Width: 512
DPI: 96
Levels of Detail: 16
Level ID: 0 [Start Tile, End Tile]
Resolution: 0.351562499999999
Scale: 1.47748799285417E8
Level ID: 15 [Start Tile, End Tile]
Resolution: 1.07288360595703E-5
Scale: 4508.93552506767
Format: JPEG
Compression Quality: 90.0
Origin: X: -180.0
Y: 90.0
Spatial Reference: 4326 (4326)
Initial Extent:
XMin: -136.19750976562503
YMin: 25.842480468749926
XMax: -43.00795898437499
YMax: 63.972949218749946
Spatial Reference: 4326
Full Extent:
XMin: -180.00833333333333
YMin: -90.00833333333328
XMax: 180.00833333333333
YMax: 90.00833333333334
Spatial Reference: 4326
Units: esriDecimalDegrees
Supported Image Format Types: PNG32,PNG24,PNG,JPG,DIB,T
Min Scale: 2.95828763795777E8
Max Scale: 4513.988705
Child Resources: Info
Supported Operations: Export Map Identify Find Return
The spatial reference of the Basemap will persist for all the layers added on top of it
The section which differentiates a TiledMapService from a Dynamic Map Service
The minimum and maximum scale beyond which the tiles will not be visible

Map Name: World Cities Population

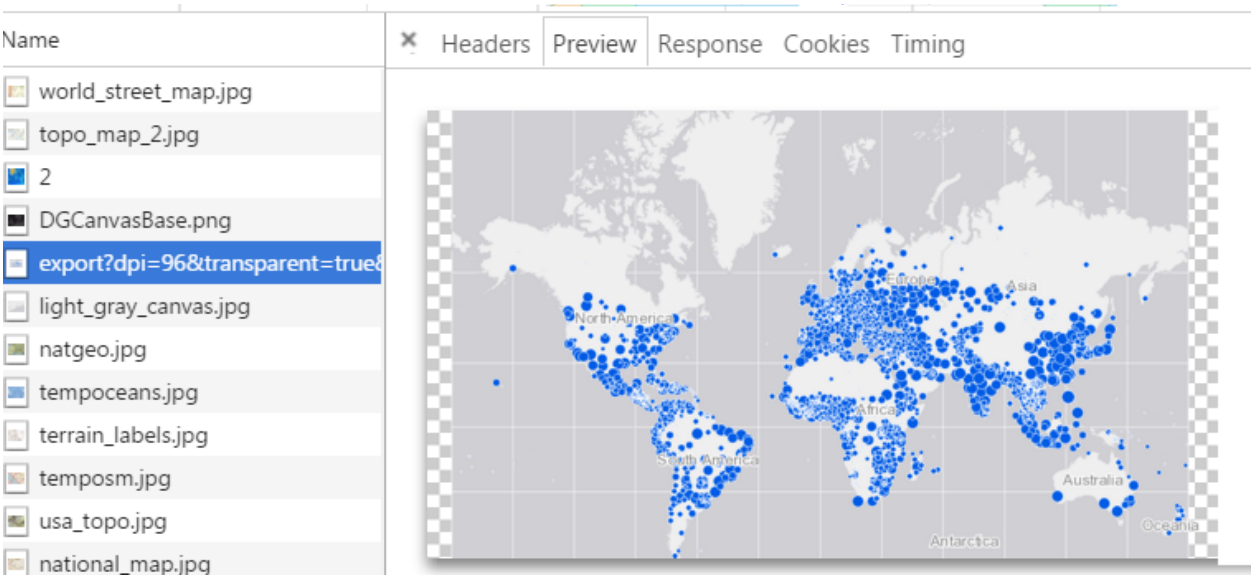
Legend

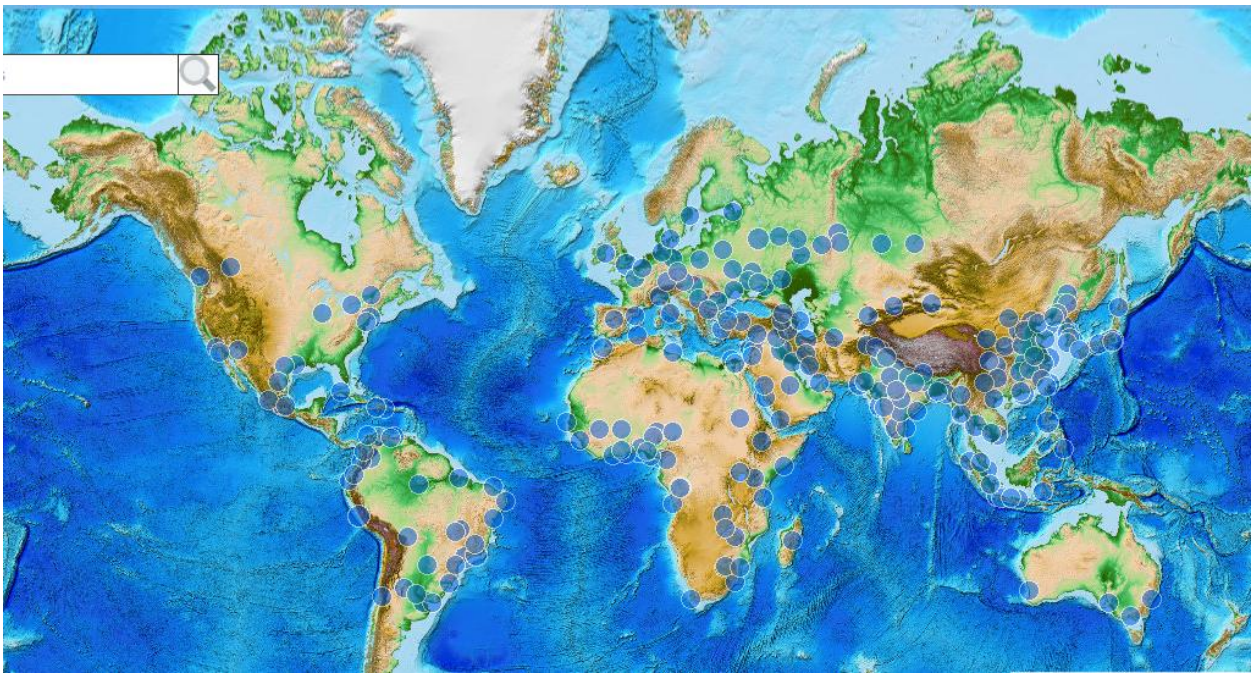
All Layers and Tables

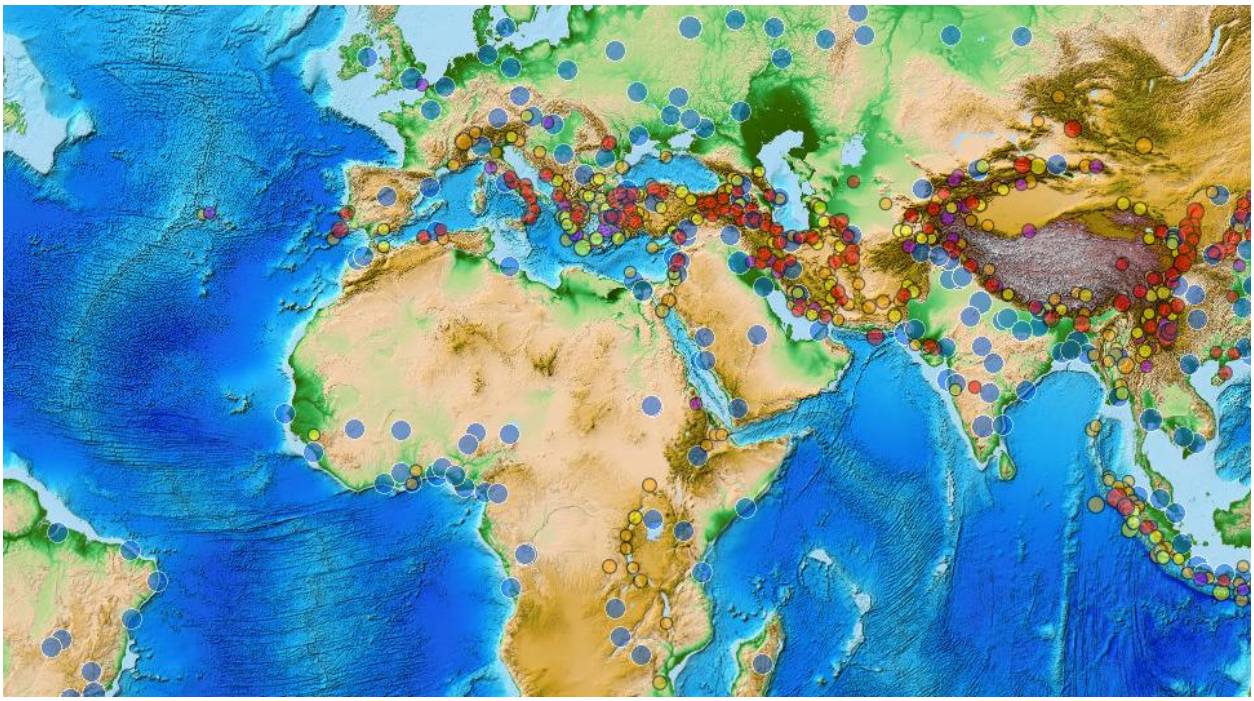
Layers:

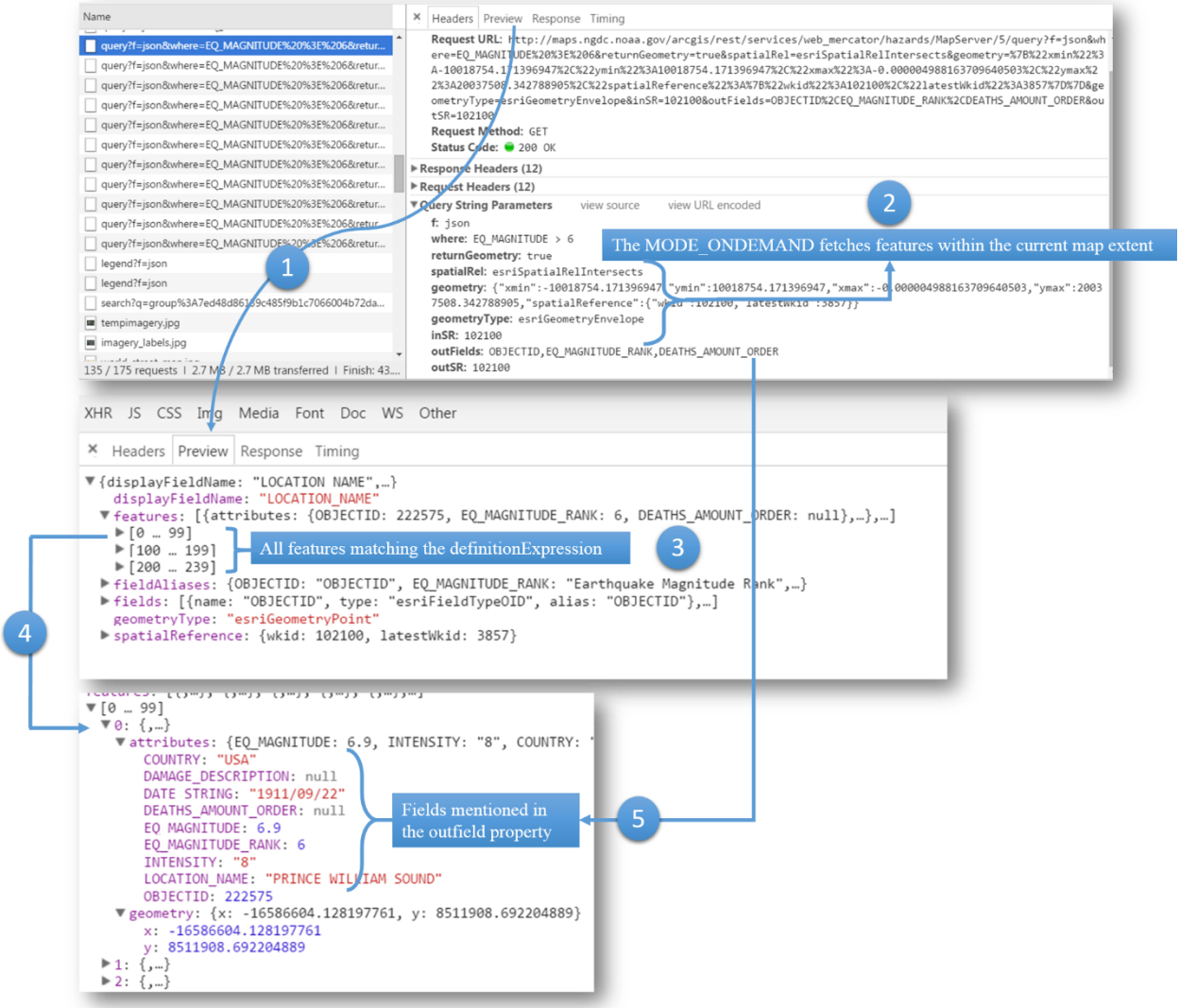
- Cities (0)
- Continent (1)
- World (2)

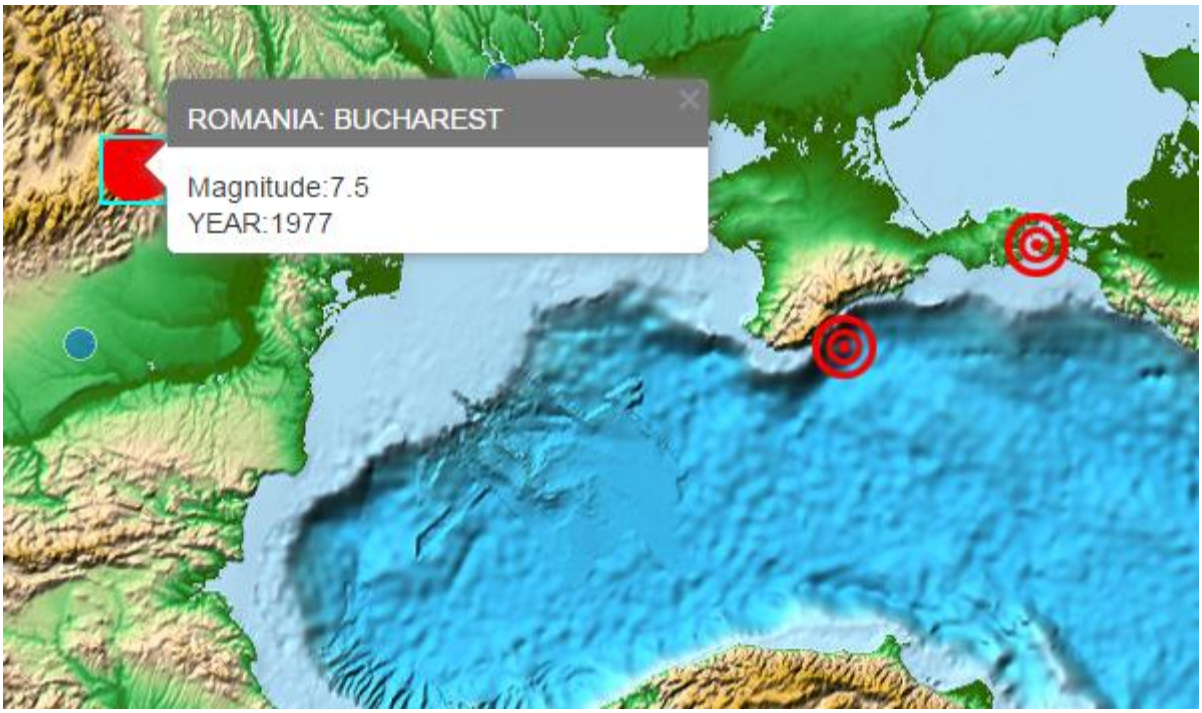
Description:








Name
query?f=json&where=EQ_MAGNITUDE%20%3E%206&retur...
legend?f=json
search?q=group%3A7ed48d86169c485f9b1c7066004b72da...
tempimagery.jpg
imagery_labels.jpg
135 / 175 requests | 2.7 MB / 2.7 MB transferred | Finish: 43....
Headers Preview Response Timing
Request URL: http://maps.ngdc.noaa.gov/arcgis/rest/services/web_mercator/hazards/MapServer/5/query?f=json&where=EQ_MAGNITUDE%20%3E%206&returnGeometry=true&spatialRel=esriSpatialRelIntersects&geometry=%7B%22xmin%22%3A-10018754.171396947%2C%22ymin%22%3A10018754.171396947%2C%22xmax%22%3A-0.000004988163709640503%2C%22ymax%22%3A20037508.342788905%2C%22spatialReference%22%3A%7B%22wkid%22%3A102100%2C%22latestWkid%22%3A3857%7D%7D&geometryType=esriGeometryEnvelope&inSR=102100&outFields=OBJECTID%2CEQ_MAGNITUDE_RANK%2CDEATHS_AMOUNT_ORDER&outSR=102100
Request Method: GET
Status Code: 200 OK
Response Headers (12)
Request Headers (12)
Query String Parameters view source view URL encoded
f: json
where: EQ_MAGNITUDE > 6
returnGeometry: true
spatialRel: esriSpatialRelIntersects
geometry: {"xmin":-10018754.171396947,"ymin":10018754.171396947,"xmax":-0.000004988163709640503,"ymax":20037508.342788905,"spatialReference":{"wkid":102100,"latestWkid":3857}}
geometryType: esriGeometryEnvelope
inSR: 102100
outFields: OBJECTID,EQ_MAGNITUDE_RANK,DEATHS_AMOUNT_ORDER
outSR: 102100
1
2
The MODE_ONDEMAND fetches features within the current map extent
XHR JS CSS Img Media Font Doc WS Other
Headers Preview Response Timing
{displayFieldName: "LOCATION NAME",…}
displayFieldName: "LOCATION_NAME"
features: [{attributes: {OBJECTID: 222575, EQ_MAGNITUDE_RANK: 6, DEATHS_AMOUNT_ORDER: null},…},…]
[0 … 99]
[100 … 199]
[200 … 239]
All features matching the definitionExpression
3
fieldAliases: {OBJECTID: "OBJECTID", EQ_MAGNITUDE_RANK: "Earthquake Magnitude Rank",…}
fields: [{name: "OBJECTID", type: "esriFieldTypeOID", alias: "OBJECTID"},…]
geometryType: "esriGeometryPoint"
spatialReference: {wkid: 102100, latestWkid: 3857}
4
[0 … 99]
0: {,…}
attributes: {EQ_MAGNITUDE: 6.9, INTENSITY: "8", COUNTRY:
COUNTRY: "USA"
DAMAGE_DESCRIPTION: null
DATE STRING: "1911/09/22"
DEATHS_AMOUNT_ORDER: null
EQ_MAGNITUDE: 6.9
EQ_MAGNITUDE_RANK: 6
INTENSITY: "8"
LOCATION_NAME: "PRINCE WILLIAM SOUND"
OBJECTID: 222575
geometry: {x: -16586604.128197761, y: 8511908.692204889}
x: -16586604.128197761
y: 8511908.692204889
1: {,…}
2: {,…}
Fields mentioned in the outfield property
5




```
1     var tbDrawSymbol =
2         new SimpleFillSymbol(
3             SimpleFillSymbol.STYLE_SOLID,
4             new SimpleLineSymbol(
5                 SimpleLineSymbol.STYLE_DASHDOT,
6                 new Color([255, 255, 0]),
7                 2
8             ),
9             new Color([255,  0,0, 0.2])
10        );
```

Symbol type used to style a polygon geometry

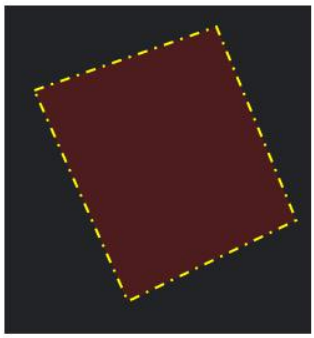
The Fill type constant

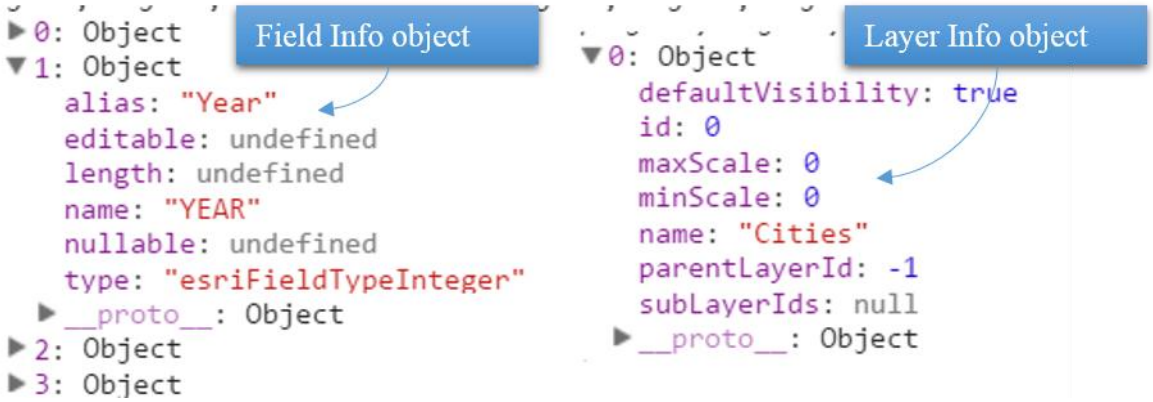
Symbol type for the outline of the polygon

The Line type constant for the outline

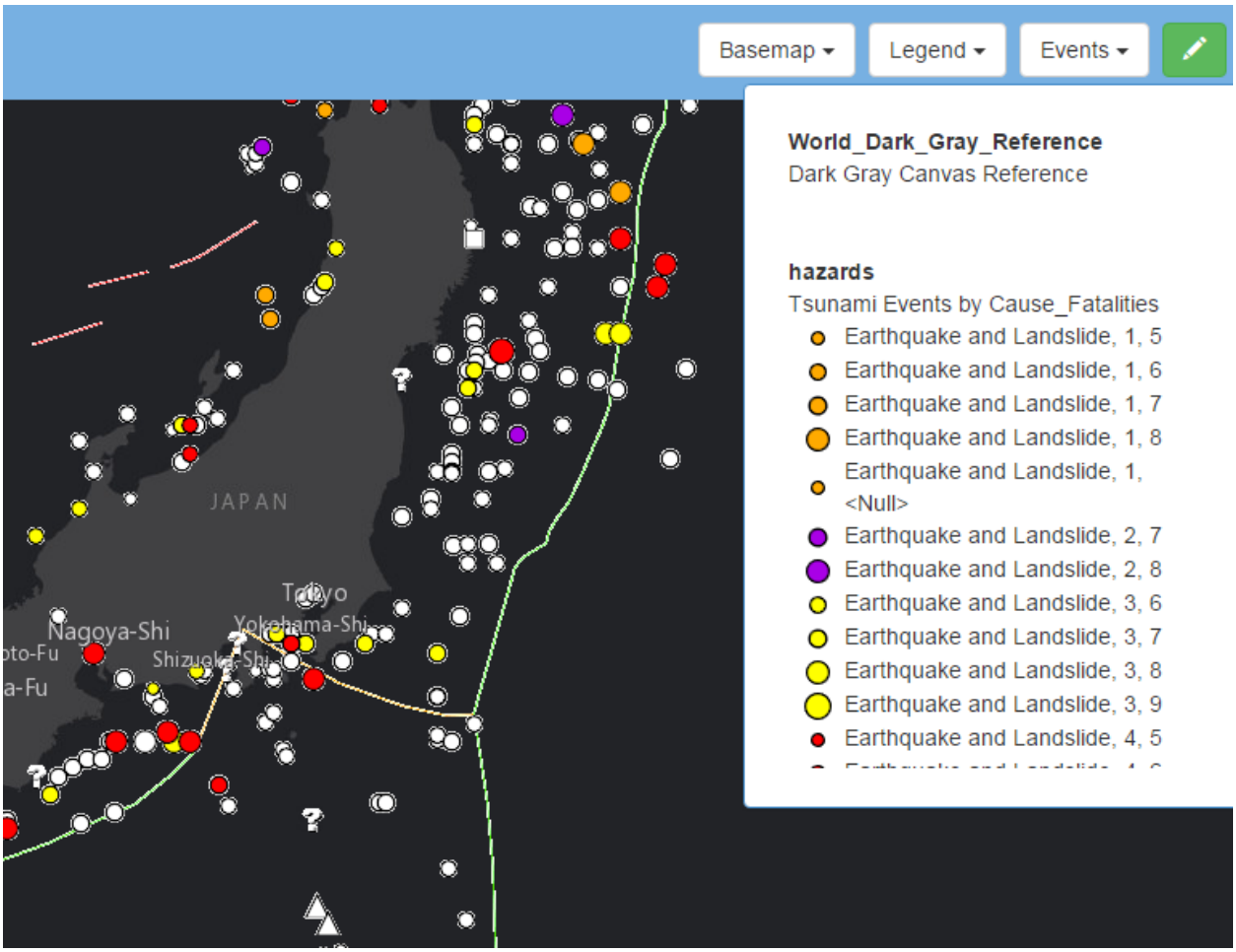
Color (yellow) and width of the outline

Red Color fill for the polygon along with transparency

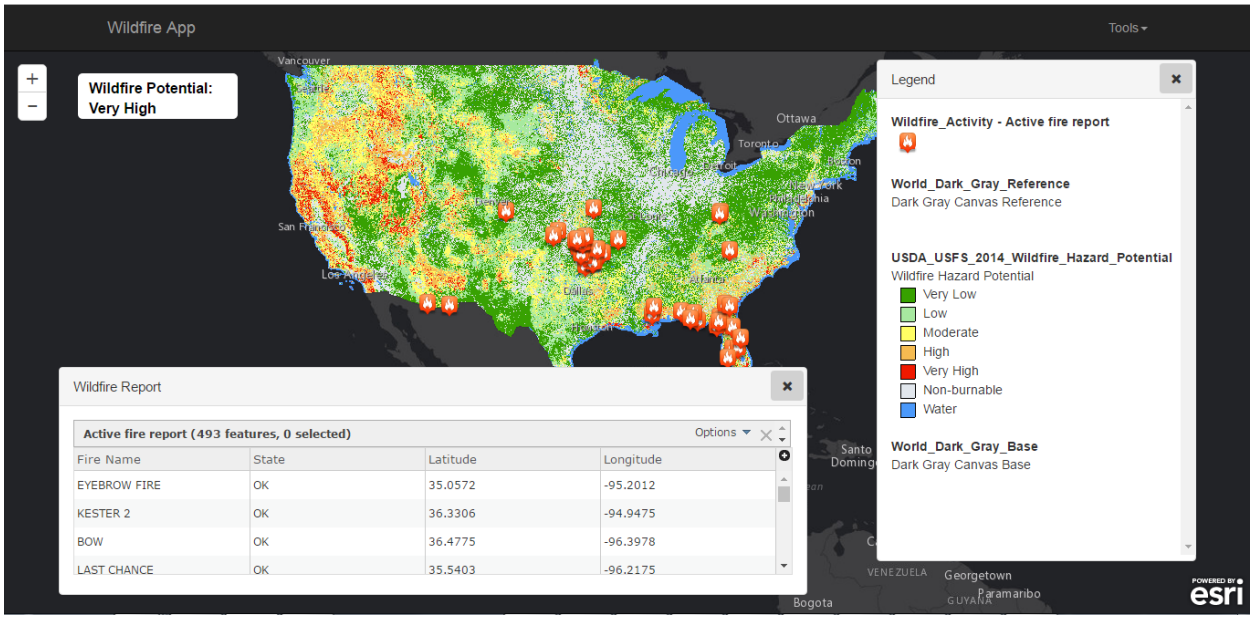


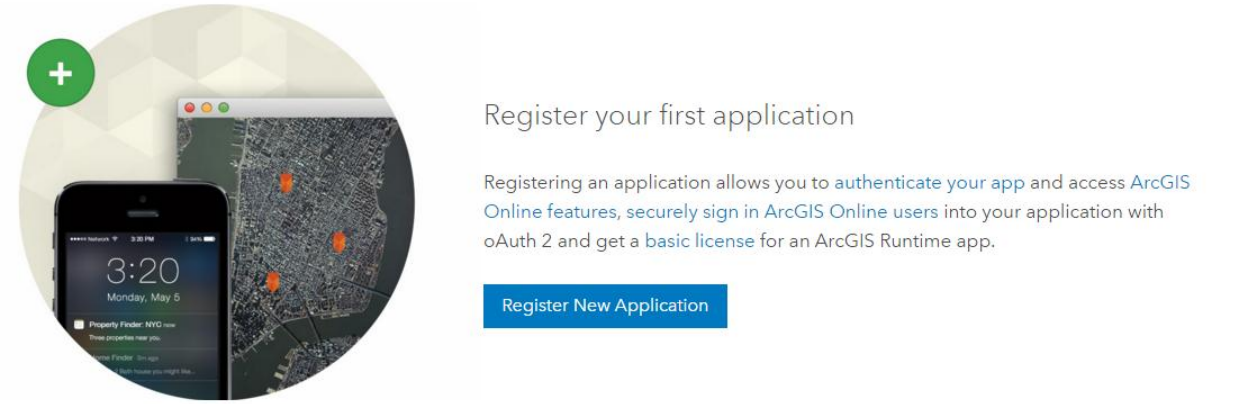


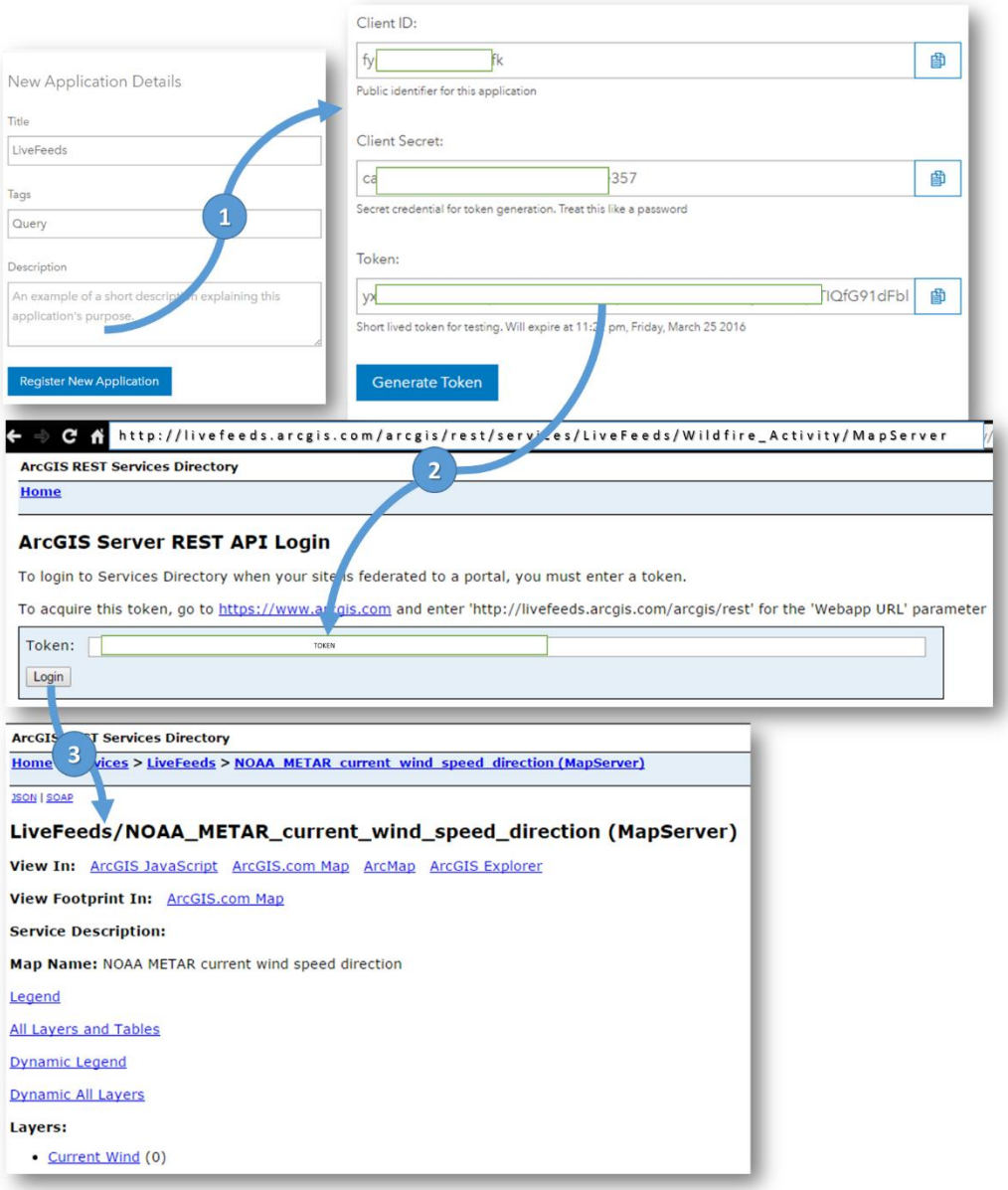

```
require(["dojo/on"], function(on){
  on(target, "event", function(e){
    // handle the event
  });
});
```



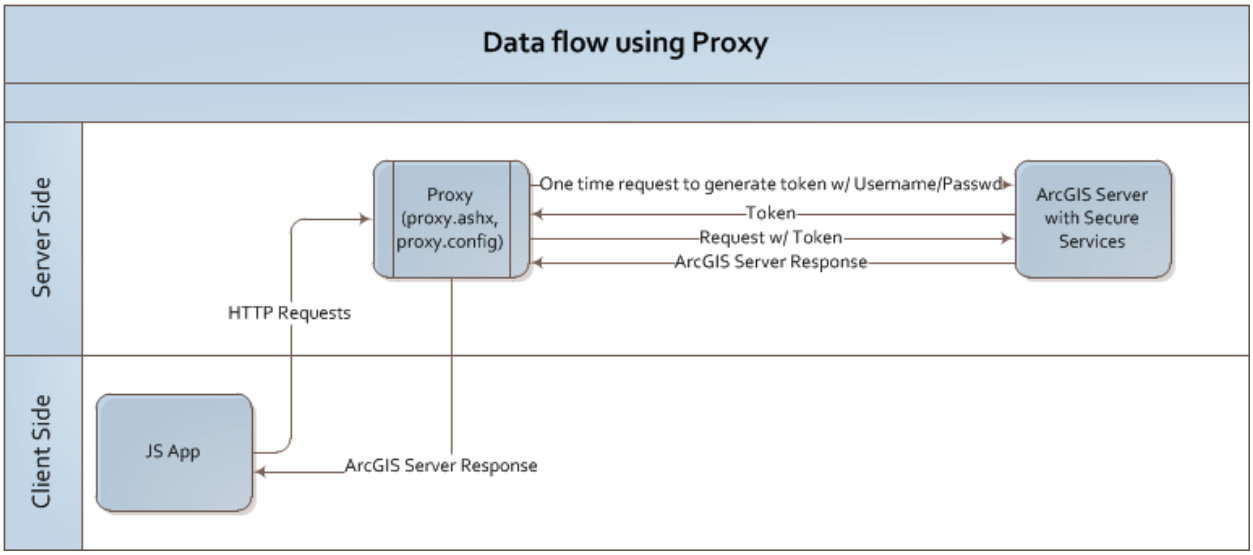
Chapter 3: Writing Queries






New Application Details
Title
LiveFeeds
Tags
Query
Description
An example of a short description explaining this application's purpose.
Register New Application
1
Client ID:
Public identifier for this application
Client Secret:
Secret credential for token generation. Treat this like a password
Token:
Short lived token for testing. Will expire at 11:2 pm, Friday, March 25 2016
Generate Token
http://livefeeds.arcgis.com/arcgis/rest/services/LiveFeeds/Wildfire_Activity/MapServer
2
ArcGIS REST Services Directory
Home
ArcGIS Server REST API Login
To login to Services Directory when your site is federated to a portal, you must enter a token.
To acquire this token, go to https://www.arcgis.com and enter 'http://livefeeds.arcgis.com/arcgis/rest' for the 'Webapp URL' parameter
Token:
TOKEN
Login
3
Home > LiveFeeds > NOAA_METAR_current_wind_speed_direction (MapServer)
JSON | SOAP
LiveFeeds/NOAA_METAR_current_wind_speed_direction (MapServer)
View In: ArcGIS JavaScript ArcGIS.com Map ArcMap ArcGIS Explorer
View Footprint In: ArcGIS.com Map
Service Description:
Map Name: NOAA METAR current wind speed direction
Legend
All Layers and Tables
Dynamic Legend
Dynamic All Layers
Layers:
Current Wind (0)

```xml
<?xml version="1.0" encoding="utf-8" ?>
    <ProxyConfig allowedReferers="*" logFile="proxy_log_xml.log" mustMatch="false">
        <serverUrls>
            <serverUrl url="http://services.arcgisonline.com" matchAll="true" />
            <serverUrl url="http://server.arcgisonline.com/ArcGIS/rest/services"
            matchAll="true" />
            <serverUrl
                url="http://livefeeds.arcgis.com/arcgis/rest/services"
                tokenServiceUri="https://www.arcgis.com/sharing/generateToken"
                username="<username>"
                password="<password>"
                matchAll="true"
             />
        </serverUrls>
    </ProxyConfig>
```

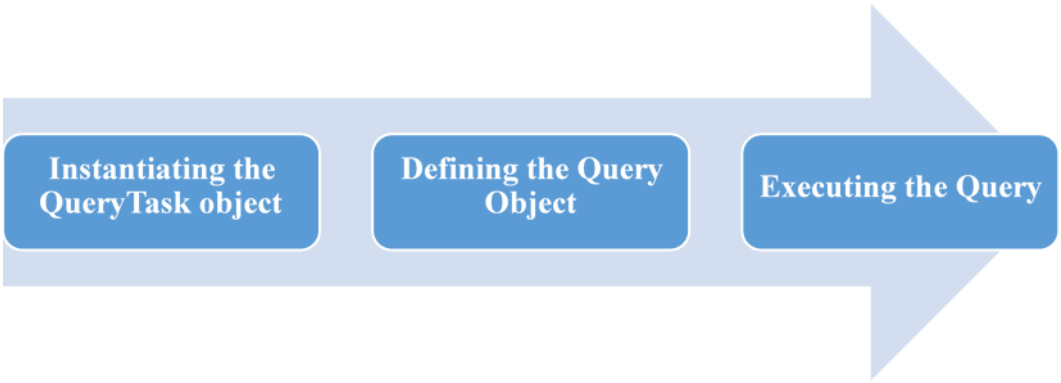


```
require([
    "js/lib/bootstrapmap",
    "esri/config",
    "dojo/domReady!"],
    function (
        BootstrapMap,
        esriConfig) {
        var map = BootstrapMap.create("mapDiv", {
            basemap: "dark-gray",
            showAttribution: false,
            wrapAround180: true
        });
    });
```

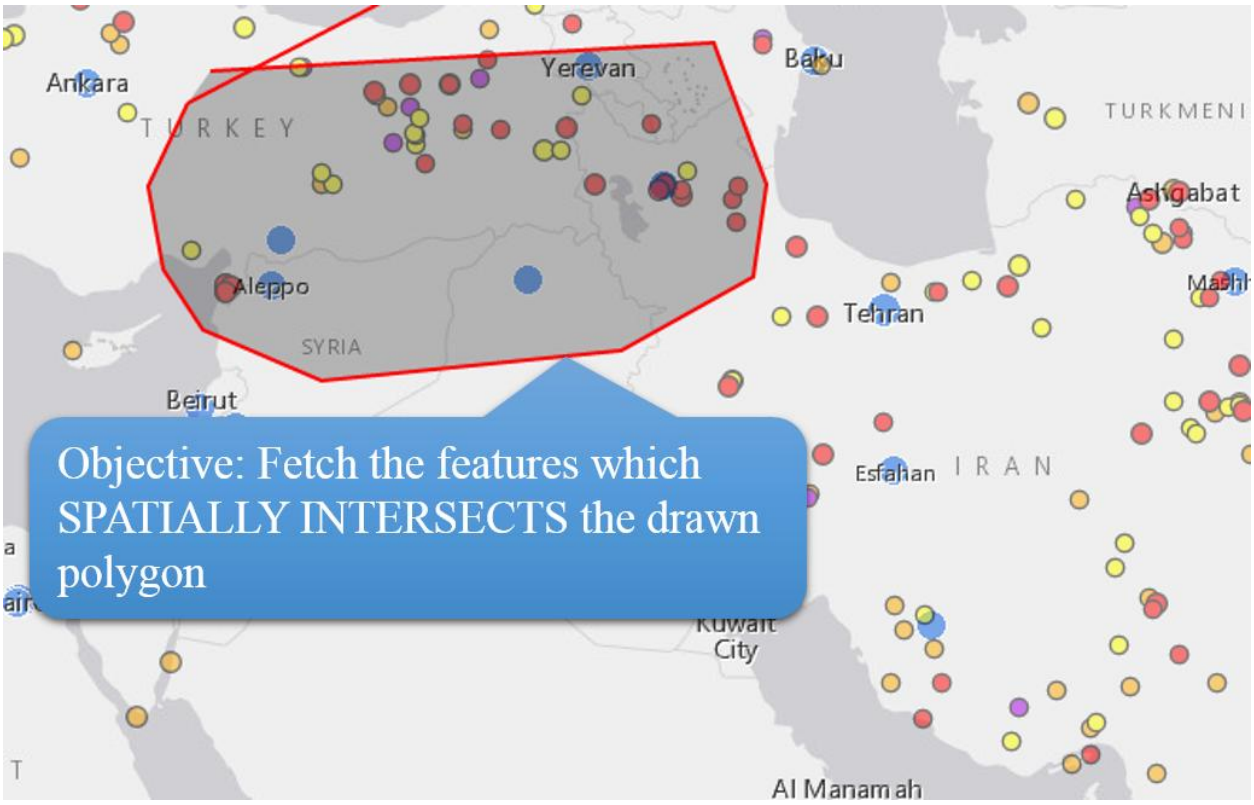
	Find	Query	Identity
Attribute Based Search	TRUE	TRUE	FALSE
Location Based Search	FALSE	TRUE	TRUE
Supports Multiple Layers in a Service	TRUE	FALSE	TRUE
Supports Pagging	FALSE	TRUE	FALSE

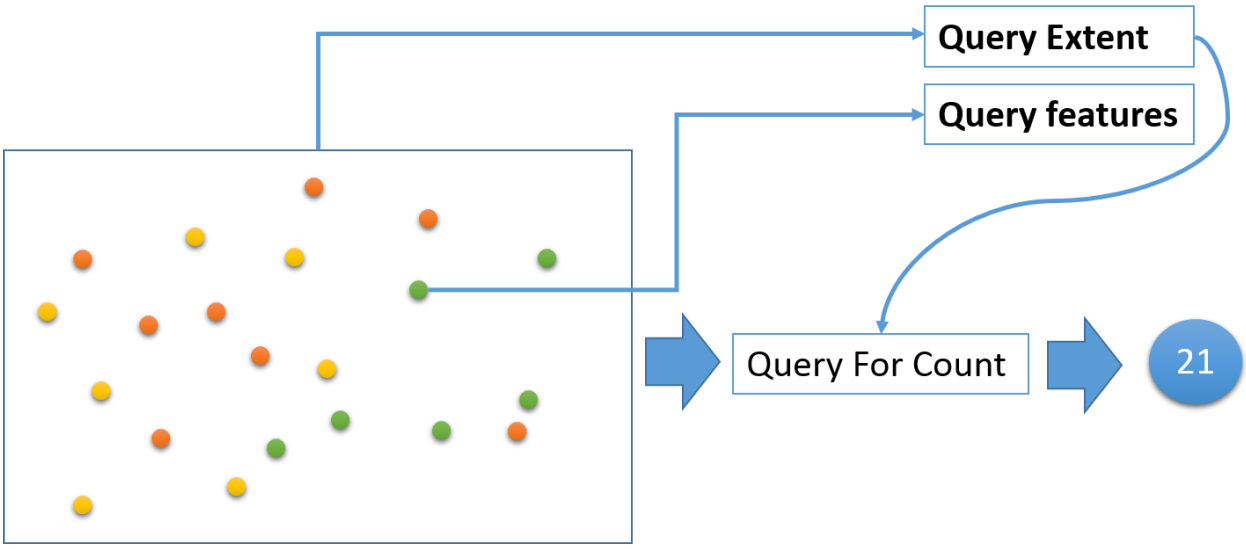
- HOUSES_DAM_TOT_DESCRIPTION *(type: esriFieldTypeString , alias: Houses Da*
- OBJECTID *(type: esriFieldTypeOID , alias: OBJECTID)*
- SHAPE *(type: esriFieldTypeGeometry , alias: SHAPE)*
- URL *(type: esriFieldTypeString , alias: URL , length: 129)*

Supported Operations: Query Generate Renderer Return Updates

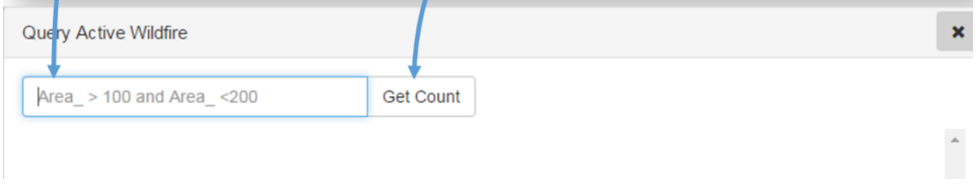


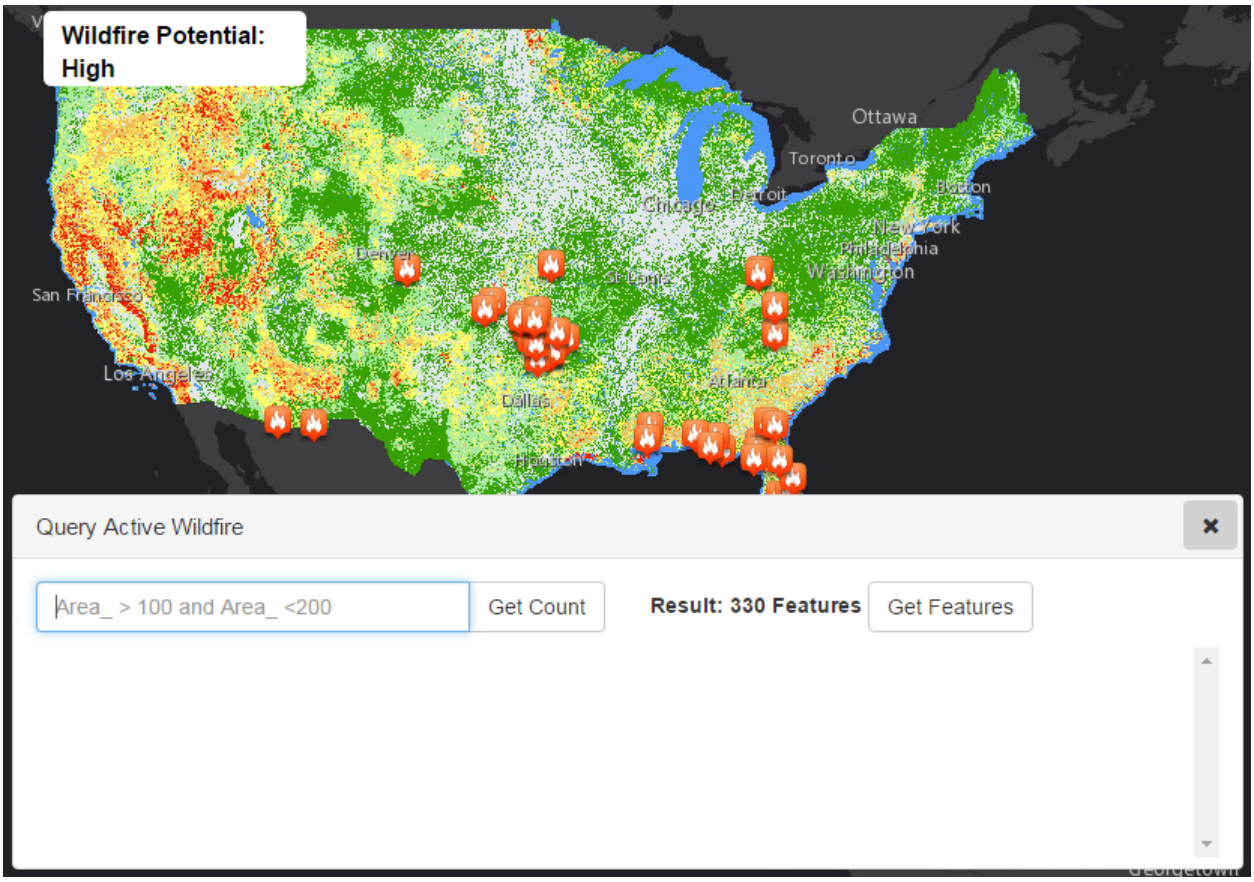

```
var query = new Query();
query.outFields = ["FIRE_NAME", "STATE", "LATITUDE",
"LONGITUDE"];
query.returnGeometry = false;
query.where = "1=1";
```

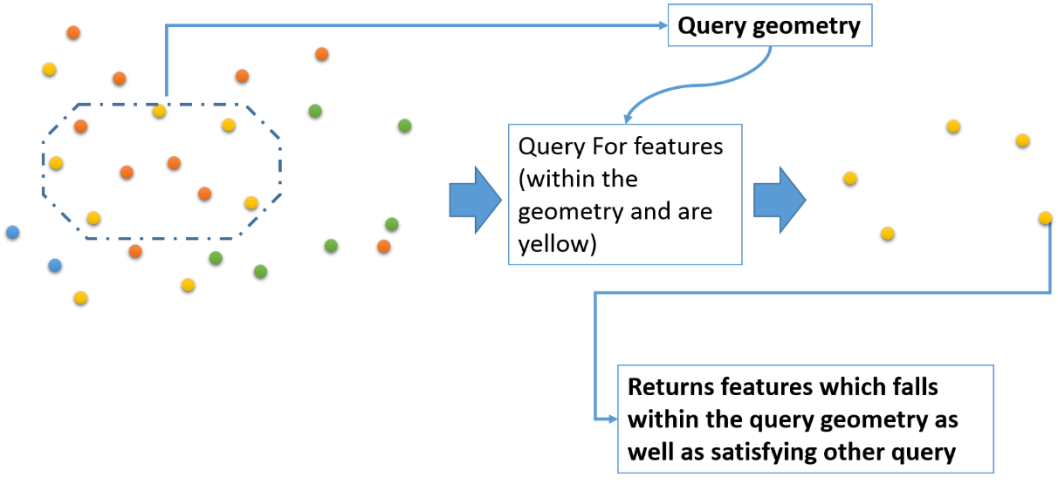





```
<div class="panel panel-default panelCon"
style="display:block;opacity:0;left:60px;bottom:0px;width:820px;height:250px;">
    <div class="panel-heading">
        <span class="panel-titletext">Query Active Wildfire</span>
        <span class="pull-right clickable" data-effect="slideUp"><i class="fa fa-
        times"></i></span>
    </div>
    <div class="panel-body" style="height:200px;">
        <div class="row">
            <div class="col-md-6">
                <div class="input-group">
                    <input type="text" id="queryTxt" class="form-control"
                    placeholder="Area_ > 100 and Area_ <200">
                    <span class="input-group-btn">
                        <button class="btn btn-default" id="queryBtn" type="button">Get
                        Count</button>
                    </span>
                </div>
            </div>
            <div class="col-md-6">
                <div id="FeatCountDiv" style="display:none;">
                    <label id="featCountLbl"></label>
                </div>
            </div>
        </div>
    </div>
</div>
```

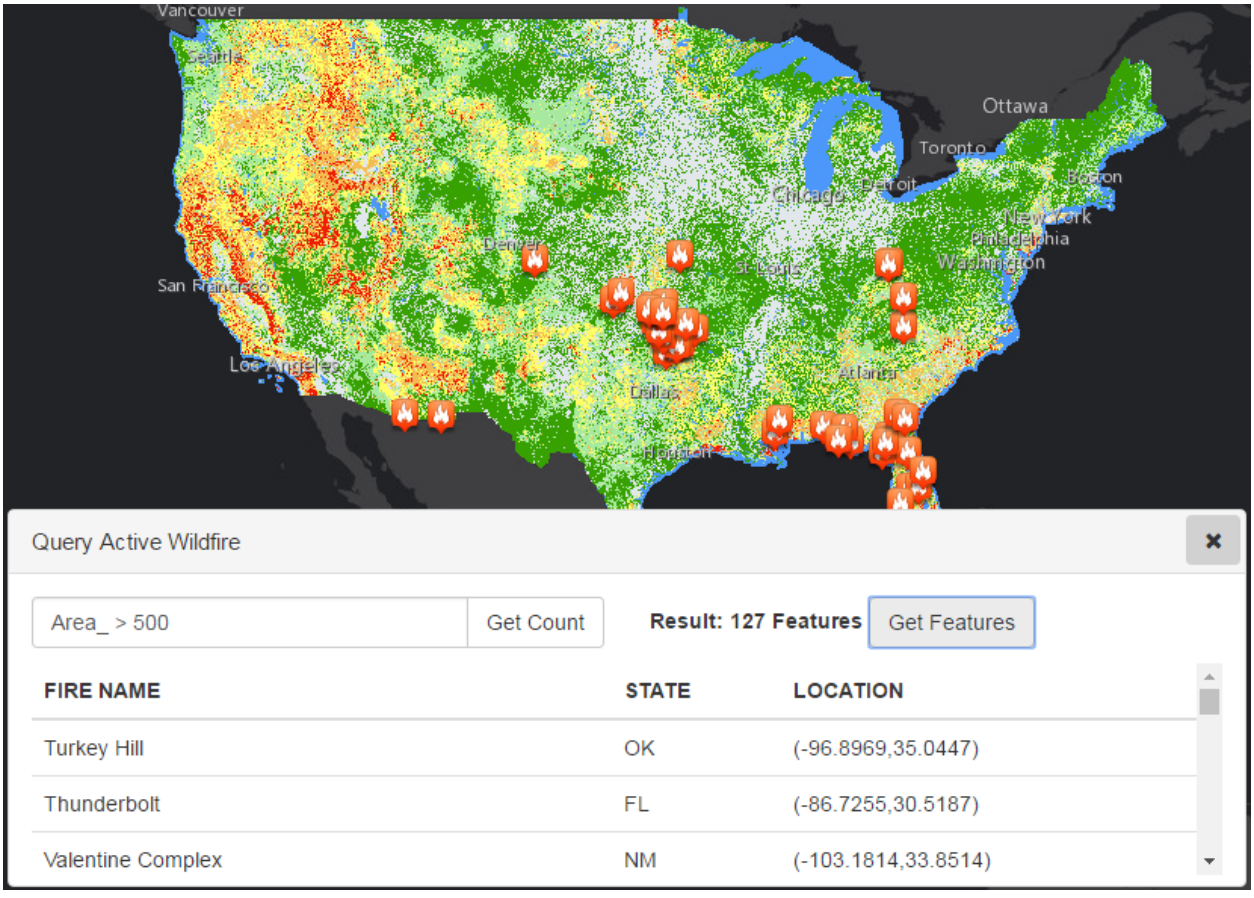


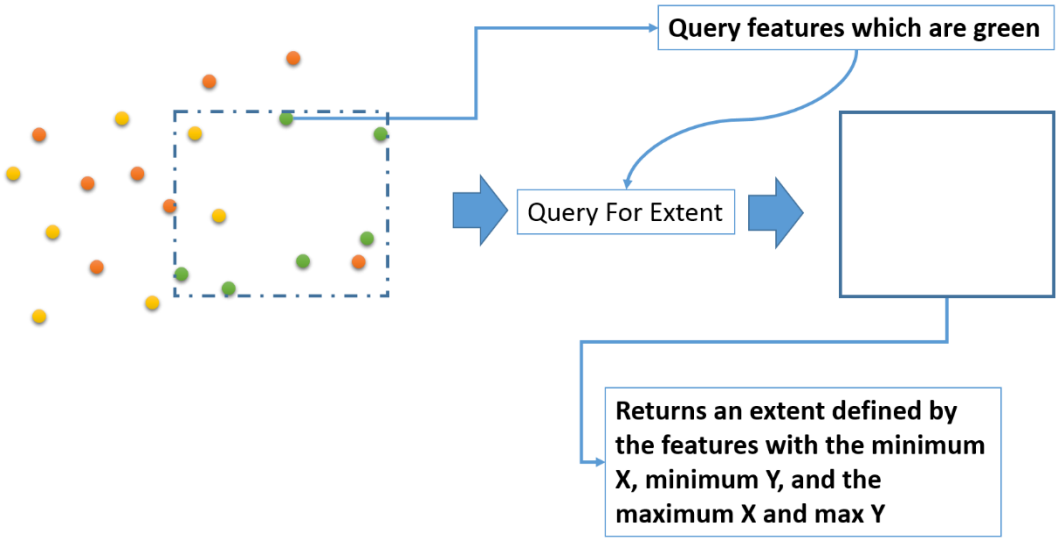

Wildfire Potential:
High
Ottawa
Toronto
Chicago
Detroit
Boston
New York
Philadelphia
Washington
Denver
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Query Active Wildfire
Area_ > 100 and Area_ <200
Get Count
Result: 330 Features
Get Features


Query geometry
Query For features (within the geometry and are yellow)
Returns features which falls within the query geometry as well as satisfying other query

```
on(dom.byId("execQueryBtn"), "click", function () {
    var queryDeferred = queryTask.execute(query);
    queryDeferred.then(function (result) {
      var tblString = '<table class="table table-striped table-hover">';
      tblString += '<thead><tr><th>FIRE NAME</th>';
      tblString += '<th>STATE</th>';
      tblString += '<th>LOCATION</th>';
      array.forEach(result.features, function (feature) {
          tblString += '<tr><td>' + feature.attributes.FIRE_NAME + '</td>';
          tblString += '<td>' + feature.attributes.STATE + '</td>';
          tblString += '<td> (' + feature.attributes.LONGITUDE + ',' +
          feature.attributes.LATITUDE + ')</td> </tr>';
      });
      tblString += '</tbody> </table > ';
      dom.byId("QueryTbl").innerHTML = tblString;
    }, function (err) {
      dom.byId("QueryTbl").innerHTML = err;
    });
});
```

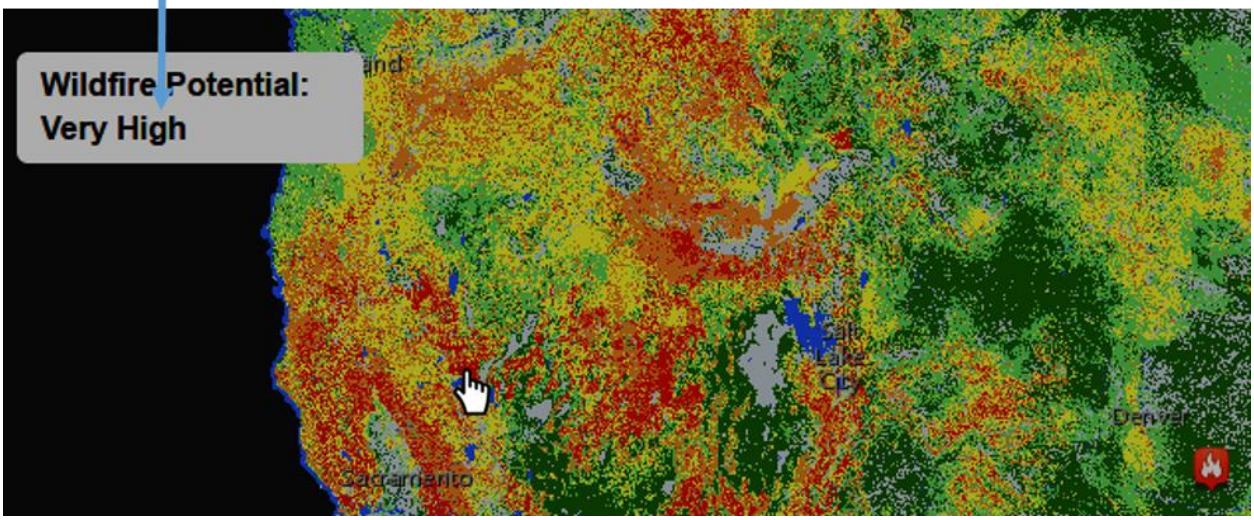
Constructing the HTML Table by iterating through each feature in the result featureset





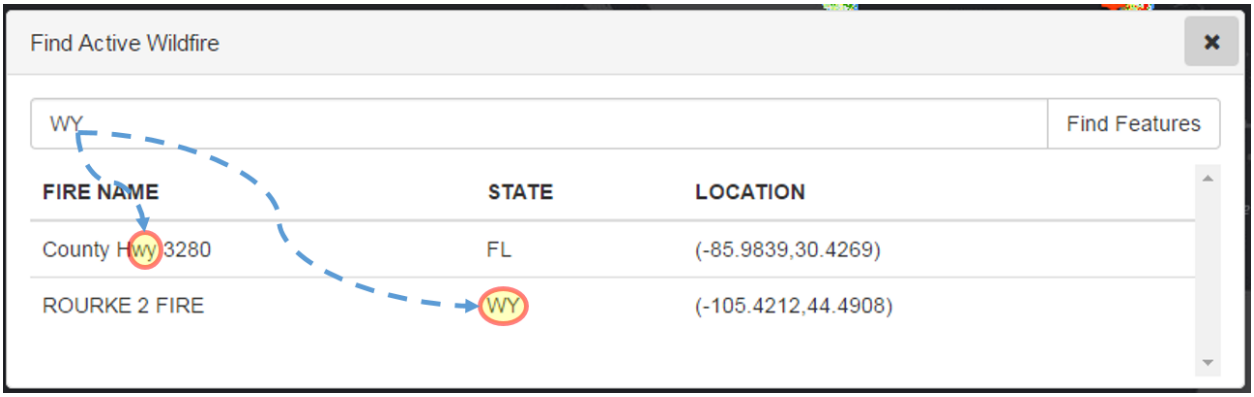

```
identifyHandle = map.on("click", function (evt) {
    var identifyParams = new IdentifyParameters();
    identifyParams.geometry = evt.mapPoint;
    identifyParams.tolerance = 1;
    identifyParams.mapExtent = map.extent;
});
```

```
var identifyDeferred = identifyTask.execute(identifyParams);
identifyDeferred.then(function (result) {
    dom.byId("idResults").innerHTML = result.length ?
    (result[0].feature.attributes.CLASS_DESC ? 'Wildfire
    Potential: <br/>' +
    result[0].feature.attributes.CLASS_DESC.split(':')[1] : '') :
    '';
}, function (err) {
    console.log(err);
});
```

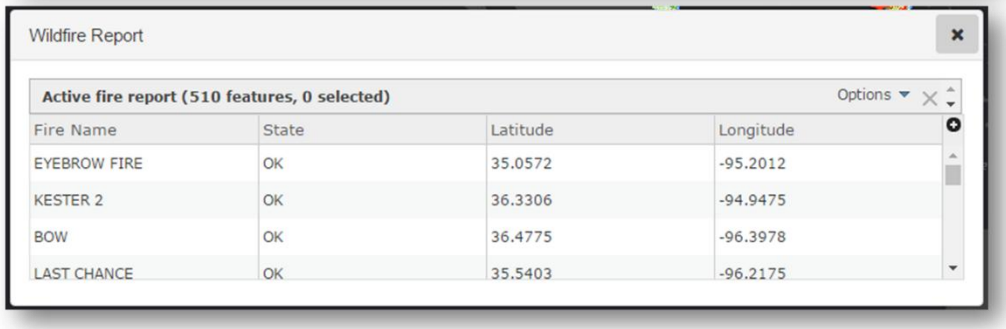


```
<div class="panel panel-default panelCon">
    <div class="panel-heading">
        <span class="panel-titletext">Find Active Wildfire</span>
        <span class="pull-right clickable" data-effect="slideUp"><i class="fa fa-
        times"></i></span>
    </div>
    <div class="panel-body" style="height:200px;">
        <div class="input-group">
            <input type="text" id="findTxt" class="form-control" placeholder="WY" />
            <span class="input-group-btn">
                <button class="btn btn-default" id="findBtn" type="button">Find
                Features</button>
            </span>

        </div>
        <!-- /input-group -->
        <div id="FindTbl" style="margin-top:10px;height:140px;overflow-y:scroll;">
        </div>
    </div>
</div>
```

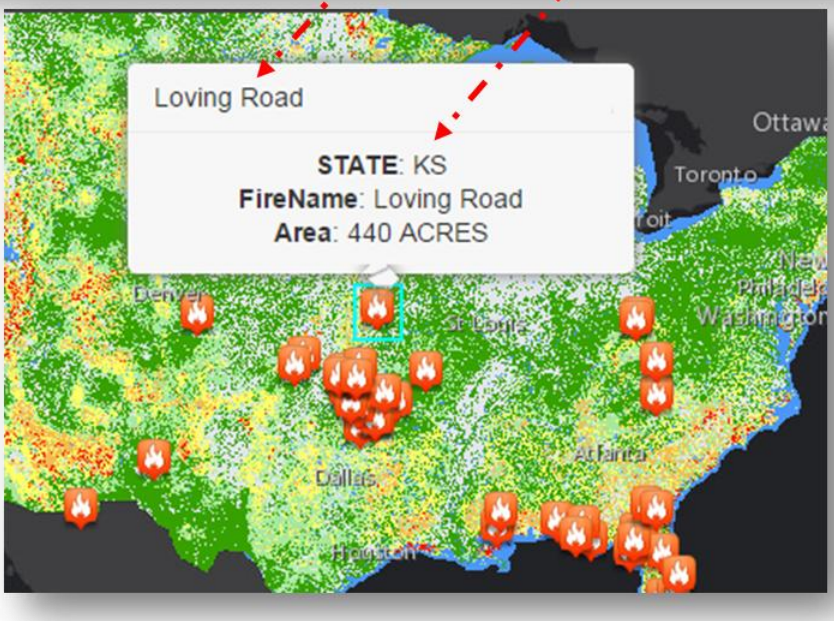
```
on(dom.byId("findBtn"), "click", function () {
    findParams.layerIds = [0];
    findParams.searchFields = ["STATE", "Fire Name"];
    findParams.searchText = dom.byId("findTxt").value;
});
```



```
var featureTable = new FeatureTable({
    featureLayer: wildFireActivityLyr,
    map: map,
    gridOptions: {
        allowSelectAll: true,
        allowTextSelection: true
    },
    zoomToSelection: true,
    outFields: ["FIRE_NAME", "STATE", "LATITUDE", "LONGITUDE"]
}, 'featTbl');

featureTable.startup();
```



```
var content = "<b>STATE</b>: ${STATE}" +
    "<br><b>FireName</b>: ${FIRE_NAME}" +
    "<br><b>Area</b>: ${AREA_} ${AREA_MEAS}";
var infoTemplate = new InfoTemplate("${FIRE_NAME}", content);

var wildFireActivityLyr = new FeatureLayer(wildFireActivityURL, {
    mode: FeatureLayer.MODE_ONSELECTION,
    infoTemplate: infoTemplate,
    outFields: ["*"]
});
```



Chapter 4: Building Custom Widgets

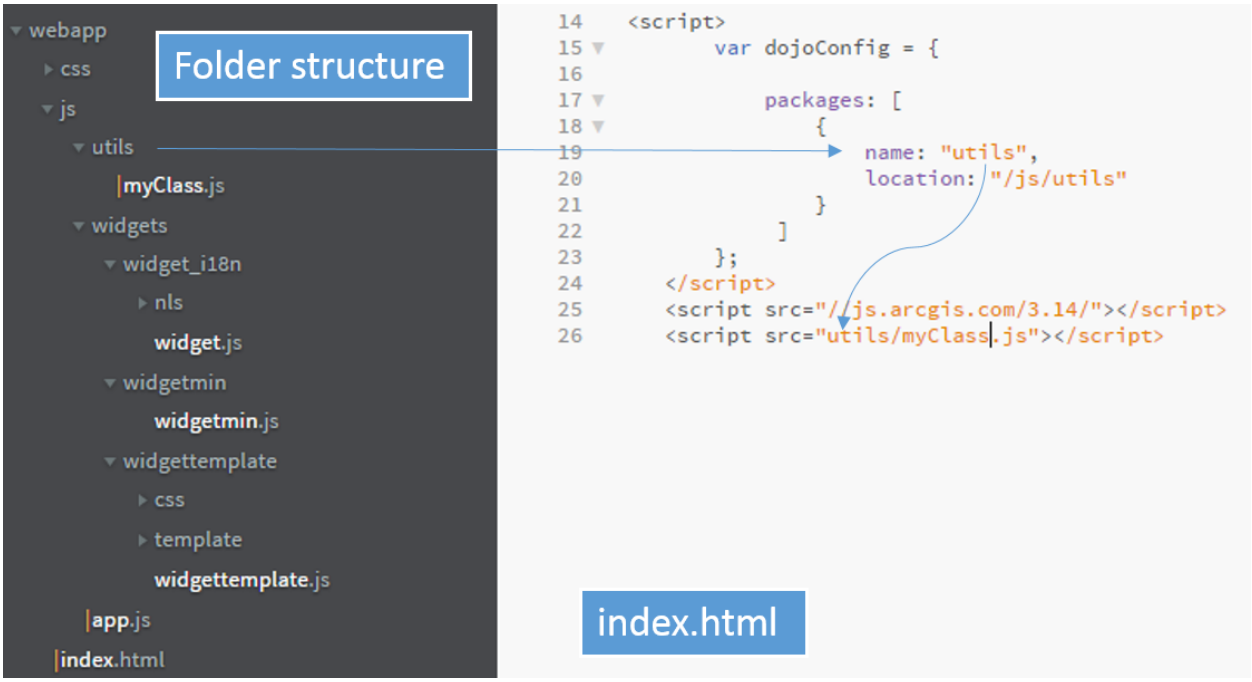
```
define([
    //class
    "dojo/_base/declare"
], function (declare      ) {
    return declare(null, {
        prop1: 1,
        prop2: "sample",
        constructor: function(name){
            console.log(name);
        },
        myMethod: function () {
            return 1;
        }
    });
});
```

Module required to define class

Module shall return the class declaration

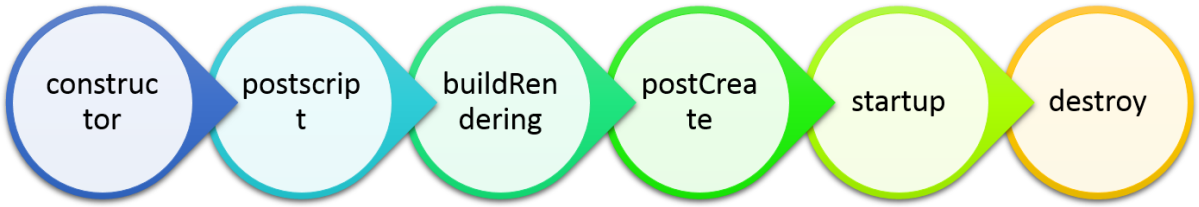
Class is a super class, it doesn't inherit from any other

Class properties, methods and constructor



Name	Method	Status	Type	Initiator
3.14/	GET	302		(index):39
app.js	GET	200	script	(index):40
style.css	GET	200	stylesheet	(index):38
init.js	GET	200	script	http://js.arcgis.com/3.14/
jsapi_en-us.js?1445808976371	GET	200	script	init.js:30
myClass.js?1445808976371	GET	200	script	init.js:30
svg.js?1445808976371	GET	200	script	init.js:30
blank.gif?1445808976371	GET	200	gif	init.js:757
content.min.css	GET	200	xhr	content.min.js:1

Each URL appended with time string



```
define([
    //Modules for Class declaration
    "dojo/_base/declare",
    "dojo/_base/lang",

    //widget class
    "dijit/_WidgetBase",

    //Module for loading templated widget
    "dijit/_TemplatedMixin",

    //Plugin to load HTML Template file
    "dojo/text!app_widgets/widgettemplate/template/_widget.html",

    "dojo/domReady!"
], function (
    declare,
    lang,
    _WidgetBase,
    _TemplatedMixin,
    dijitTemplate
) {
    return declare([_WidgetBase, _TemplatedMixin], {
        //assigning html template to template string
        templateString: dijitTemplate,
        constructor: function (options, srcRefNode) {
            this.domNode = srcRefNode;
        },
        postCreate: function () {
            this.inherited(arguments);
        },
        startup: function () {

        },
        destroy: function () {

        }
    });
});
```

HTML template is assigned to the templateString property

Dom node where the widget is placed

```
require([
    "app_widgets/widgettemplate/widgettemplate",
    "dojo/domReady!"
        ],
    function (widgettemplate) {
        var templateWidget = new widgettemplate({}, /* Pass an empty object */
            'templatedWidgetDiv' /*Reference to the dom element where the widget shall be placed */
        );
        templateWidget.startup();
    });
```

Create a single point of entry for the calling all the widgets

- Corollary: Do not instantiate all the widgets in the index page

Define dojoConfig object in the index page

- This should be done before calling the API

‘Modularize’ your code by defining modules

- Even a Configuration file can be created off a dojo module

Provide support for internationalization

- A separate folder shall be created for each language we support

Folder structure

- Create a separate sub folder to contain all HTML templates
- Place module specific CSS in a subfolder where the module resides
- Images and site common CSS should reside outside the modules

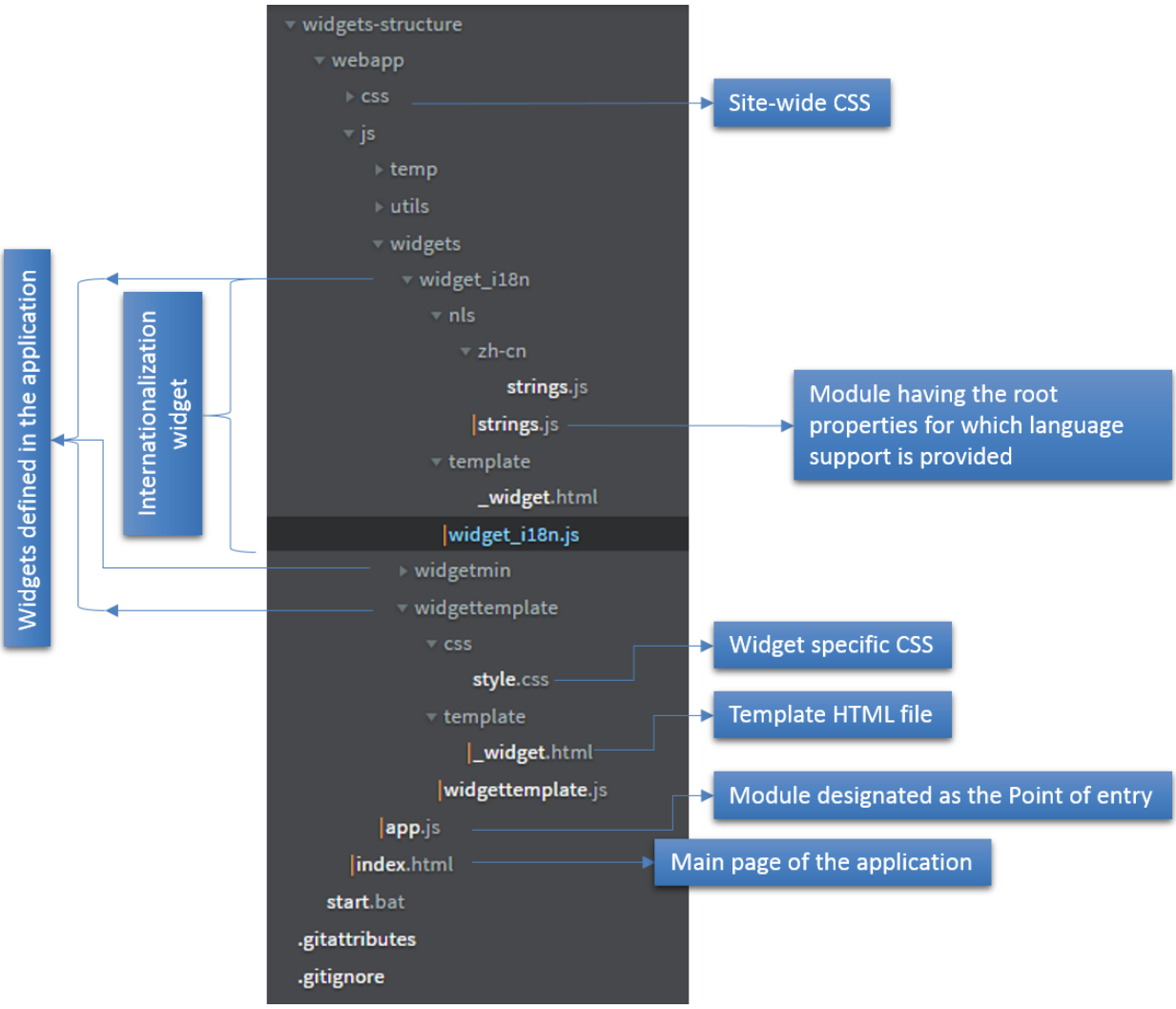
```
require(["dojo/dom",
        "app_widgets/widgettemplate/widgettemplate",
        "utils/myClass",
        "app_widgets/widget_i18n/widget_i18n",
         "dojo/domReady!"], function (dom, WidgetTemplate, MyClass, Widget_i18n) {
    var msgDiv = dom.byId("msgDiv");
    /* Instantiate MyClass module */
    var myClass = new MyClass('const param');
    msgDiv.innerHTML += '<br>Property 1: ' + myClass.prop1;
    msgDiv.innerHTML += '<br>Property 2: ' + myClass.prop2;
    msgDiv.innerHTML += '<br>Class Method: ' + myClass.myMethod();

    /* Instantiate WidgetTemplate widget */
    var templateWidget = new WidgetTemplate({}, 'templatedWidgetDiv');
    templateWidget.startup();

    /* Instantiate Widget_i18n */
    var s = new Widget_i18n({}, 'widgetlocal');
    s.startup();
});
```

```
define({
    root: {
        widgetTitle: "My Widget",
        description: "A custom widget."
    }
    // add supported locales below:
    , "zh-cn": true
});
```

Contents of the strings module

```
define({
    widgetTitle: "我的小工具",
    description: "自定义窗口小部件"
});
```

Contents of the 'strings/zh-ch' module



Initiate Draw Toolbar

- Pass the map as the argument
- Activate the toolbar by passing the type of geometry to be drawn

Start Drawing

- Draw the shape by according to the selected geometry selected. Single click will typically place a vertex
- Double click will end sketch

Define a draw-end event

- Define a draw-end event and pass a callback function to be called when the event is fired
- The event passes as reference is the geometry of the shape drawn

Symbolize the geometry drawn

- Add the geometry passed by the draw-end event handler to a graphic
- Symbolize the graphic appropriately according to the geometry type

```
postCreate: function () {
    this.inherited(arguments);
    // events
    this.own(
        /* setup an event handler (automatically remove() when destroyed) */
        on(this.btndrawpoly, 'click', lang.hitch(this, this.toggleDraw)),
        on(this.btnclear, 'click', lang.hitch(this, function(){
            this.map.graphics.clear();
        }))
    );
    this.tbDraw = new Draw(this.map);
    this.tbDraw.on("draw-end", lang.hitch(this, this.querybyGeometry));
},
toggleDraw: function () {
    domClass.toggle(this.btndrawpoly, "btn-danger");
    if (!this.isDrawActive) {
        this.tbDraw.activate(Draw.POLYGON);
        this.isDrawActive = true;
    } else {
        this.tbDraw.deactivate();
        this.isDrawActive = false;
    }
},
```

Draw.POLYGON is a constant which is passed as an argument to the DrawToolbar

```
1       var tbDrawSymbol =
2           new SimpleFillSymbol(
3               SimpleFillSymbol.STYLE_SOLID,
4               new SimpleLineSymbol(
5                   SimpleLineSymbol.STYLE_DASHDOT,
6                   new Color([255, 255, 0]),
7                   2
8               ),
9               new Color([255,  0, 0, 0.2])
10          );
```

Symbol type used to style a polygon geometry

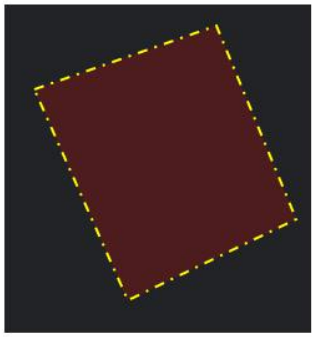
The Fill type constant

Symbol type for the outline of the polygon

The Line type constant for the outline

Color (yellow) and width of the outline

Red Color fill for the polygon along with transparency



```
querybyGeometry: function (evt) {
    this.tbDraw.deactivate();
    this.toggleDraw();
    this.isDrawActive = false;
    this.isBusy(true);

    var geometryInput = evt.geometry;
    var tbDrawSymbol = new SimpleFillSymbol(SimpleFillSymbol.STYLE_SOLID, new
    SimpleLineSymbol(SimpleLineSymbol.STYLE_DASHDOT, new Color([255, 255, 0]), 2), new
    Color([255, 255, 0, 0.2]));

    this.map.graphics.clear();
    var graphicPolygon = new Graphic(geometryInput, tbDrawSymbol);

    this.map.graphics.add(graphicPolygon);
```

Draw Symbol defined

Graphic object is defined with Draw geometry and the Symbol

Graphic object is added to the map's graphic layer

Initialize QueryTask	• Add Feature Layer URL
Initialize the Query Object	• Pass the Draw geometry as the query geometry • Define other Query parameters
Execute the Query	• Pass the query object as an argument • Construct a success and error handler for the query execution operation
Query Event handlers	• The success handler function receives the feature set satisfying the query • The error handler function receives the error message

<button data-dojo-attach-point="btndrawpoly" style="float:right;" class="btn btn-success" data-toggle="tooltip" data-placement="right" title="Click on map to draw polygon"></button>
<button data-dojo-attach-point="btnclear" style="float:right;" class="btn btn-success" data-toggle="tooltip" data-placement="right" title="Clear"></button>

<table class="table">
<thead>
<tr>
<th style="width:10px;">#</th>
<th style="width:180px;">Fire Name</th>
<th style="width:20px;">Area</th>
<th style="width:50px;">Units</th>
</tr>
</thead>
<tbody data-dojo-attach-point="tbcontent">
</tbody>
</table>

Draw Toggle Button
Clear Graphics button
Spatial Query - Active Wildfire
Fire Name State Area
DOM element to build the HTML Table


Our template HTML should be inherited as templateString property inside our app
Implement Toggle Draw function on click of the corresponding button

.then() handles the deferred returned by the Query execution

```
queryDeferred.then(lang.hitch(this,
        function (result) {
            this.map.graphics.clear();
            var str = '';
            for (var i = 0; i < result.features.length; i++) {
                var featAttr = result.features[i].attributes;
                var featGeom = result.features[i].geometry;
                var infoTemplate = new InfoTemplate(featAttr.FIRE_NAME,
                "Area:" + featAttr.AREA_);
                var selectionGraphic = new Graphic(featGeom, symbolSelected,
                null, infoTemplate);
                this.map.graphics.add(selectionGraphic);
                str = str + '<tr><th scope="row">' + (i + 1) + '</th><td>' +
                featAttr.FIRE_NAME + '</td><td>' + featAttr.STATE + '</td>
                <td>' + featAttr.AREA_ + " " + featAttr.AREA_MEAS + '</td>
                </tr>';
            }
            this.map.infoWindow.show();
            this.tbcontent.innerHTML = str;
            this.isBusy(false);
        }),
    function (err) {
        /*Error handler*/
        console.log(err);
        this.isBusy(false);
    });
```

Result object contains a feature set (array of features)

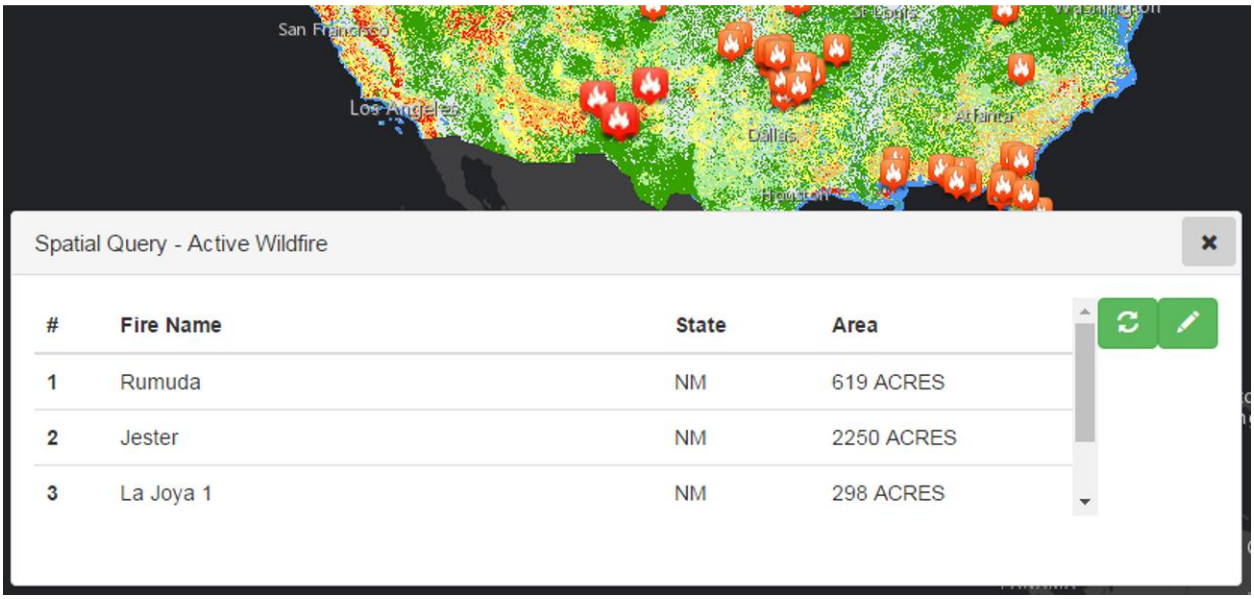
Iterate through the array of features

Construct the HTML from the attribute info

Assign the HTML to the DOM element

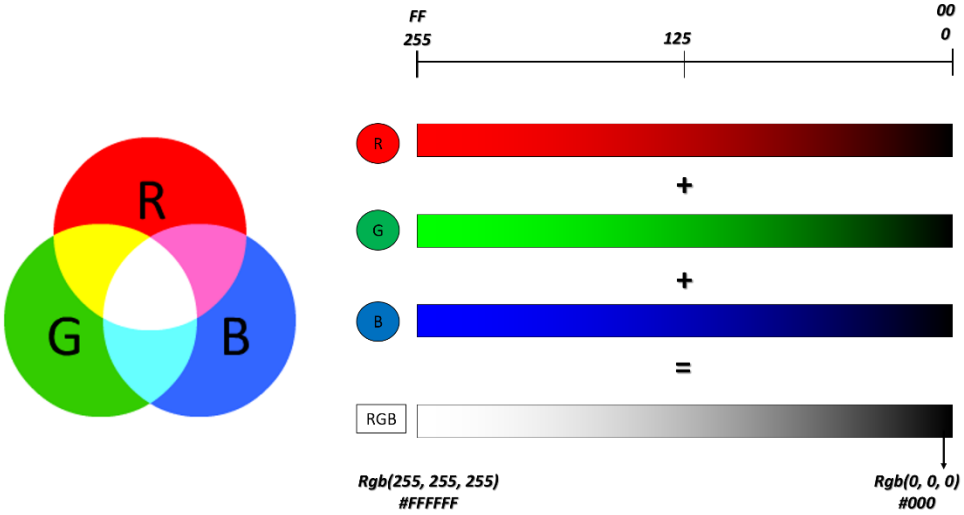
Success handler

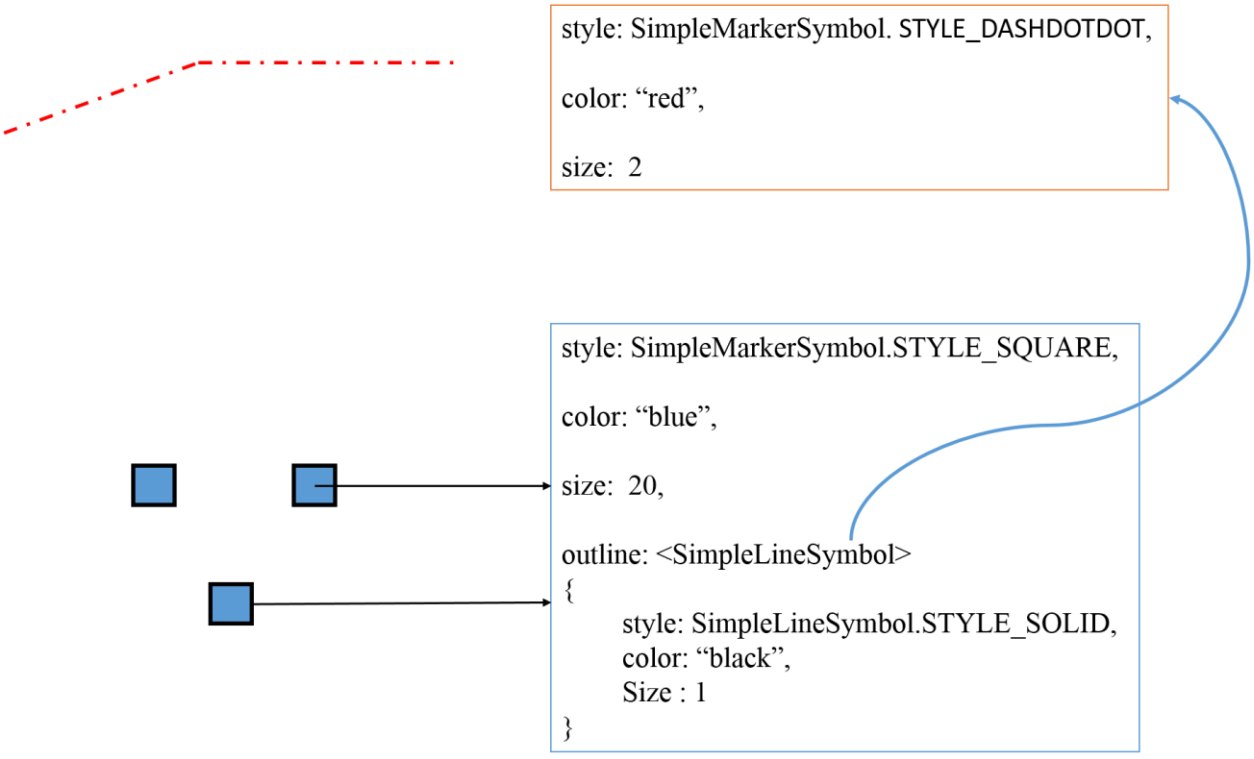
Error handler

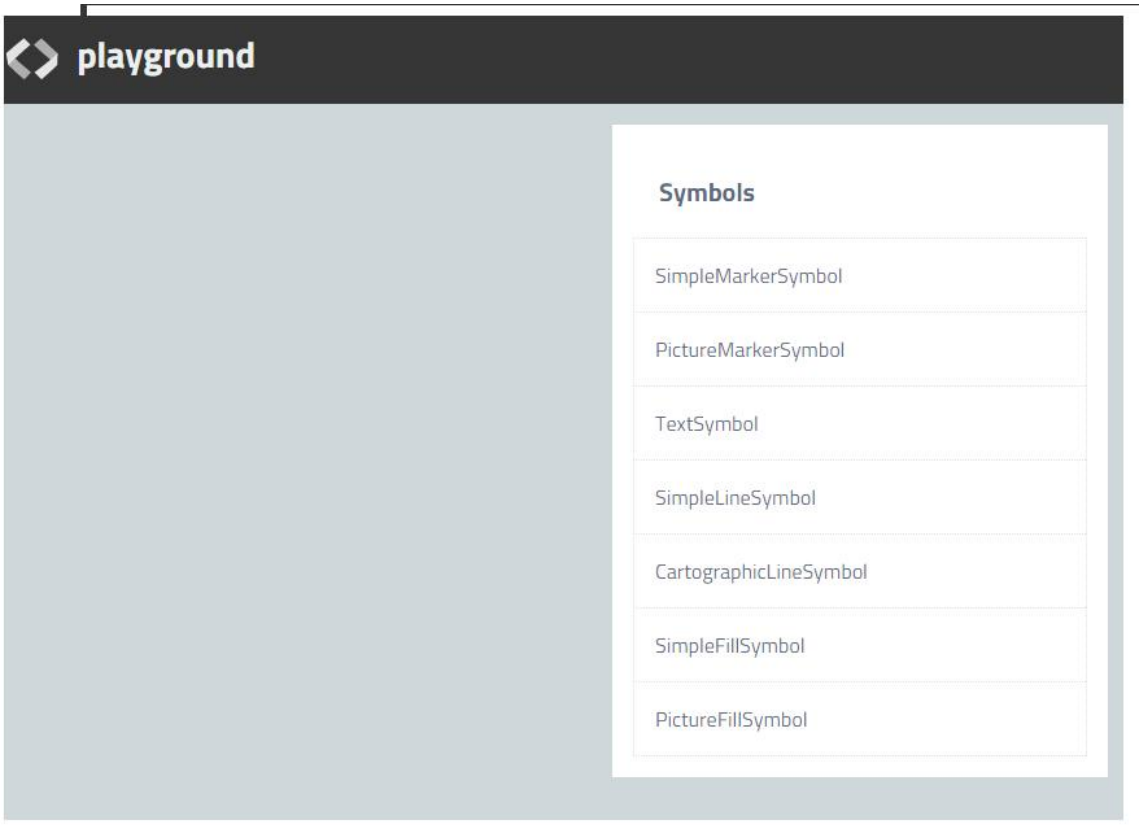


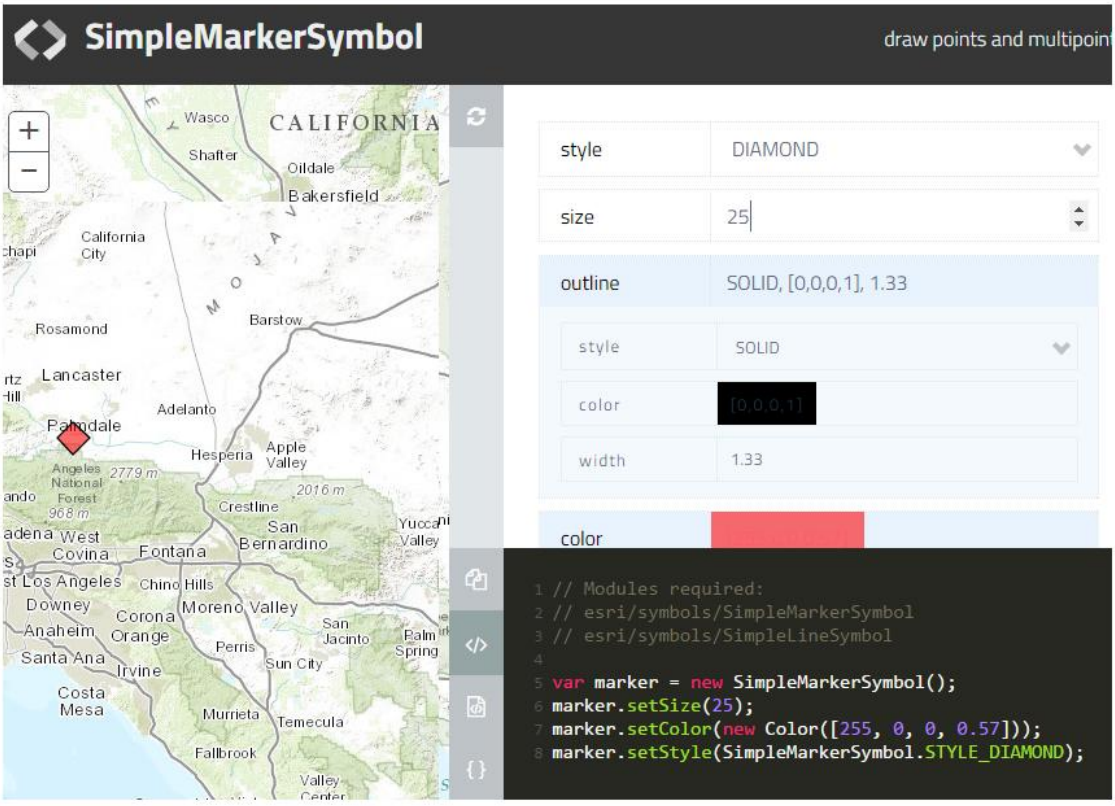
#	Fire Name	State	Area
1	Rumuda	NM	619 ACRES
2	Jester	NM	2250 ACRES
3	La Joya 1	NM	298 ACRES

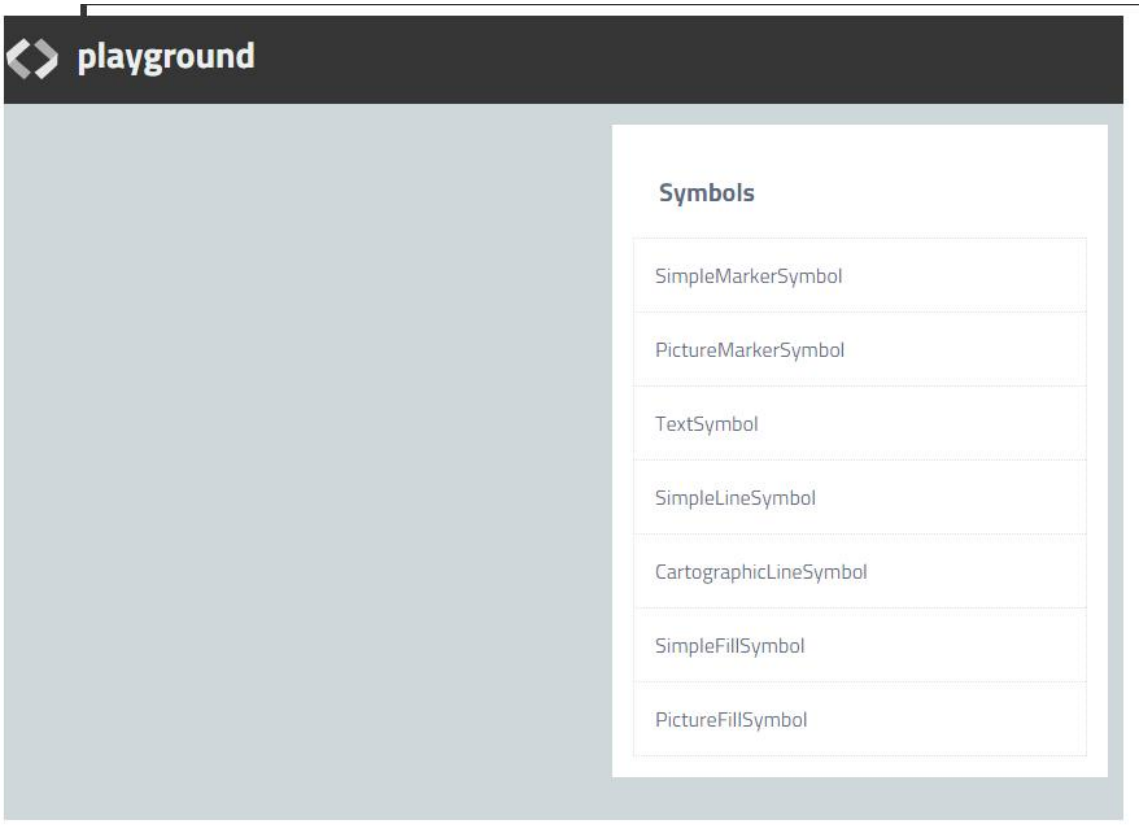
Chapter 5: Working with Renderers

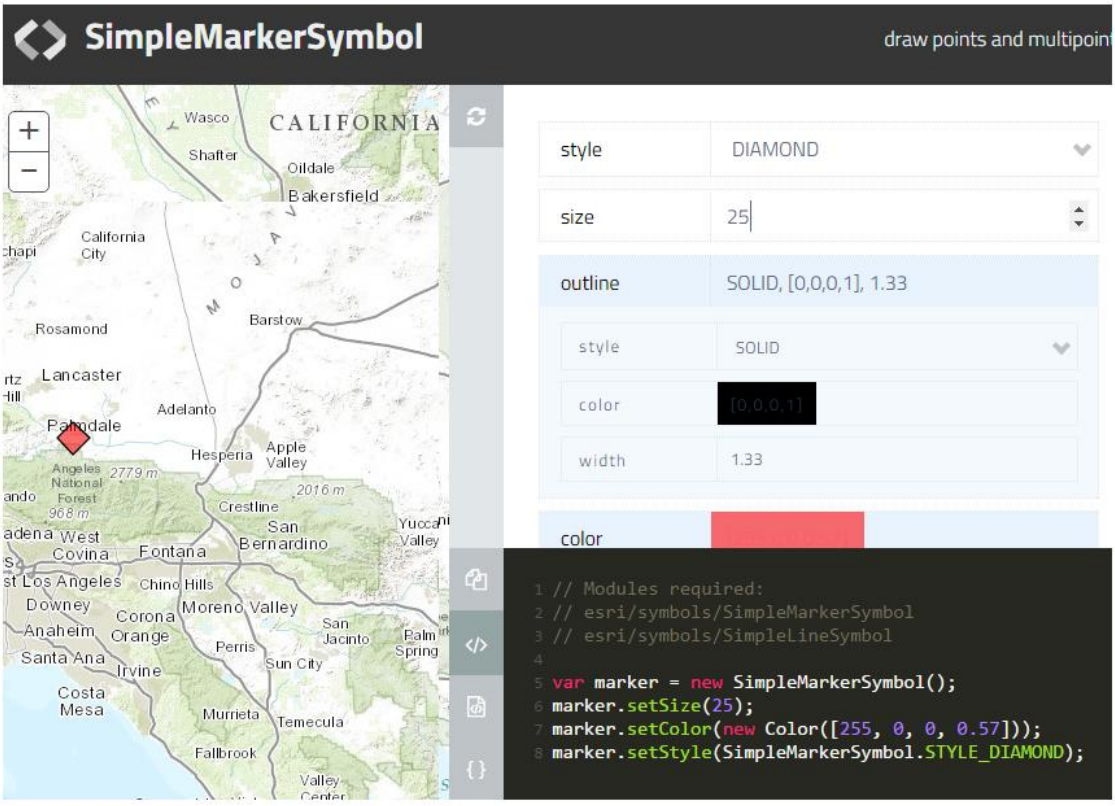





playground
Symbols
SimpleMarkerSymbol
PictureMarkerSymbol
TextSymbol
SimpleLineSymbol
CartographicLineSymbol
SimpleFillSymbol
PictureFillSymbol


SimpleMarkerSymbol
draw points and multipoint
CALIFORNIA
Wasco
Shafter
Oildale
Bakersfield
California City
Rosamond
Barstow
Lancaster
Adelanto
Palmdale
Hesperia
Apple Valley
Crestline
San Bernardino
Fontana
West Covina
Los Angeles
Chino Hills
Downey
Moreno Valley
Corona
Anaheim
Orange
Perris
San Jacinto
Palm Spring
Santa Ana
Irvine
Sun City
Costa Mesa
Murrieta
Temecula
Fallbrook
style
DIAMOND
size
25
outline
SOLID, [0,0,0,1], 1.33
style
SOLID
color
[0,0,0,1]
width
1.33
color
// Modules required:
// esri/symbols/SimpleMarkerSymbol
// esri/symbols/SimpleLineSymbol
var marker = new SimpleMarkerSymbol();
marker.setSize(25);
marker.setColor(new Color([255, 0, 0, 0.57]));
marker.setStyle(SimpleMarkerSymbol.STYLE_DIAMOND);


playground
Symbols
SimpleMarkerSymbol
PictureMarkerSymbol
TextSymbol
SimpleLineSymbol
CartographicLineSymbol
SimpleFillSymbol
PictureFillSymbol


SimpleMarkerSymbol
draw points and multipoint
CALIFORNIA
Wasco
Shafter
Oildale
Bakersfield
California City
Rosamond
Barstow
Lancaster
Adelanto
Palmdale
Hesperia
Apple Valley
Crestline
San Bernardino
Fontana
West Covina
Los Angeles
Chino Hills
Downey
Moreno Valley
Corona
Anaheim
Orange
Perris
San Jacinto
Palm Spring
Santa Ana
Irvine
Sun City
Costa Mesa
Murrieta
Temecula
Fallbrook
style
DIAMOND
size
25
outline
SOLID, [0,0,0,1], 1.33
style
SOLID
color
[0,0,0,1]
width
1.33
color
// Modules required:
// esri/symbols/SimpleMarkerSymbol
// esri/symbols/SimpleLineSymbol
var marker = new SimpleMarkerSymbol();
marker.setSize(25);
marker.setColor(new Color([255, 0, 0, 0.57]));
marker.setStyle(SimpleMarkerSymbol.STYLE_DIAMOND);

developers.arcgis.com/javascript/samples/portal_symbols/index.html

Select a marker symbol then copy the JSON to use in your application.

Category: Basic Enable Base64 encoding

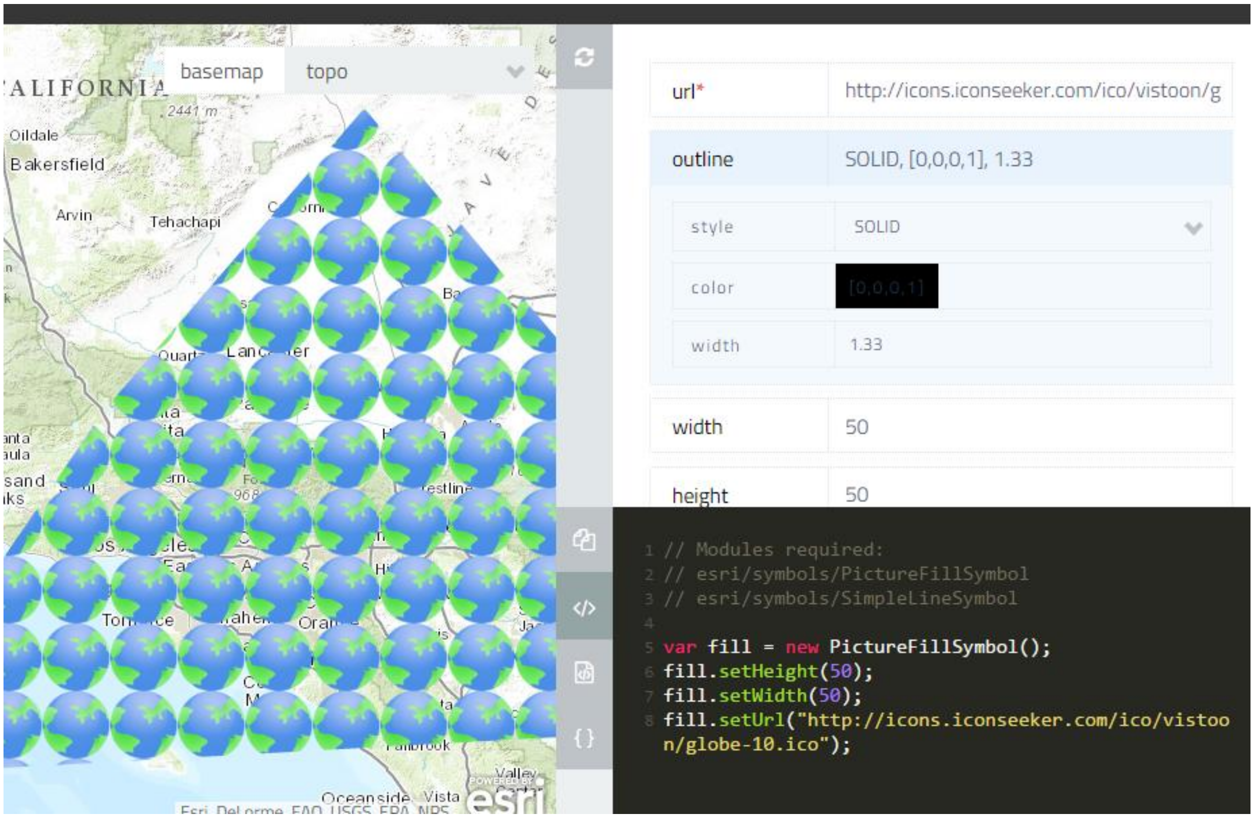
```
var symbol = new
Symbol.PictureMarkerSymbol({"angle":0,"xoffset":0,"yoffset":12,"type":"esriPMS
","url":"http://static.arcgis.com/images/Symbols/Basic/RedStickpin.png","conte
ntType":"image/png","width":24,"height":24});
```

PictureMarkerSymbol

draw points and multipoints

url*	http://static.arcgis.com/images/Symbols/Ba
width	64
height	64
angle	0
xoffset	0
yoffset	0

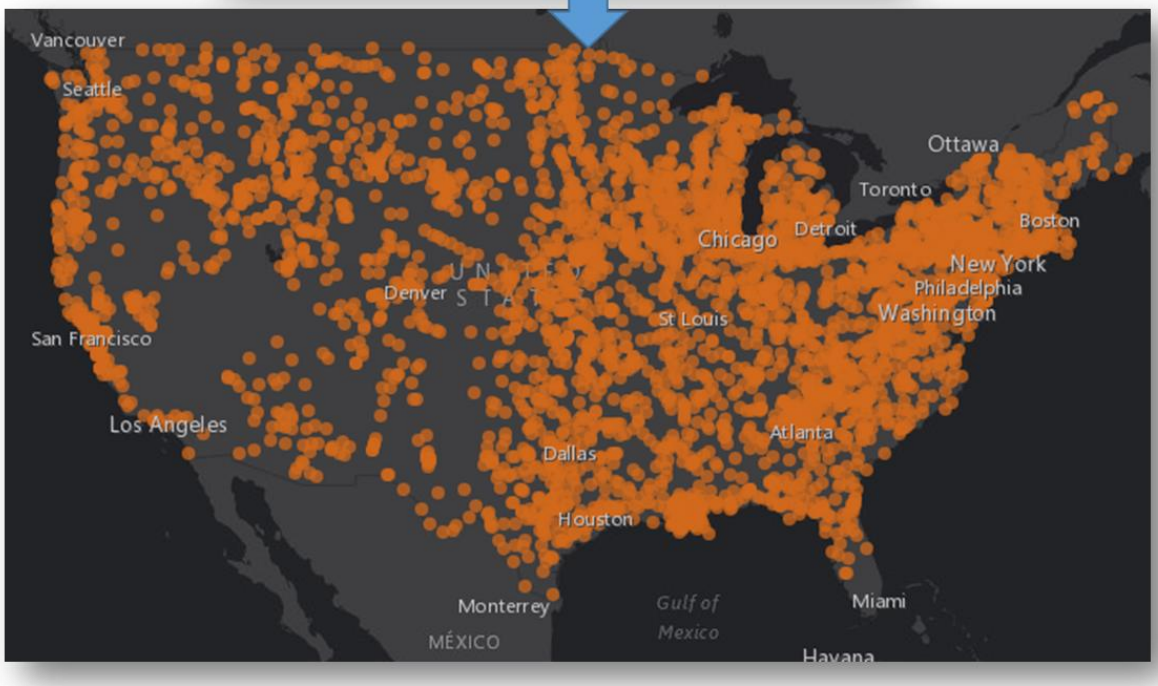
```
// Modules required:
// esri/symbols/PictureMarkerSymbol

var marker = new PictureMarkerSymbol();
marker.setHeight(64);
marker.setWidth(64);
marker.setUrl("http://static.arcgis.com/images/Symbols/Basic/RedStickpin.png");
```

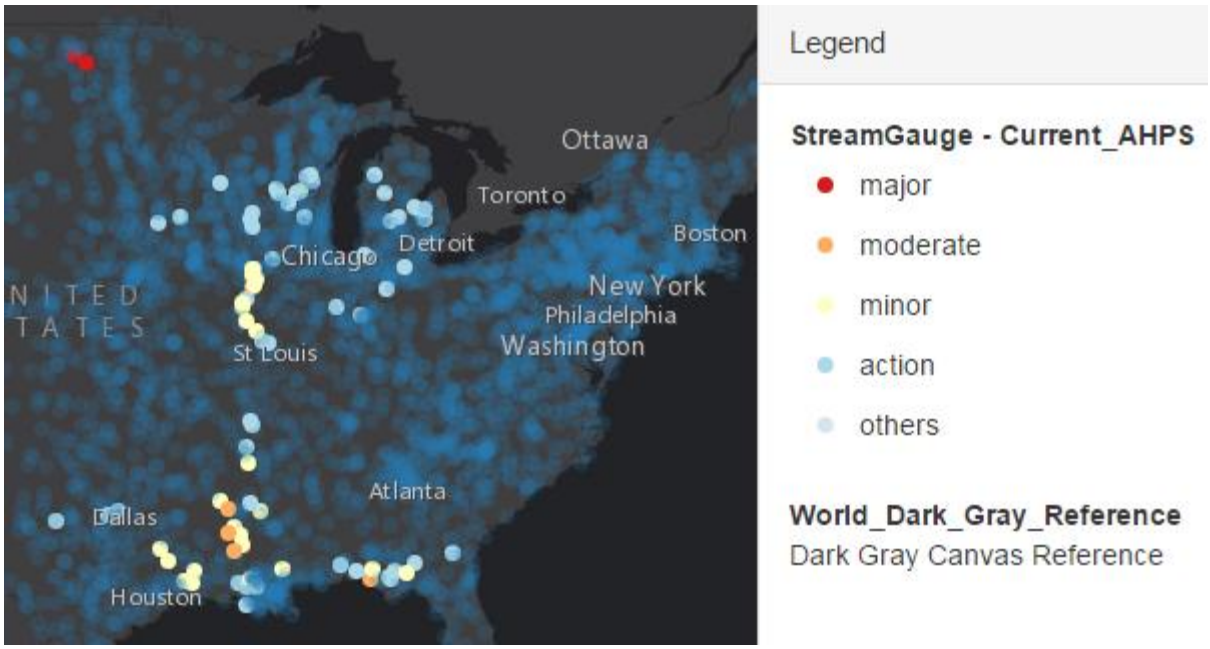

basemap
topo
Oildale
Bakersfield
Arvin
Tehachapi
url*
http://icons.iconseeker.com/ico/vistoon/g
outline
SOLID, [0,0,0,1], 1.33
style
SOLID
color
width
1.33
width
50
height
50
// Modules required:
// esri/symbols/PictureFillSymbol
// esri/symbols/SimpleLineSymbol
var fill = new PictureFillSymbol();
fill.setHeight(50);
fill.setWidth(50);
fill.setUrl("http://icons.iconseeker.com/ico/vistoon/globe-10.ico");


Quartz
Hill
Lancaster
Text Symbol
Clarita
Hesperia
San
Fernando
Angeles
National
Forest
2779 m
Crestline

```
var rendererJson = {
    "type": "simple",
    "label": "",
    "description": "",
    "symbol": {
        "color": [210, 105, 30, 191],
        "size": 6,
        "angle": 0,
        "xoffset": 0,
        "yoffset": 0,
        "type": "esriSMS",
        "style": "esriSMSCircle",
        "outline": {
            "color": [0, 0, 128, 255],
            "width": 0,
            "type": "esriSLS",
            "style": "esriSLSSolid"
        }
    }
};
var renderer = new SimpleRenderer(rendererJson);
```

Simple Marker Symbol

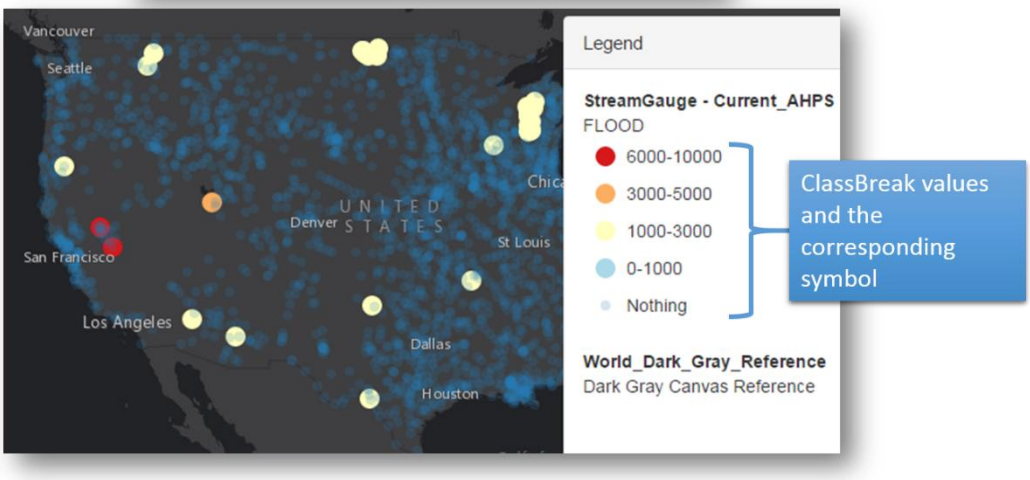




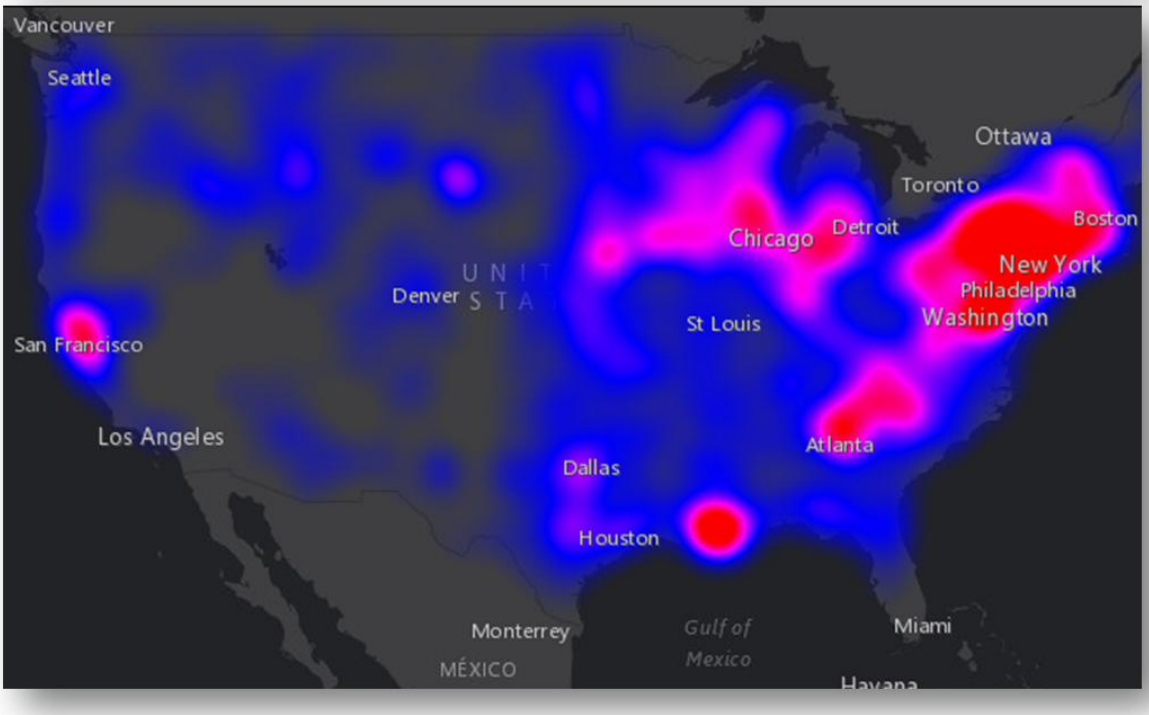

```
"classBreakInfos":
[{
        "classMinValue": 0,
        "classMaxValue": 1000,
        "label": "0-1000",
        "symbol": {
            "color": [171, 217, 233],
            "size": 12,
            "type": "esriSMS",
            "style": "esriSMSCircle"
        }
},{},{},...]
```

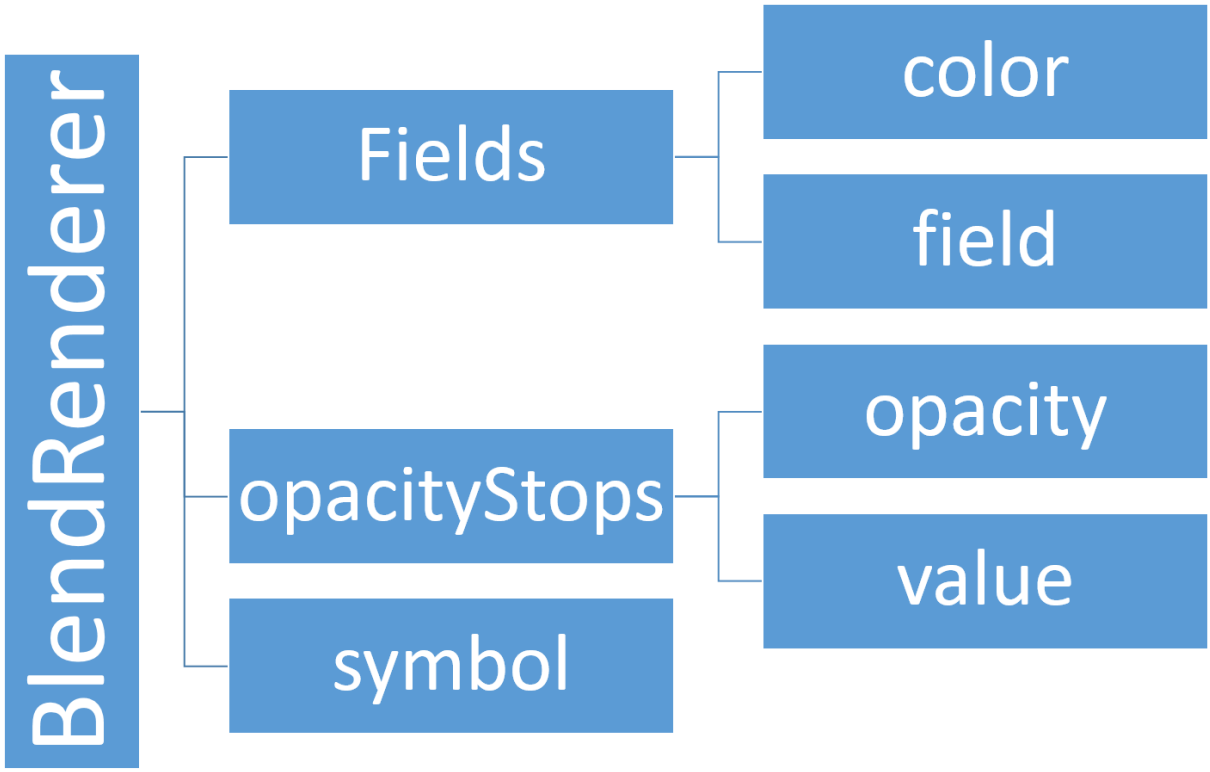
Each ClassBreakInfo object has a mapping b/w a symbol and a class range (maximum - minimum)

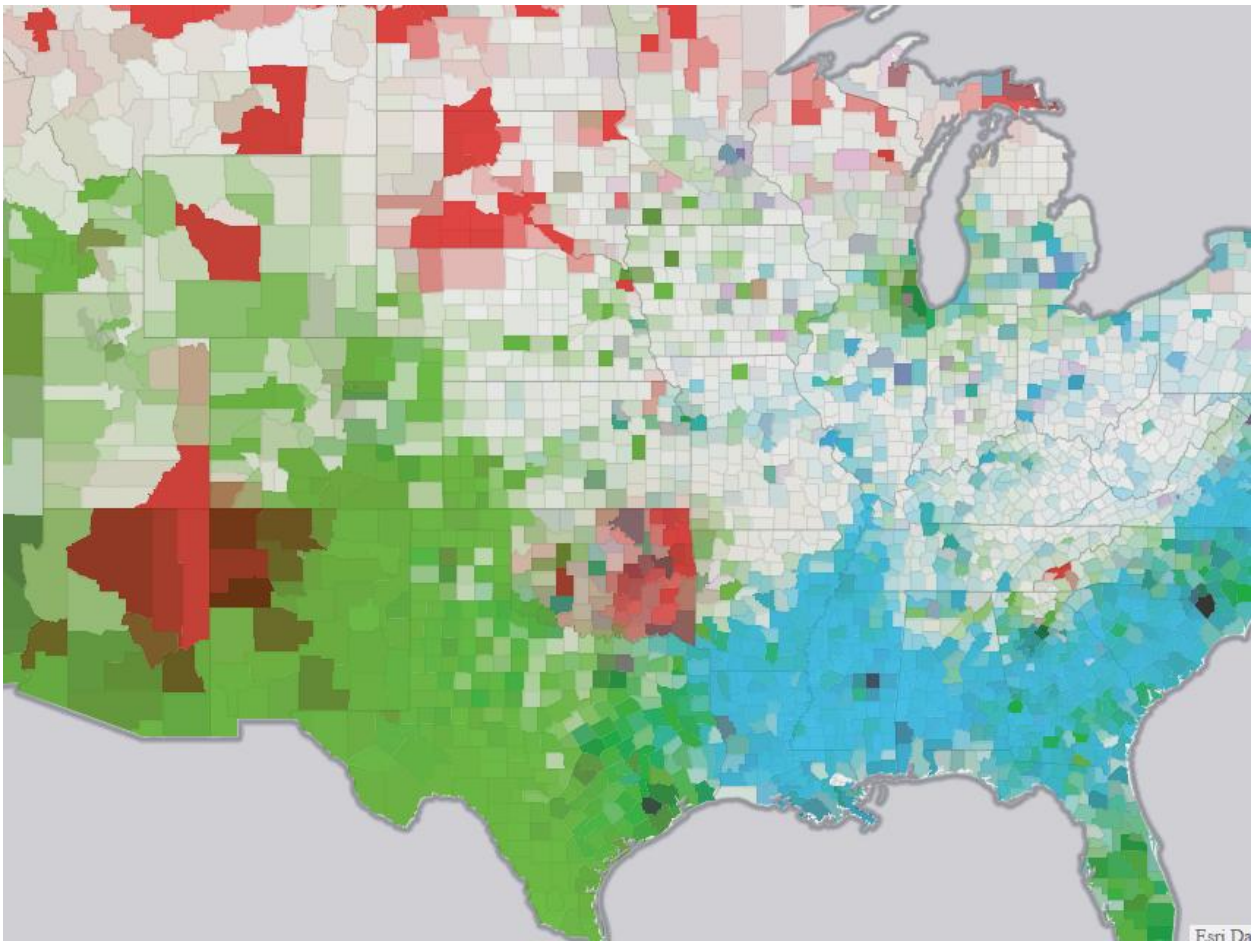
```
var rendererJson = {
    "type": "classBreaks",
    "field": "FLOOD",
    "defaultSymbol": {
        "color": [44, 123, 182, 50],
        "size": 6,
        "type": "esriSMS",
        "style": "esriSMSCircle"
    },
    "defaultLabel": "Nothing",
    "classBreakInfos": [
        { ··· },
        { ··· },
        { ··· },
        { ··· }
    ]
};

var renderer = new ClassBreaksRenderer(rendererJson);
```

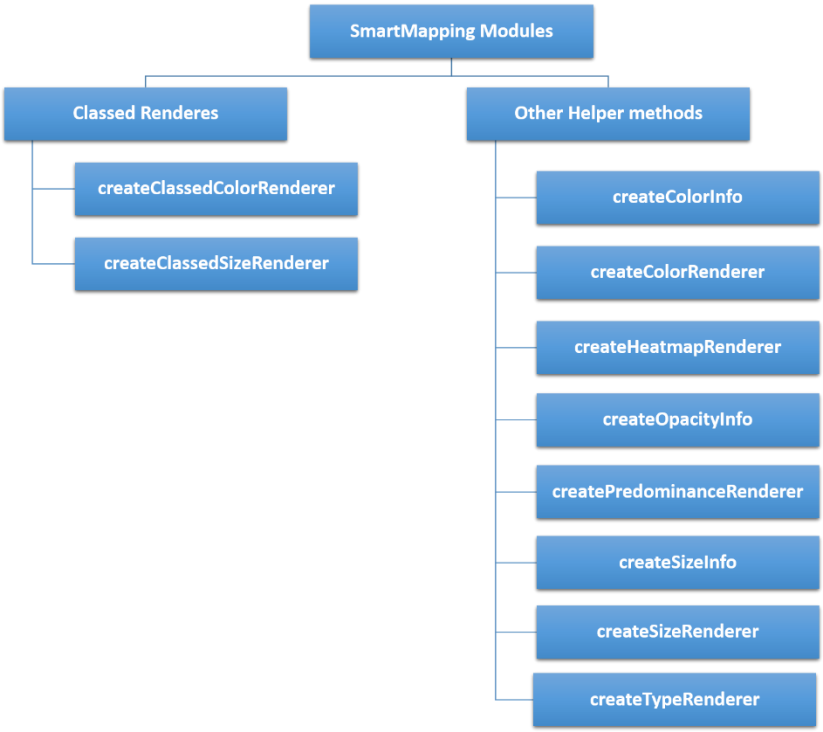


```
var renderer = new HeatmapRenderer({
    colors: ["rgba(0, 0, 250, 0)", "rgb(0, 0, 250)", "rgb(250,
    0, 250)", "rgb(250, 0, 0)"],
    blurRadius: 10,
    maxPixelIntensity: 230,
    minPixelIntensity: 8
});
```




BlendRenderer
Fields
color
field
opacityStops
opacity
value
symbol


Esri Da


SmartMapping Modules
Classed Renderes
createClassedColorRenderer
createClassedSizeRenderer
Other Helper methods
createColorInfo
createColorRenderer
createHeatmapRenderer
createOpacityInfo
createPredominanceRenderer
createSizeInfo
createSizeRenderer
createTypeRenderer

Chapter 6: Working with Real-Time Data

LiveFeeds/Hurricane_Active (MapServer)

View In: ArcGIS JavaScript ArcGIS.com Map Google Earth ArcMap ArcGIS Explorer

View Footprint In: ArcGIS.com Map

Service Description:

Map Name: Hurricane Active

Legend

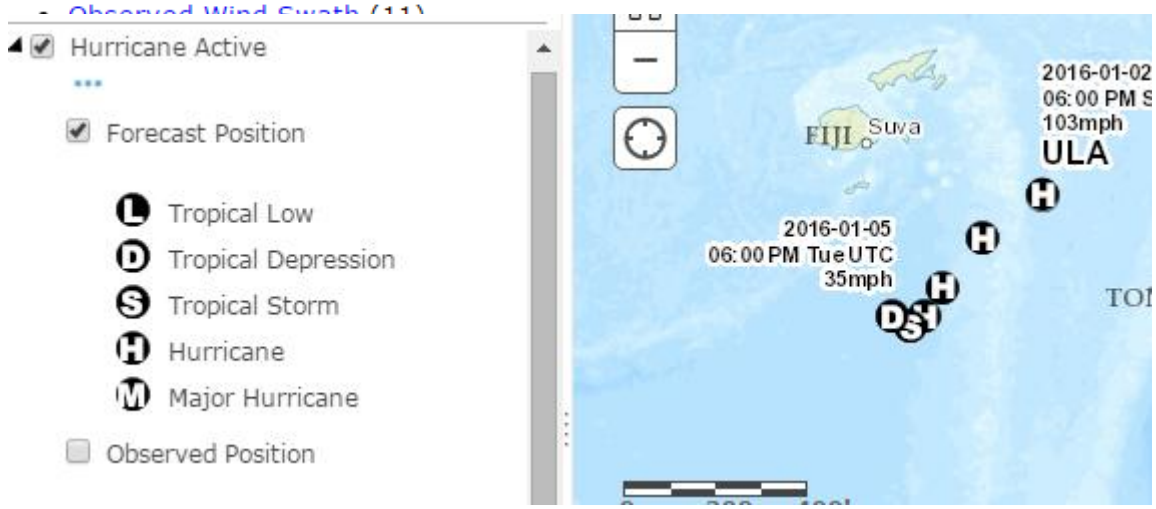
All Layers and Tables

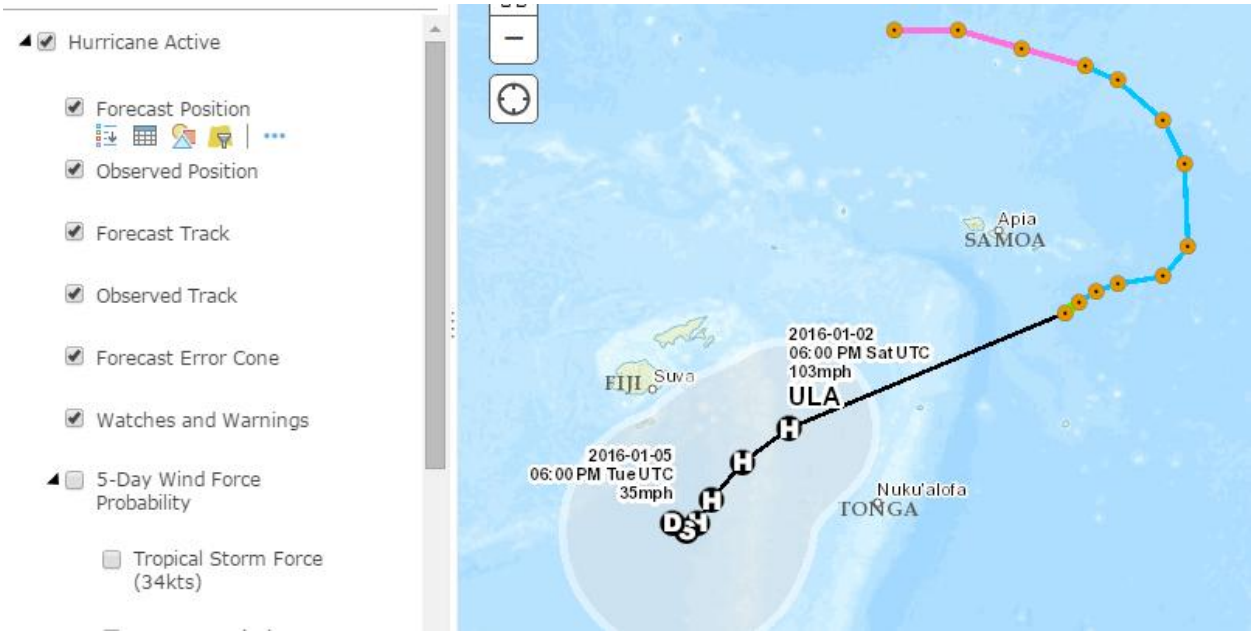
Dynamic Legend

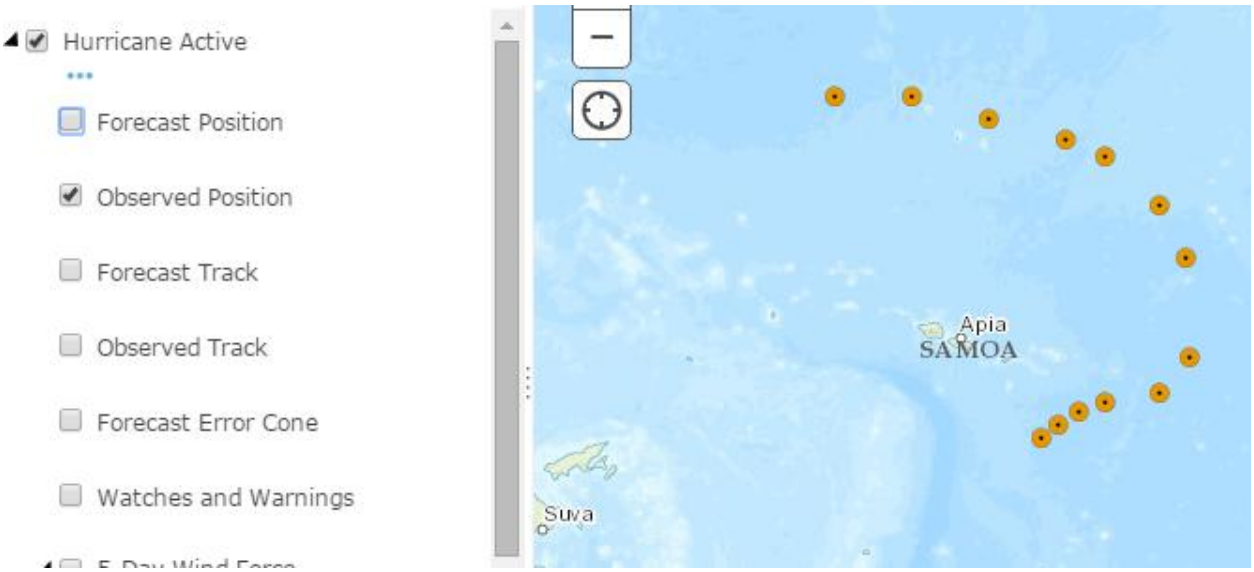
Dynamic All Layers

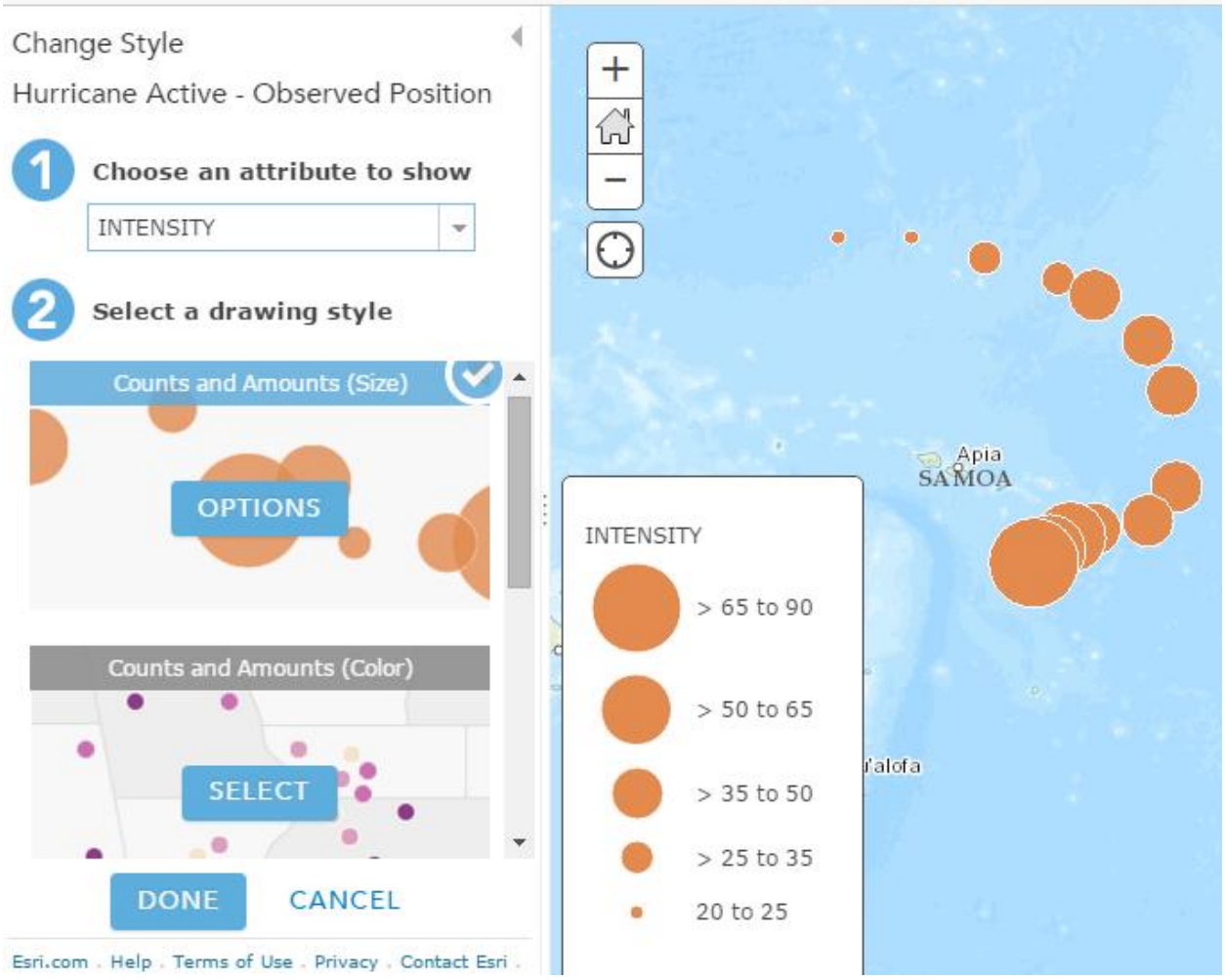
Layers:

- Forecast Position (0)
- Observed Position (1)
- Forecast Track (2)
- Observed Track (3)
- Forecast Error Cone (4)
- Watches and Warnings (5)
- 5-Day Wind Force Probability (6)
  - Tropical Storm Force (34kts) (7)
  - Strong Tropical Storm (50kts) (8)
  - Hurricane Force (64kts+) (9)
  - Raw 1/10th Degree Data (All) (10)
- Observed Wind Swath (11)




Hurricane Active
Forecast Position
Observed Position
Forecast Track
Observed Track
Forecast Error Cone
Watches and Warnings
5-Day Wind Force Probability
Tropical Storm Force (34kts)
Apia
SAMOA
FIJI
Suva
2016-01-02
06:00 PM Sat UTC
103mph
ULA
2016-01-05
06:00 PM Tue UTC
35mph
Nuku'alofa
TONGA

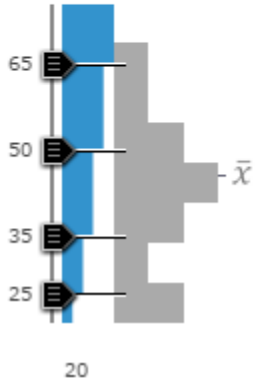

Hurricane Active
Forecast Position
Observed Position
Forecast Track
Observed Track
Forecast Error Cone
Watches and Warnings
Apia
SAMOA
Suva


Change Style
Hurricane Active - Observed Position
1
Choose an attribute to show
INTENSITY
2
Select a drawing style
Counts and Amounts (Size)
OPTIONS
Counts and Amounts (Color)
SELECT
DONE
CANCEL
Esri.com . Help . Terms of Use . Privacy . Contact Esri .
Apia
SAMOA
INTENSITY
> 65 to 90
> 50 to 65
> 35 to 50
> 25 to 35
20 to 25

Change Style

Hurricane Active - Observed Position

INTENSITY



Legend

Size

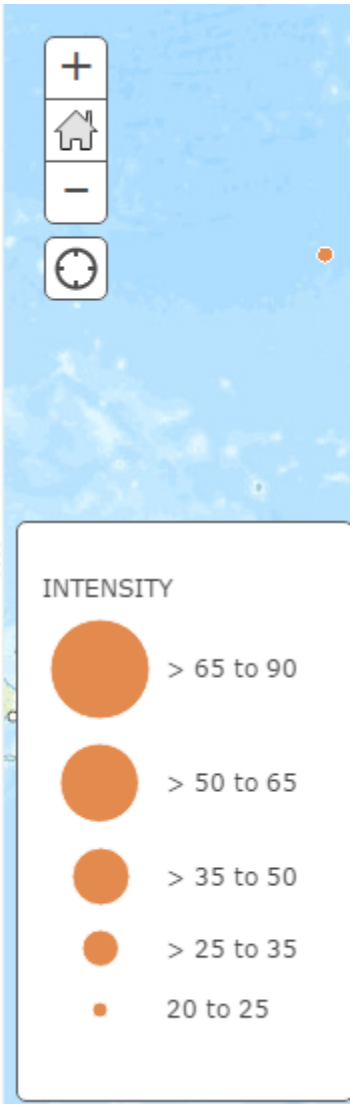
Min 8 px Max 50 px

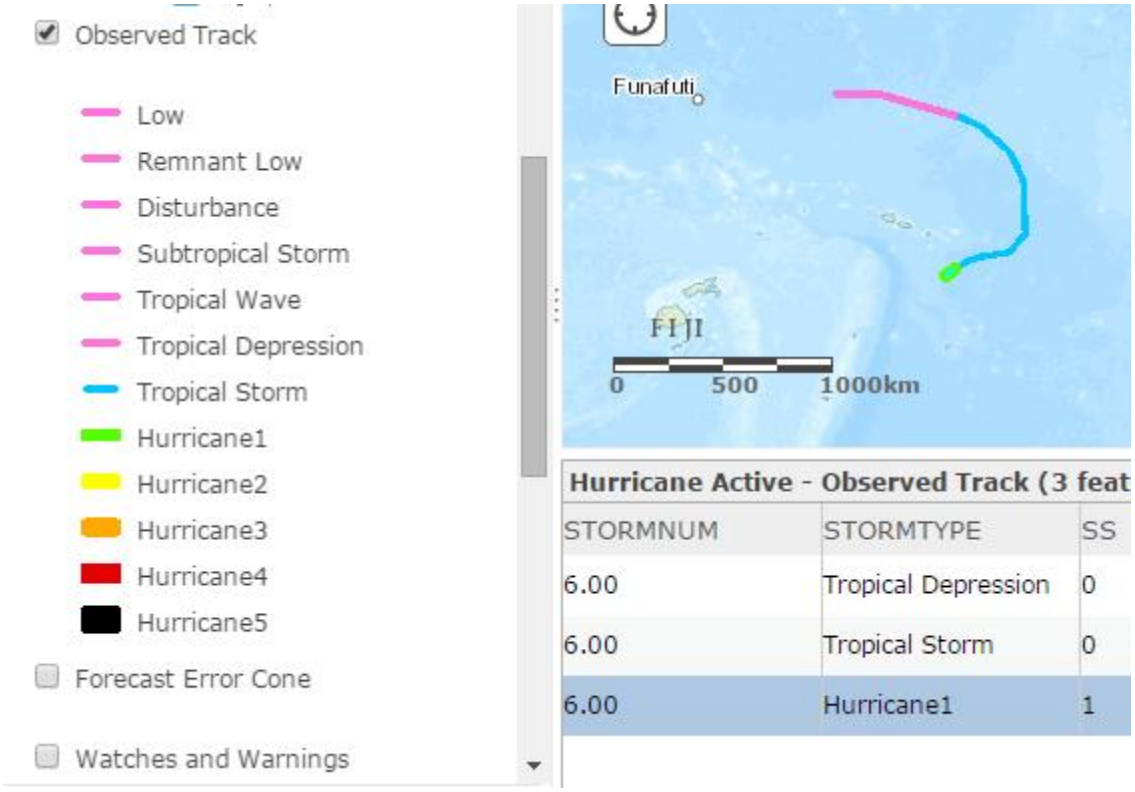
Classify Data

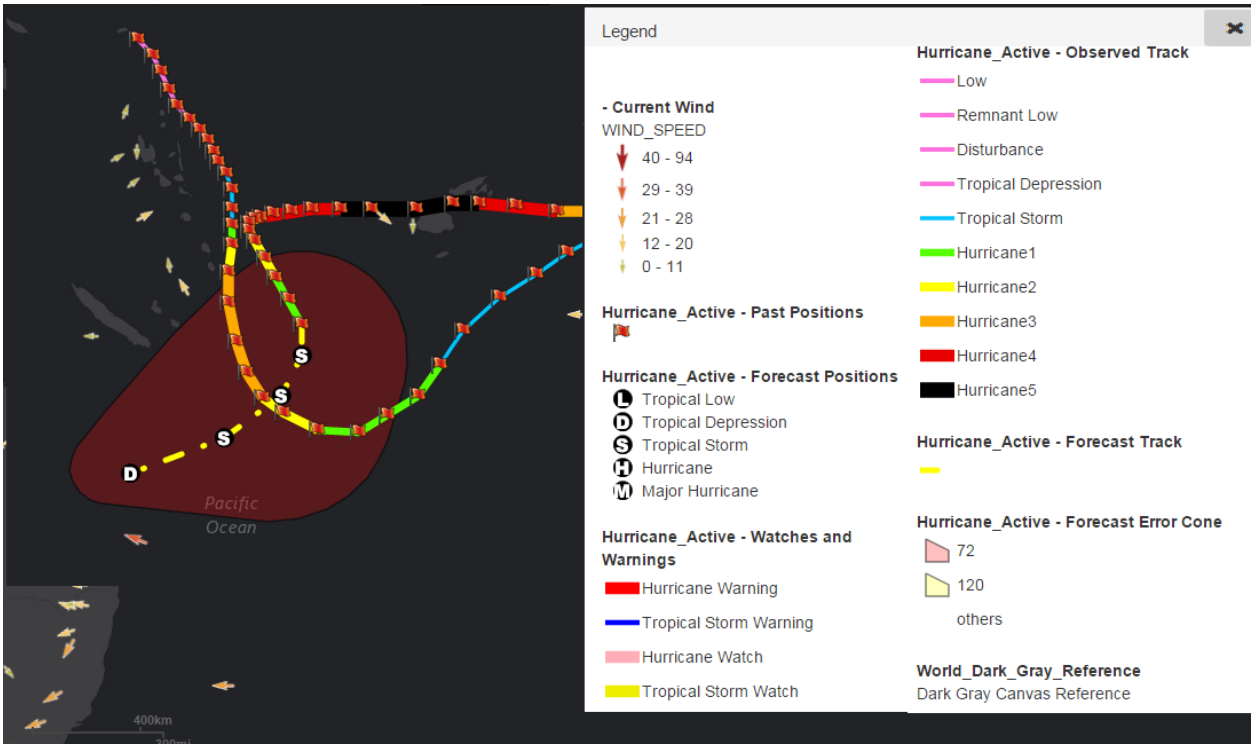
Using Natural Breaks

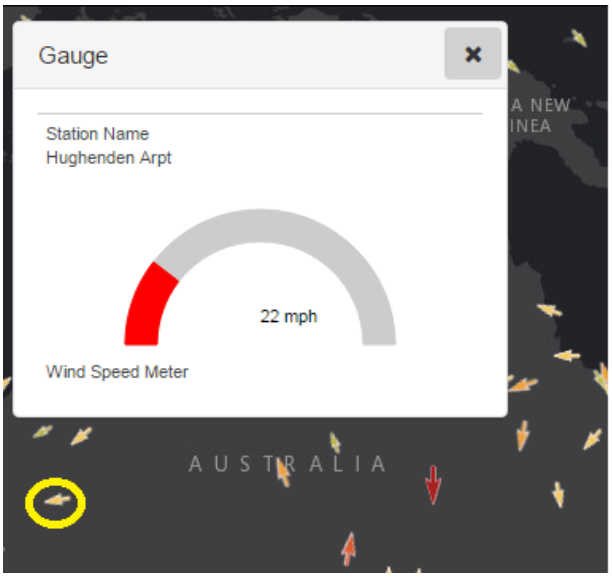
With 5 classes

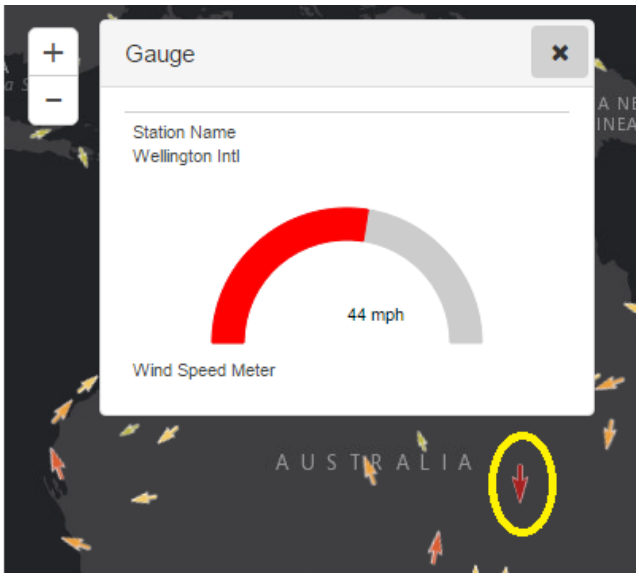
OK CANCEL




Observed Track
Low
Remnant Low
Disturbance
Subtropical Storm
Tropical Wave
Tropical Depression
Tropical Storm
Hurricane1
Hurricane2
Hurricane3
Hurricane4
Hurricane5
Forecast Error Cone
Watches and Warnings
Funafuti
FIJI
0
500
1000km
Hurricane Active - Observed Track (3 feat
STORMNUM
STORMTYPE
SS
6.00
Tropical Depression
0
6.00
Tropical Storm
0
6.00
Hurricane1
1


Pacific
Ocean
400km
Legend
- Current Wind
WIND_SPEED
40 - 94
29 - 39
21 - 28
12 - 20
0 - 11
Hurricane_Active - Past Positions
Hurricane_Active - Forecast Positions
Tropical Low
Tropical Depression
Tropical Storm
Hurricane
Major Hurricane
Hurricane_Active - Watches and Warnings
Hurricane Warning
Tropical Storm Warning
Hurricane Watch
Tropical Storm Watch
Hurricane_Active - Observed Track
Low
Remnant Low
Disturbance
Tropical Depression
Tropical Storm
Hurricane1
Hurricane2
Hurricane3
Hurricane4
Hurricane5
Hurricane_Active - Forecast Track
Hurricane_Active - Forecast Error Cone
72
120
others
World_Dark_Gray_Reference
Dark Gray Canvas Reference



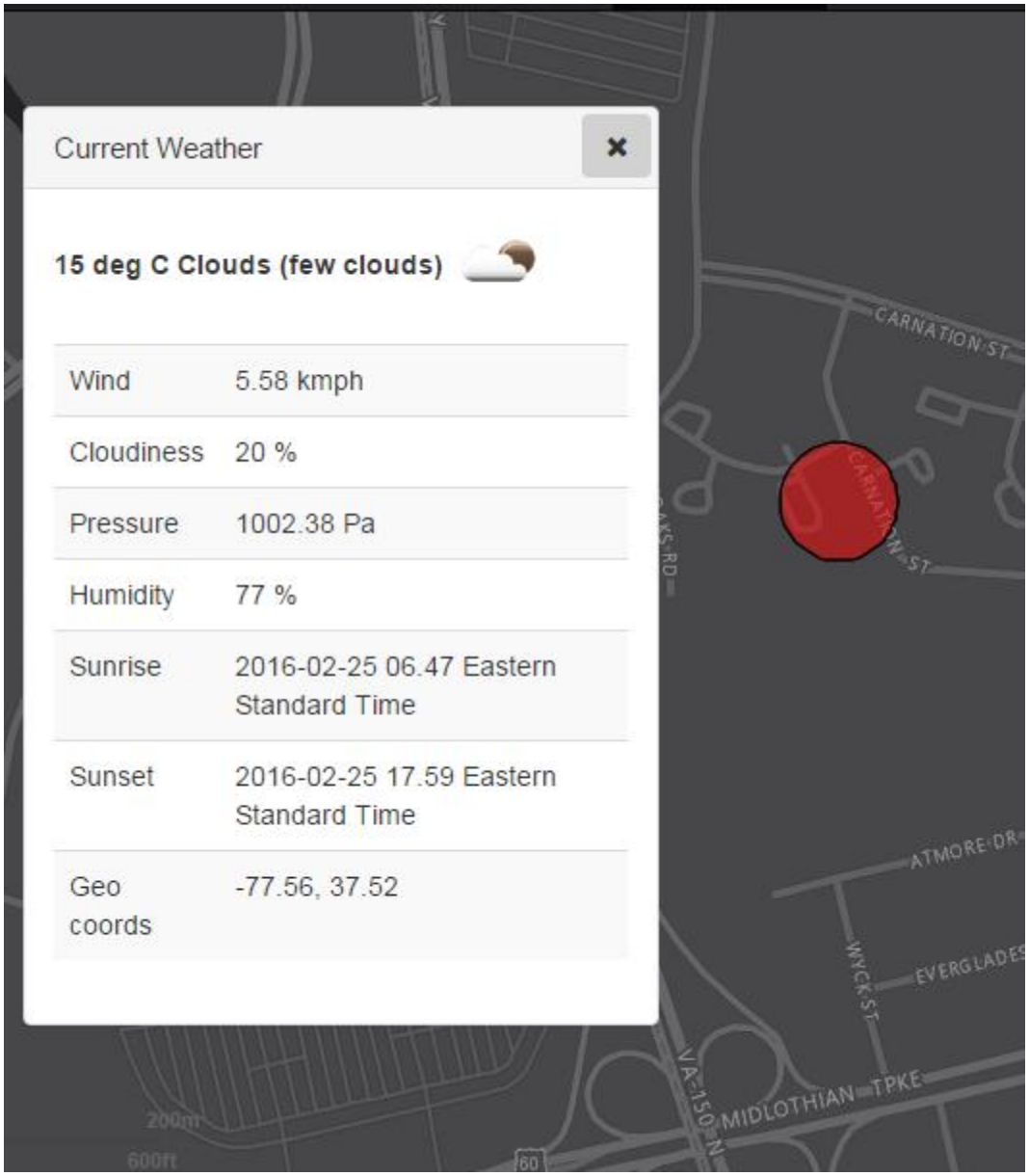


Hurricane Dashboard

Active Hurricanes:

WINSTON

MSLP	0
BASIN	SH
STORMNUM	11
STORMTYPE	Tropical Storm
INTENSITY	45
SS	0


Current Weather
15 deg C Clouds (few clouds)
Wind 5.58 kmph
Cloudiness 20 %
Pressure 1002.38 Pa
Humidity 77 %
Sunrise 2016-02-25 06.47 Eastern Standard Time
Sunset 2016-02-25 17.59 Eastern Standard Time
Geo coords -77.56, 37.52
CARNATION ST
ATMORE DR
WYCK ST
MIDLOTHIAN TPKE
VA-150 N
200mi
600ft
60

Chapter 7: Map Analytics and Visualization Techniques

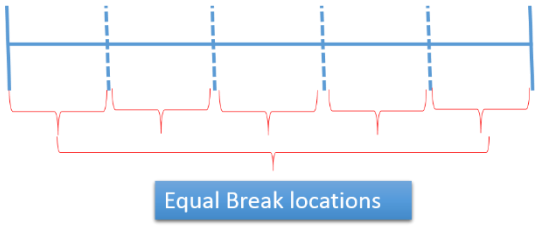
```
var queryTask = new QueryTask(BlockLevelFeatureLayerURL);
var query = new Query();
var maxStatDef = new StatisticDefinition();
maxStatDef.onStatisticField = 'MEDHINC_CY';
maxStatDef.outStatisticFieldName = 'MAX_MEDHINC_CY';
maxStatDef.statisticType = 'max';

var minStatDef = new StatisticDefinition();
minStatDef.onStatisticField = 'MEDHINC_CY';
minStatDef.outStatisticFieldName = 'MIN_MEDHINC_CY';
minStatDef.statisticType = 'min';

var stdDevStatDef = new StatisticDefinition();
stdDevStatDef.onStatisticField = 'MEDHINC_CY';
stdDevStatDef.outStatisticFieldName = 'STDDEV_MEDHINC_CY';
stdDevStatDef.statisticType = 'stddev';

var avgDevStatDef = new StatisticDefinition();
avgDevStatDef.onStatisticField = 'MEDHINC_CY';
avgDevStatDef.outStatisticFieldName = 'AVG_MEDHINC_CY';
avgDevStatDef.statisticType = 'avg';


console.log([maxStatDef, minStatDef, stdDevStatDef]);
query.returnGeometry = false;
query.where = "1=1";
query.outStatistics = [maxStatDef, minStatDef, stdDevStatDef, avgDevStatDef];
queryTask.execute(query, handleQueryResult, errorHandler);

function handleQueryResult(results) {
    if (!results.hasOwnProperty("features") ||  results.features.length === 0) {
        console.log('No features, something went wrong');
        return; }
    var statsObj = results.features[0].attributes;
    console.log(statsObj);
    stats.Plus1StdDev = statsObj.AVG_MEDHINC_CY + 1 * statsObj.STDDEV_MEDHINC_CY;
    stats.Plus2StdDev  = statsObj.AVG_MEDHINC_CY + 2 * statsObj.STDDEV_MEDHINC_CY;
    stats.Plus3StdDev  = statsObj.AVG_MEDHINC_CY + 3 * statsObj.STDDEV_MEDHINC_CY;
    stats.Minus1StdDev = statsObj.AVG_MEDHINC_CY - 1 * statsObj.STDDEV_MEDHINC_CY;
    stats.Mius2StdDev  = statsObj.AVG_MEDHINC_CY - 2 * statsObj.STDDEV_MEDHINC_CY;
    stats.Minus3StdDev  = statsObj.AVG_MEDHINC_CY - 3 * statsObj.STDDEV_MEDHINC_CY;
    console.log(stats);
}
```

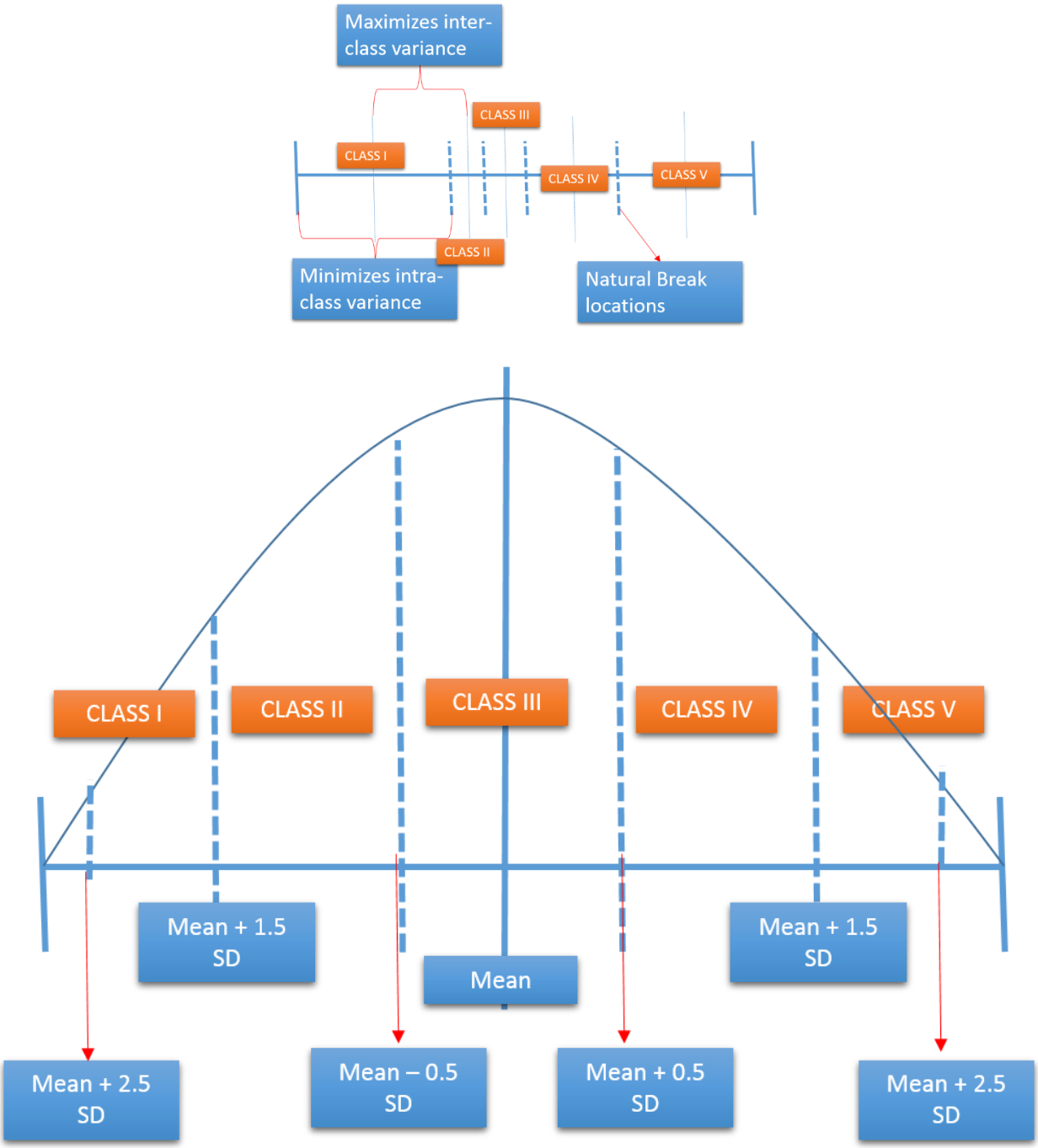
Maximum, Minimum, Average & Standard Deviation Statistic Definition

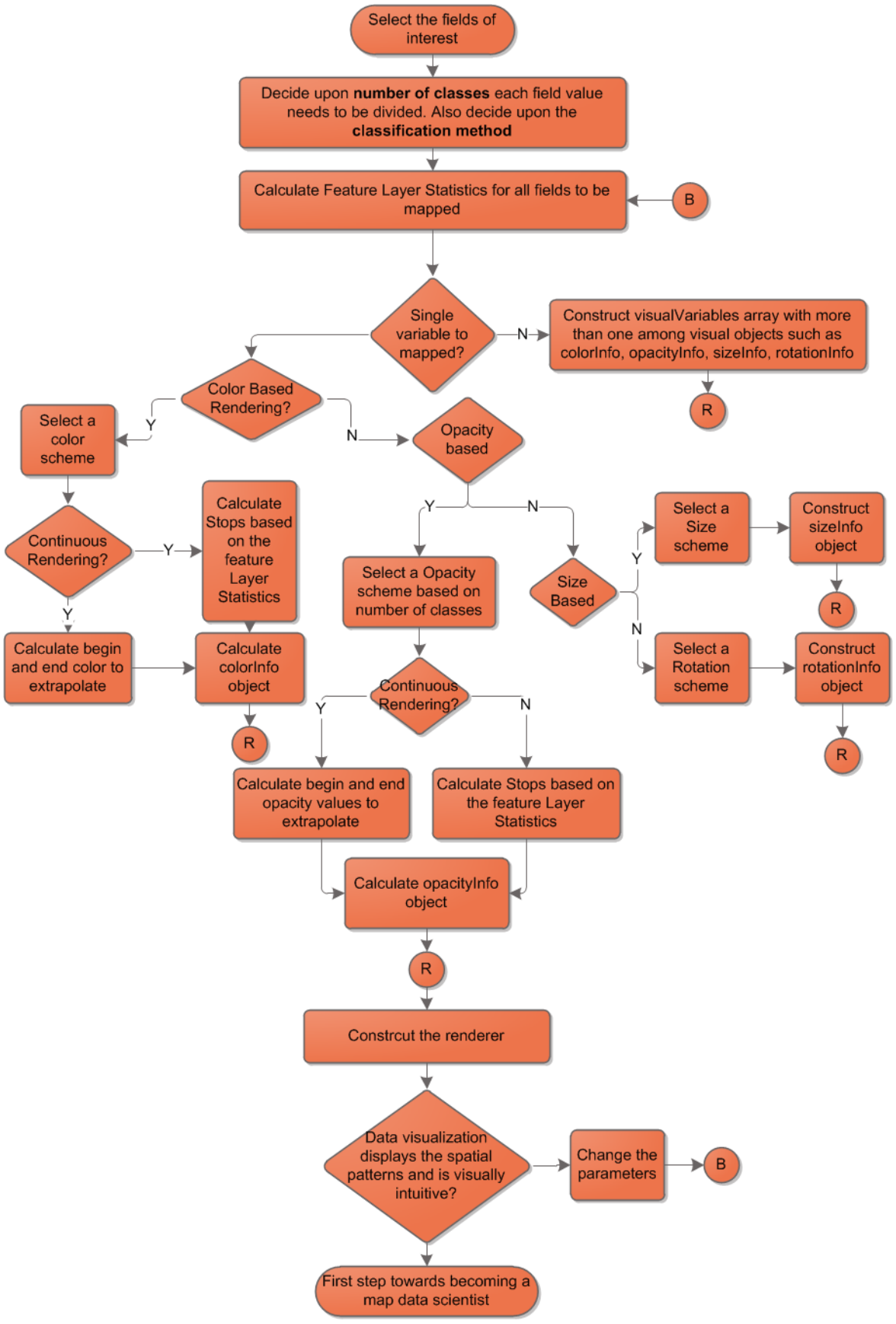
Pass it as an array for outStatistics property of the Query

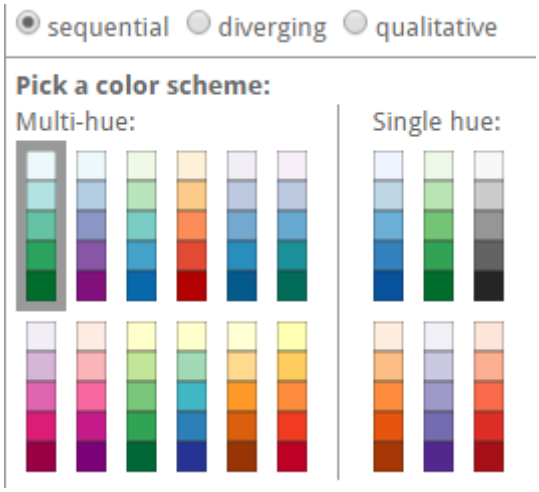
This object contains all the defined statistics

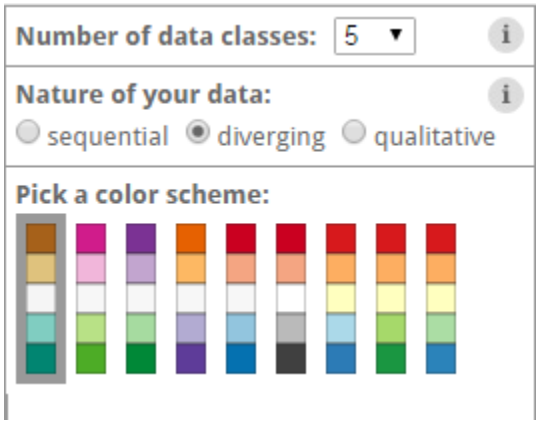
Calculate +1, +2, +3 Std.Deviation as well as -1, -2 & -3 Std.Dev

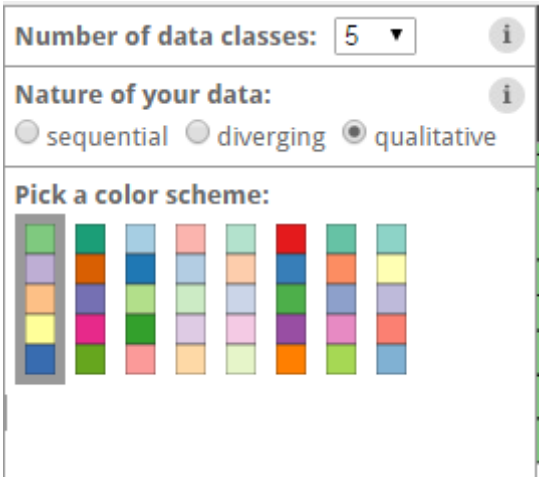


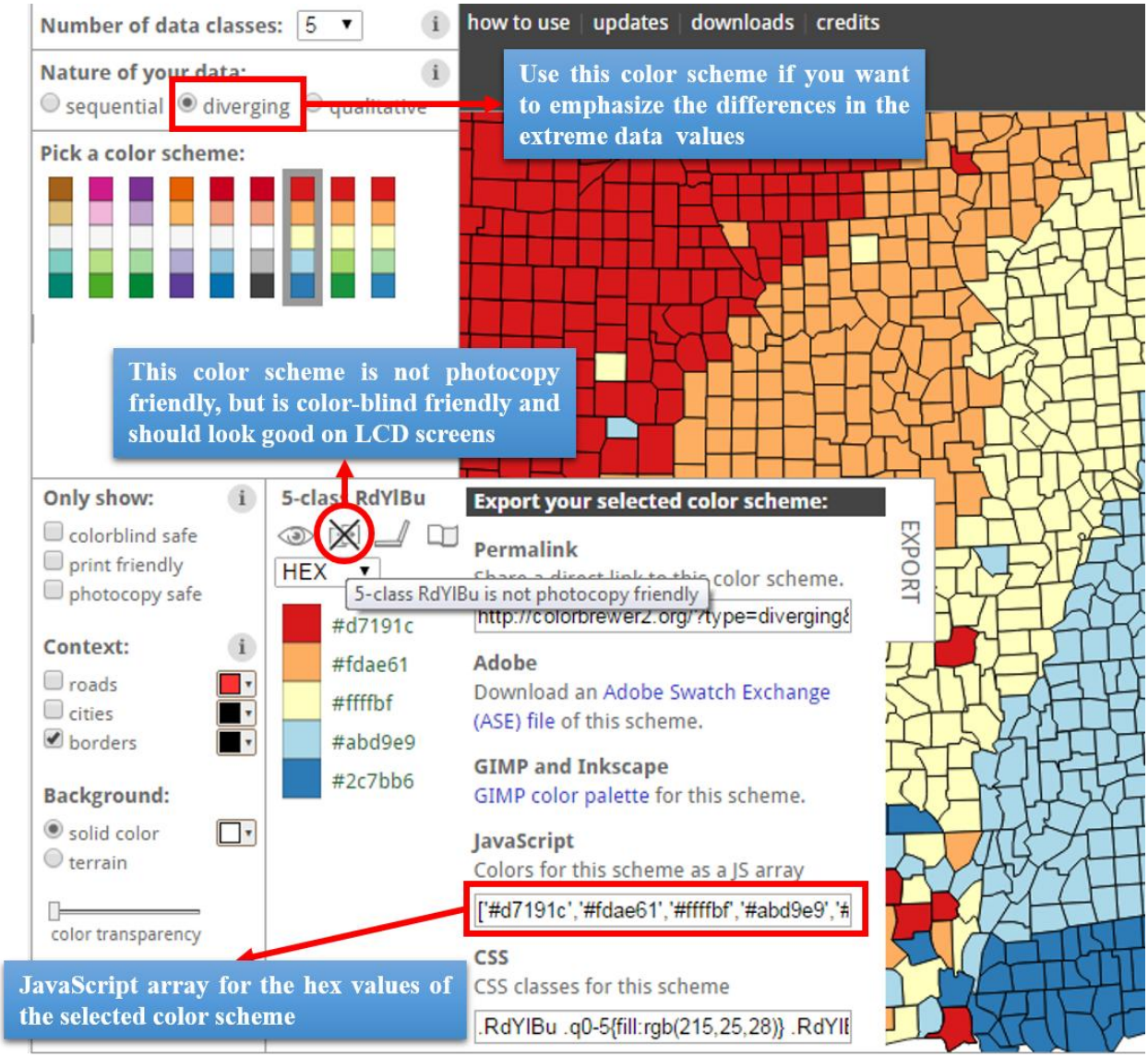

Maximizes inter-class variance
CLASS III
CLASS I
CLASS IV
CLASS V
CLASS II
Minimizes intra-class variance
Natural Break locations
CLASS I
CLASS II
CLASS III
CLASS IV
CLASS V
Mean + 1.5 SD
Mean
Mean + 1.5 SD
Mean + 2.5 SD
Mean – 0.5 SD
Mean + 0.5 SD
Mean + 2.5 SD

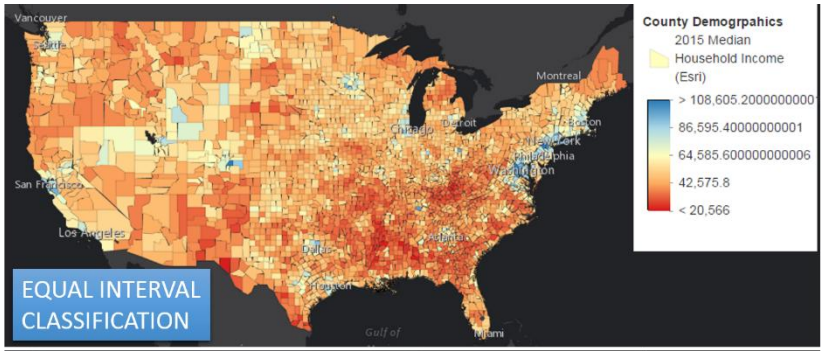

Select the fields of interest
Decide upon **number of classes** each field value needs to be divided. Also decide upon the **classification method**
Calculate Feature Layer Statistics for all fields to be mapped
B
Single variable to mapped?
N
Construct visualVariables array with more than one among visual objects such as colorInfo, opacityInfo, sizeInfo, rotationInfo
R
Color Based Rendering?
Y
N
Select a color scheme
Opacity based
Continuous Rendering?
Y
Calculate Stops based on the feature Layer Statistics
Y
Calculate begin and end color to extrapolate
Calculate colorInfo object
R
Y
N
Select a Opacity scheme based on number of classes
Size Based
Y
Select a Size scheme
Construct sizeInfo object
R
N
Select a Rotation scheme
Construct rotationInfo object
R
Continuous Rendering?
Y
N
Calculate begin and end opacity values to extrapolate
Calculate Stops based on the feature Layer Statistics
Calculate opacityInfo object
R
Constrcut the renderer
Data visualization displays the spatial patterns and is visually intuitive?
Change the parameters
B
First step towards becoming a map data scientist

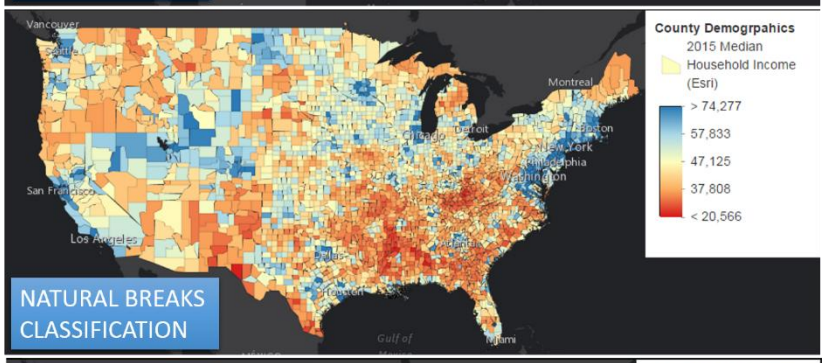

sequential
diverging
qualitative
Pick a color scheme:
Multi-hue:
Single hue:

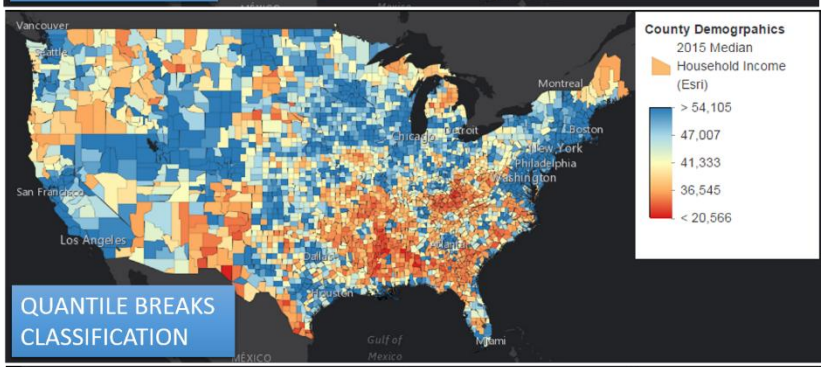

Number of data classes:
5
Nature of your data:
sequential
diverging
qualitative
Pick a color scheme:

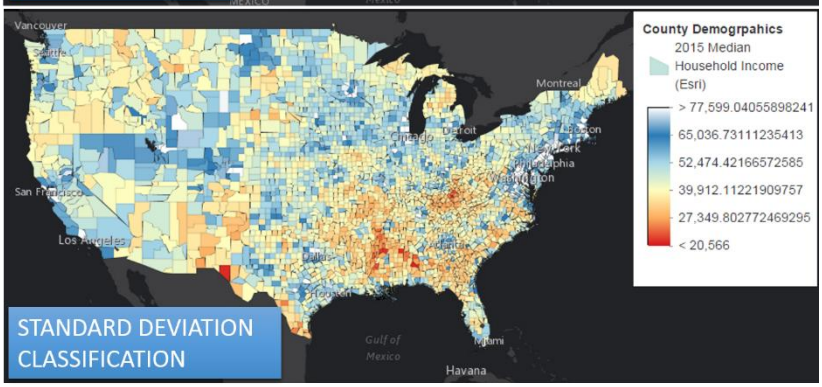

Number of data classes:
5
Nature of your data:
sequential
diverging
qualitative
Pick a color scheme:

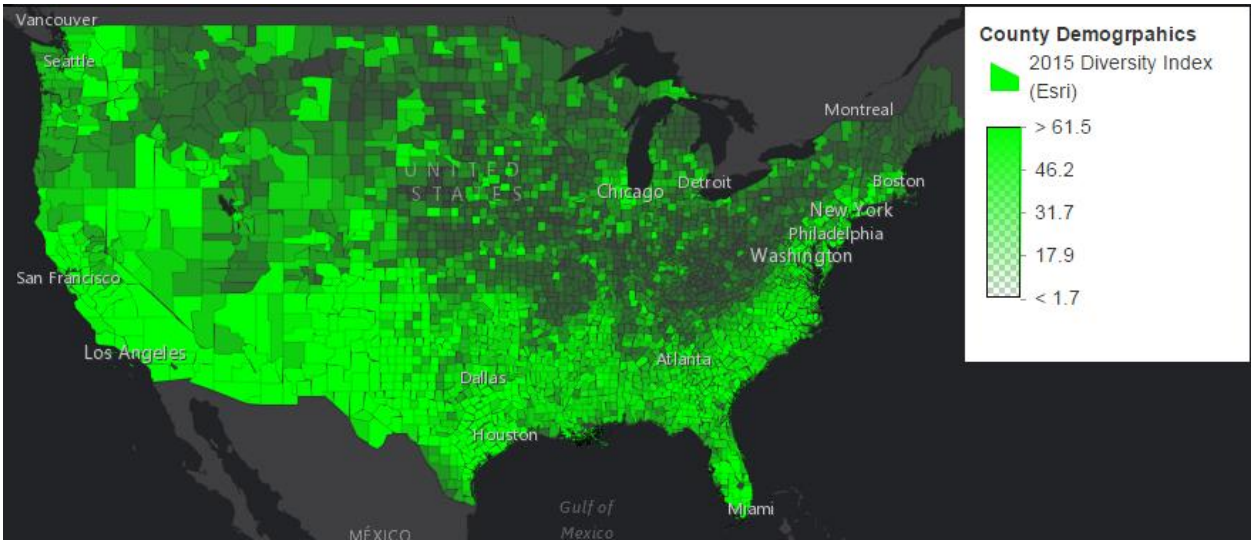

Number of data classes: 5
Nature of your data:
sequential
diverging
qualitative
Pick a color scheme:
how to use | updates | downloads | credits
Use this color scheme if you want to emphasize the differences in the extreme data values
This color scheme is not photocopy friendly, but is color-blind friendly and should look good on LCD screens
Only show:
colorblind safe
print friendly
photocopy safe
Context:
roads
cities
borders
Background:
solid color
terrain
color transparency
5-class RdYlBu
HEX
5-class RdYlBu is not photocopy friendly
#d7191c
#fdae61
#ffffbf
#abd9e9
#2c7bb6
Export your selected color scheme:
Permalink
color scheme.
http://colorbrewer2.org/?type=diverging&
Adobe
Download an Adobe Swatch Exchange (ASE) file of this scheme.
GIMP and Inkscape
GIMP color palette for this scheme.
JavaScript
Colors for this scheme as a JS array
['#d7191c','#fdae61','#ffffbf','#abd9e9','#
CSS
CSS classes for this scheme
.RdYlBu .q0-5{fill:rgb(215,25,28)} .RdYlB
EXPORT
JavaScript array for the hex values of the selected color scheme

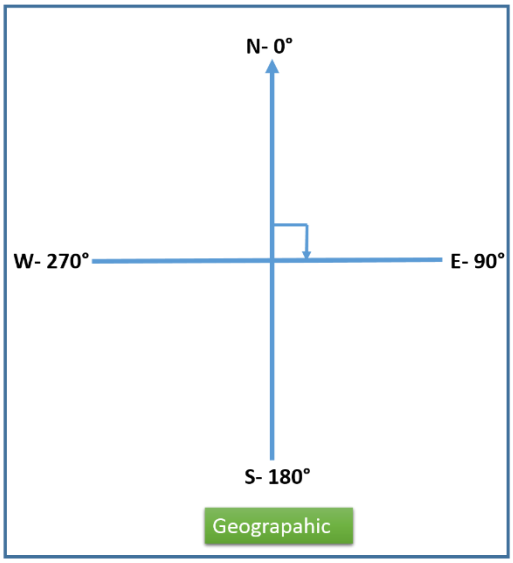

Vancouver
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of
Miami
County Demogrpahics
2015 Median Household Income (Esri)
> 108,605.200000000001
86,595.40000000001
64,585.600000000006
42,575.8
< 20,566
EQUAL INTERVAL CLASSIFICATION

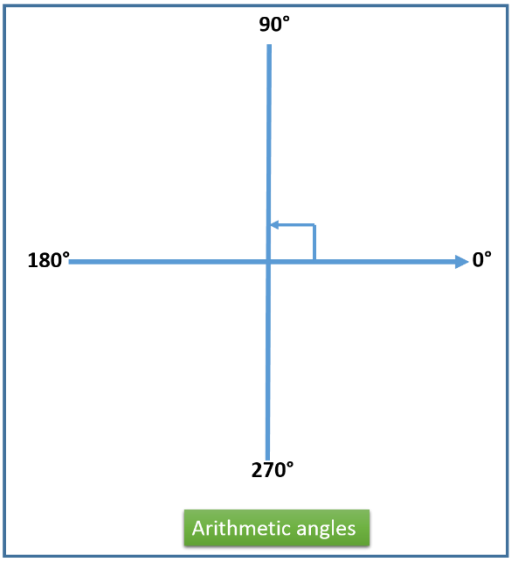

Vancouver
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of
Miami
County Demogrpahics
2015 Median Household Income (Esri)
> 74,277
57,833
47,125
37,808
< 20,566
NATURAL BREAKS CLASSIFICATION

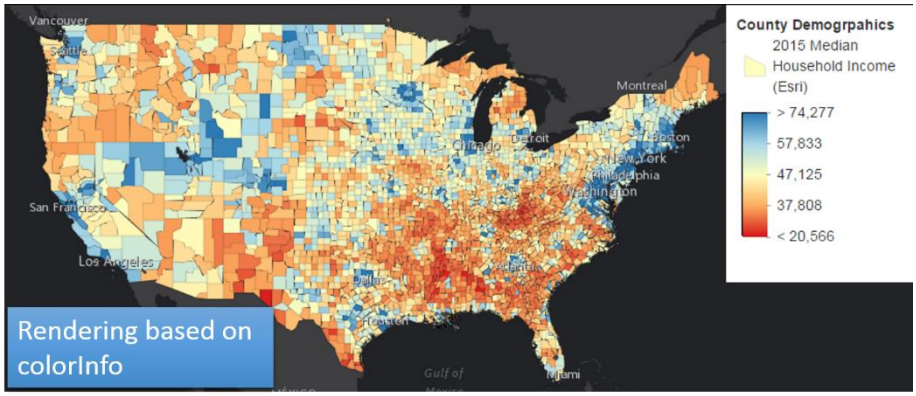

Vancouver
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Houston
Gulf of
Mexico
Miami
County Demogrpahics
2015 Median Household Income (Esri)
> 54,105
47,007
41,333
36,545
< 20,566
QUANTILE BREAKS CLASSIFICATION


Vancouver
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Houston
Gulf of
Mexico
Miami
Havana
County Demogrpahics
2015 Median Household Income (Esri)
> 77,599.04055898241
65,036.73111235413
52,474.42166572585
39,912.11221909757
27,349.802772469295
< 20,566
STANDARD DEVIATION CLASSIFICATION

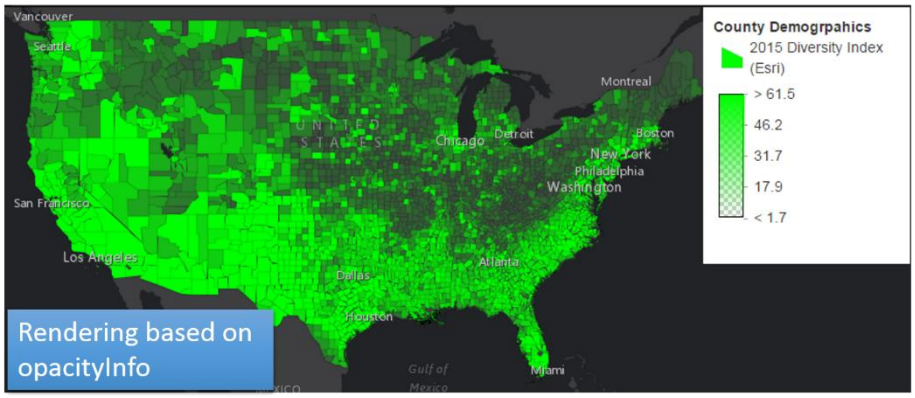

Vancouver
Seattle
Montreal
UNITED STATES
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Atlanta
Dallas
Houston
Gulf of Mexico
MÉXICO
Miami
County Demogrpahics
2015 Diversity Index (Esri)
> 61.5
46.2
31.7
17.9
< 1.7


N- 0°
W- 270°
E- 90°
S- 180°
Geograpahic

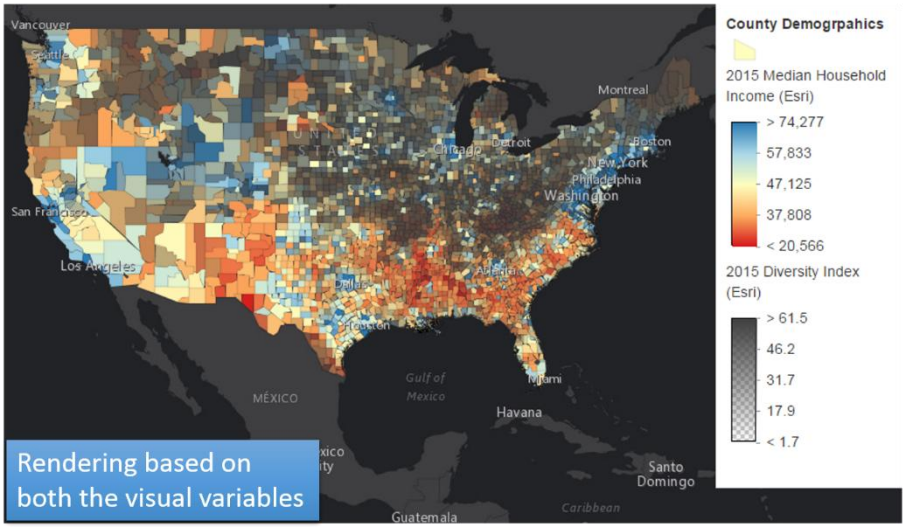

90°
180°
0°
270°
Arithmetic angles

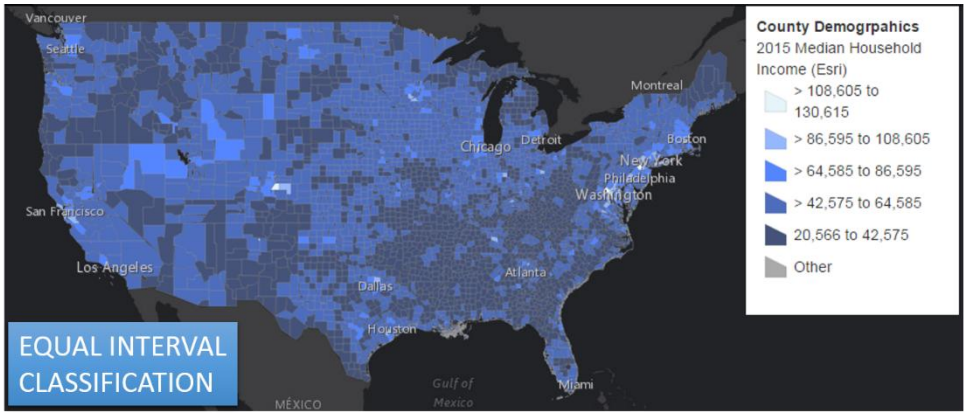

Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Miami
Gulf of Mexico
County Demogrpahics
2015 Median Household Income (Esri)
> 74,277
57,833
47,125
37,808
< 20,566
Rendering based on colorInfo

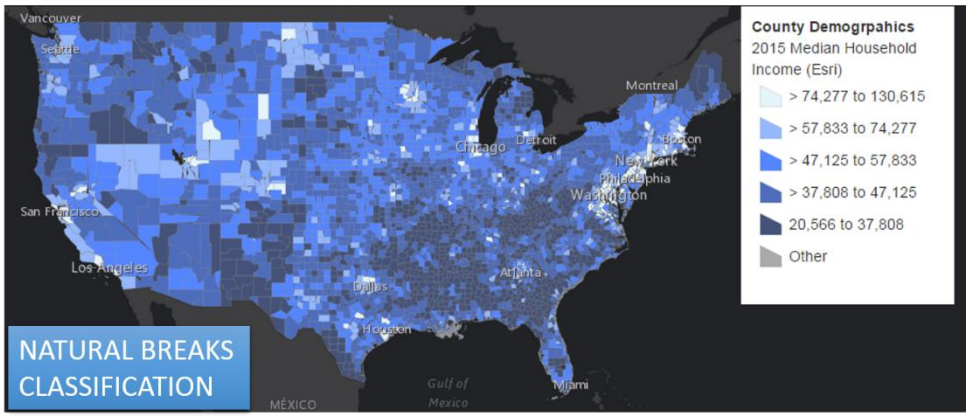
X

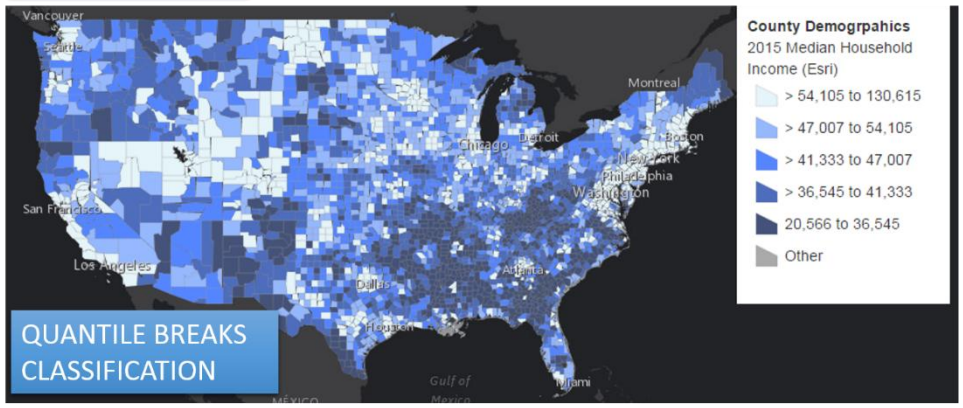

Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Miami
Gulf of Mexico
County Demogrpahics
2015 Diversity Index (Esri)
> 61.5
46.2
31.7
17.9
< 1.7
Rendering based on opacityInfo

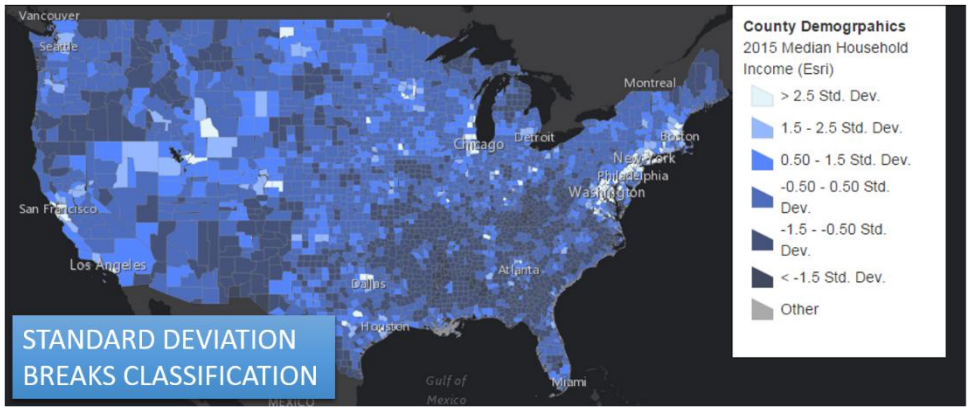
=


Vancouver
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Miami
Gulf of Mexico
MÉXICO
Havana
Santo Domingo
Caribbean
Guatemala
County Demogrpahics
2015 Median Household Income (Esri)
> 74,277
57,833
47,125
37,808
< 20,566
2015 Diversity Index (Esri)
> 61.5
46.2
31.7
17.9
< 1.7
Rendering based on both the visual variables


Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of Mexico
Miami
MÉXICO
County Demogrpahics
2015 Median Household Income (Esri)
> 108,605 to 130,615
> 86,595 to 108,605
> 64,585 to 86,595
> 42,575 to 64,585
20,566 to 42,575
Other
EQUAL INTERVAL CLASSIFICATION


Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of Mexico
Miami
MÉXICO
County Demogrpahics
2015 Median Household Income (Esri)
> 74,277 to 130,615
> 57,833 to 74,277
> 47,125 to 57,833
> 37,808 to 47,125
20,566 to 37,808
Other
NATURAL BREAKS CLASSIFICATION


Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of Mexico
Miami
County Demogrpahics
2015 Median Household Income (Esri)
> 54,105 to 130,615
> 47,007 to 54,105
> 41,333 to 47,007
> 36,545 to 41,333
20,566 to 36,545
Other
QUANTILE BREAKS CLASSIFICATION


Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of Mexico
Miami
County Demogrpahics
2015 Median Household Income (Esri)
> 2.5 Std. Dev.
1.5 - 2.5 Std. Dev.
0.50 - 1.5 Std. Dev.
-0.50 - 0.50 Std. Dev.
-1.5 - -0.50 Std. Dev.
< -1.5 Std. Dev.
Other
STANDARD DEVIATION BREAKS CLASSIFICATION

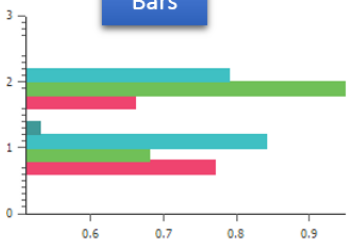
Chapter 8: Advanced Map Visualization and Charting Libraries

Example Dojo Chart Types

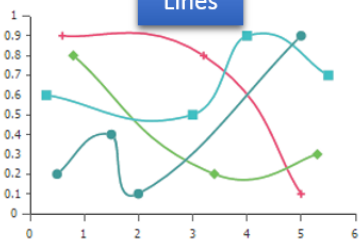
Choose a theme from the list below, a theme will be loaded dynamically, and the charts will be rendered using it.

Available themes: Bahamation ▼ use suggested page style Back to the Theme Previewer »»

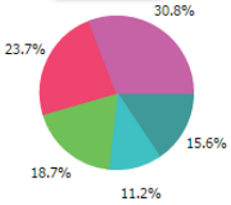
Bars



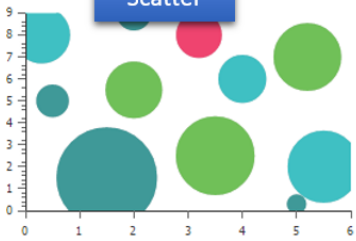
Lines



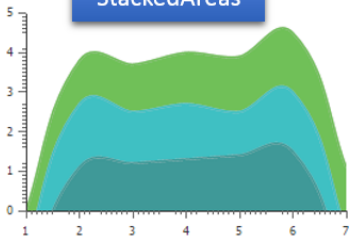
Pie

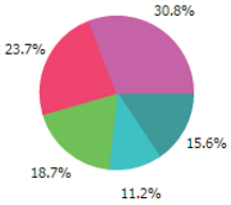


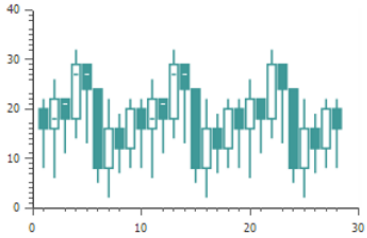
Scatter



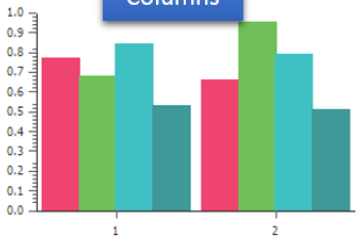
StackedAreas

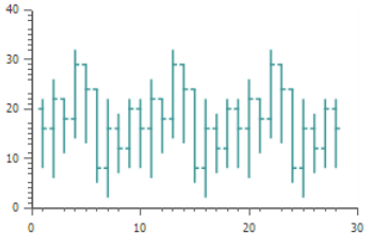


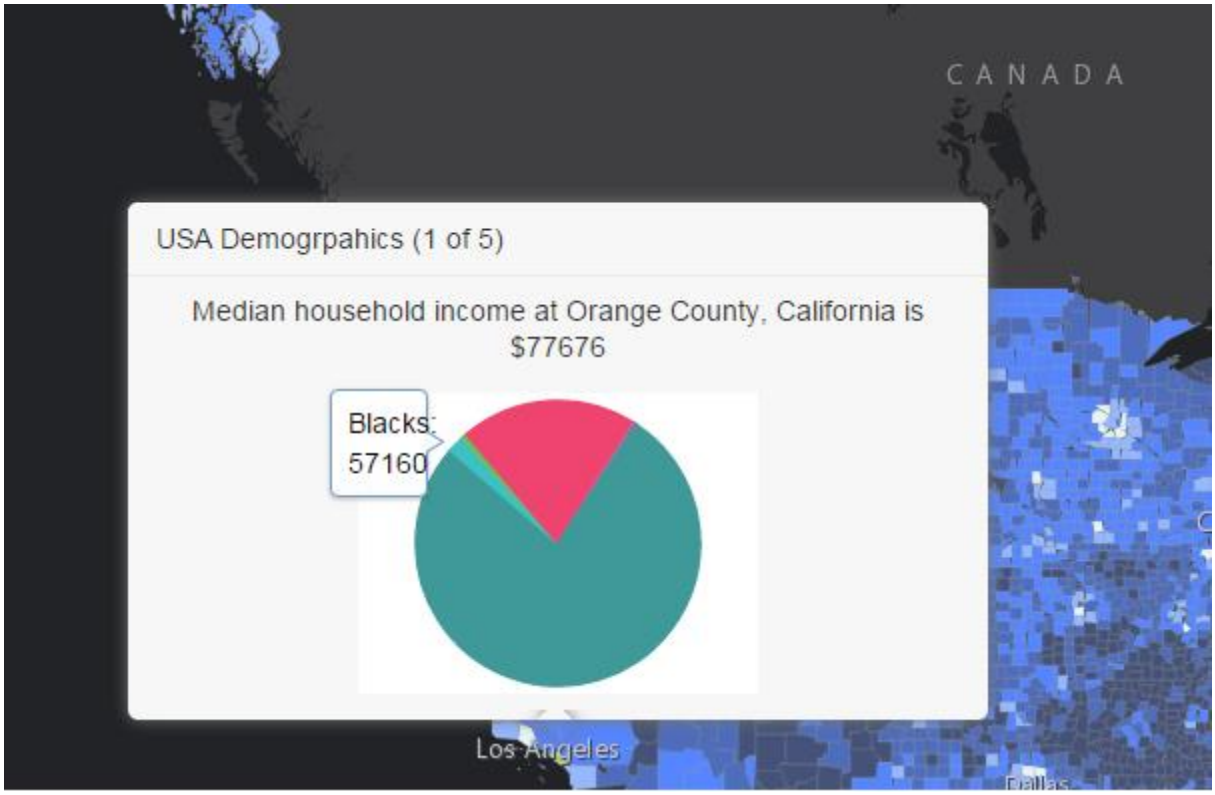


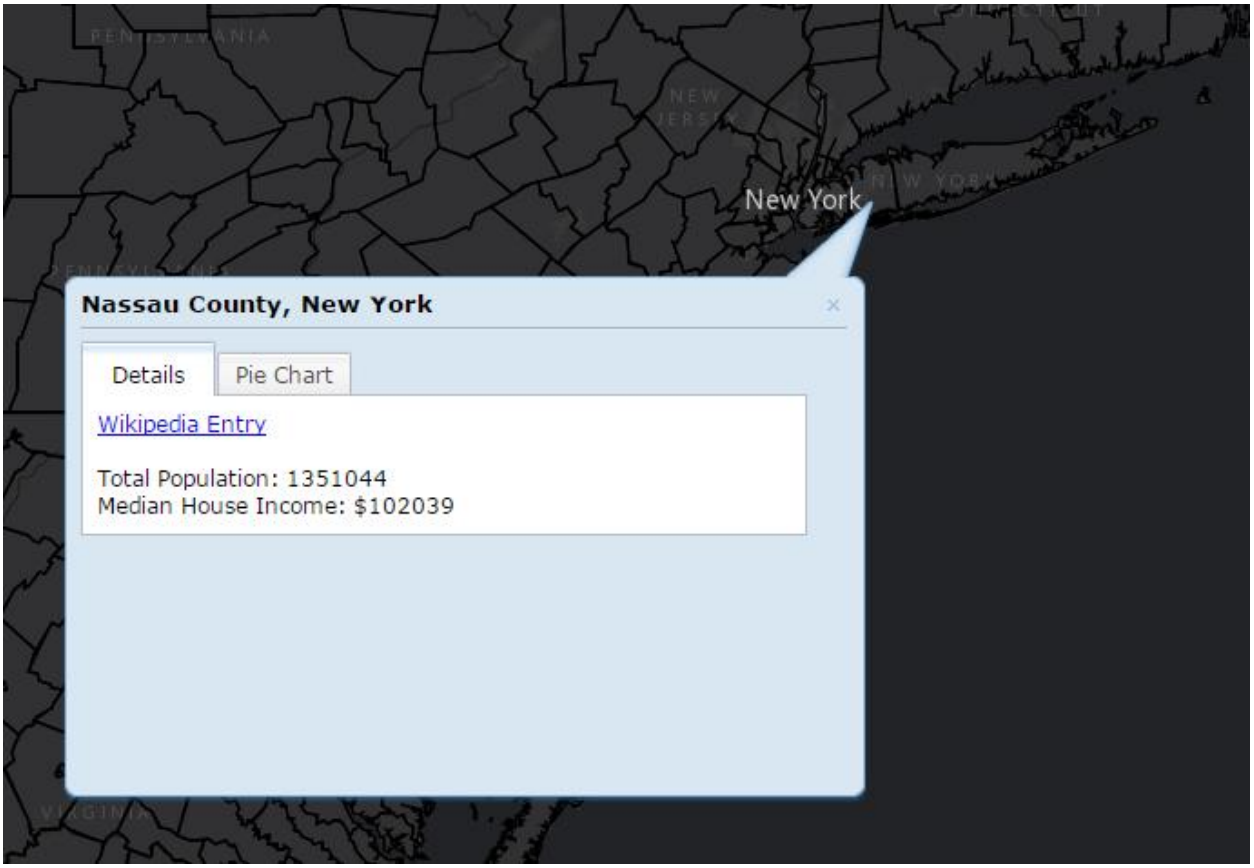


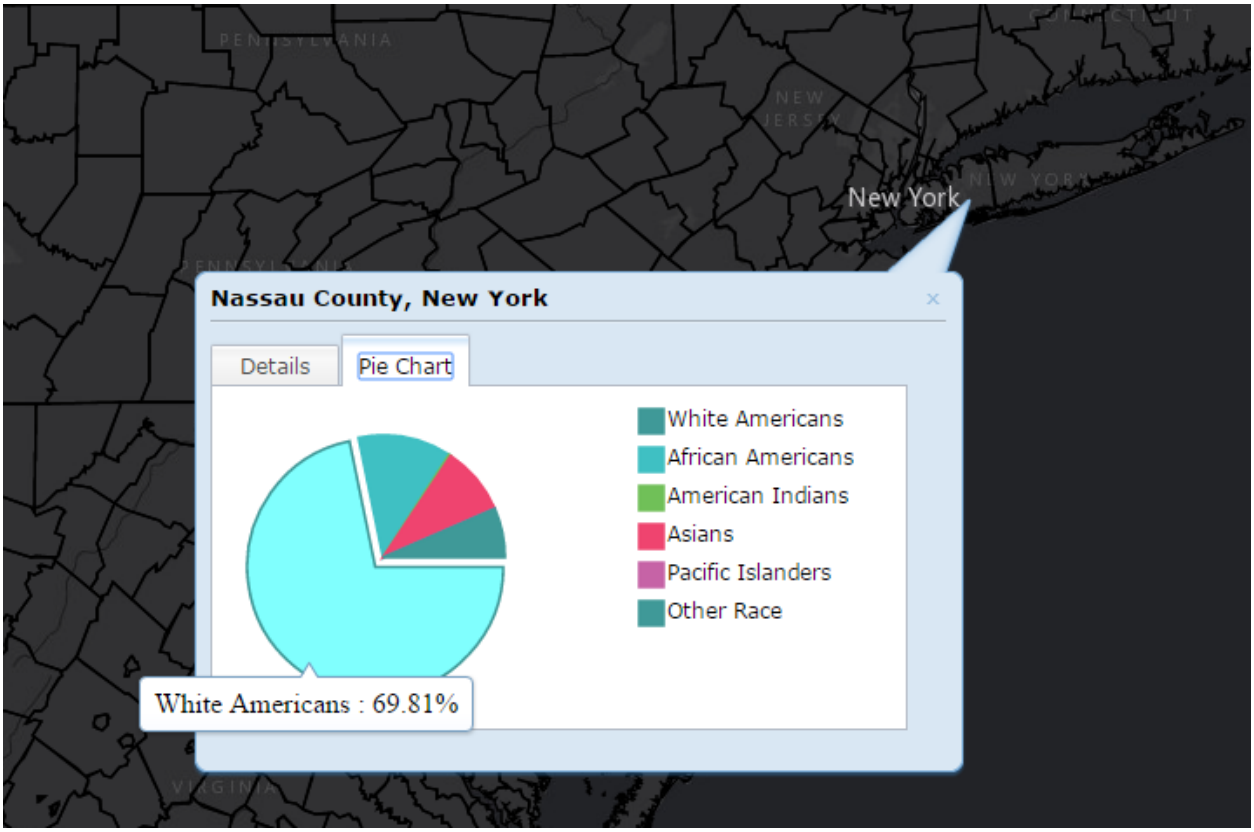
Columns

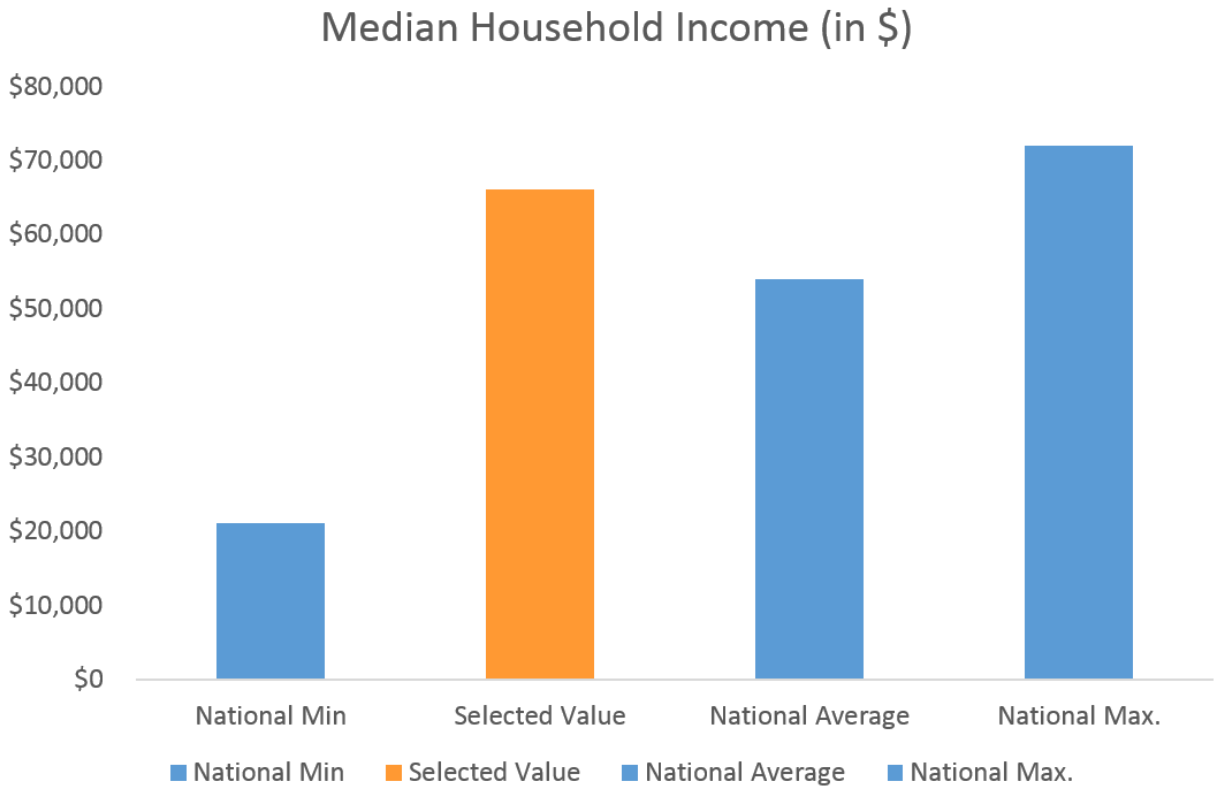


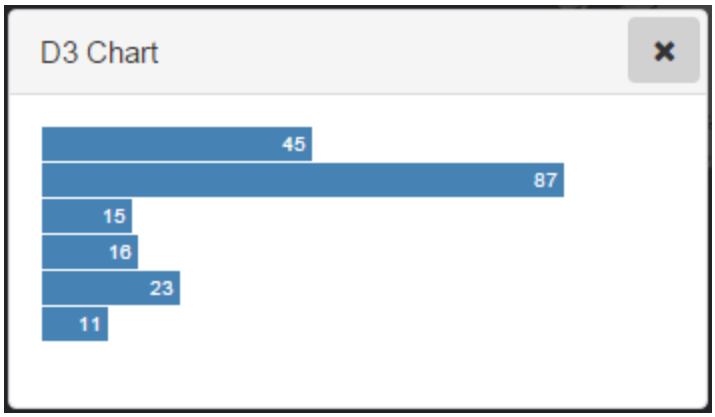


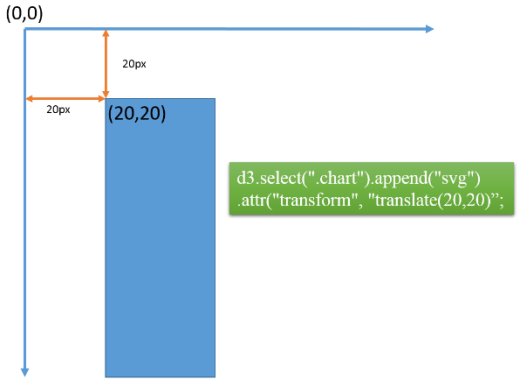

CANADA
USA Demogrpahics (1 of 5)
Median household income at Orange County, California is $77676
Blacks: 57160
Los Angeles

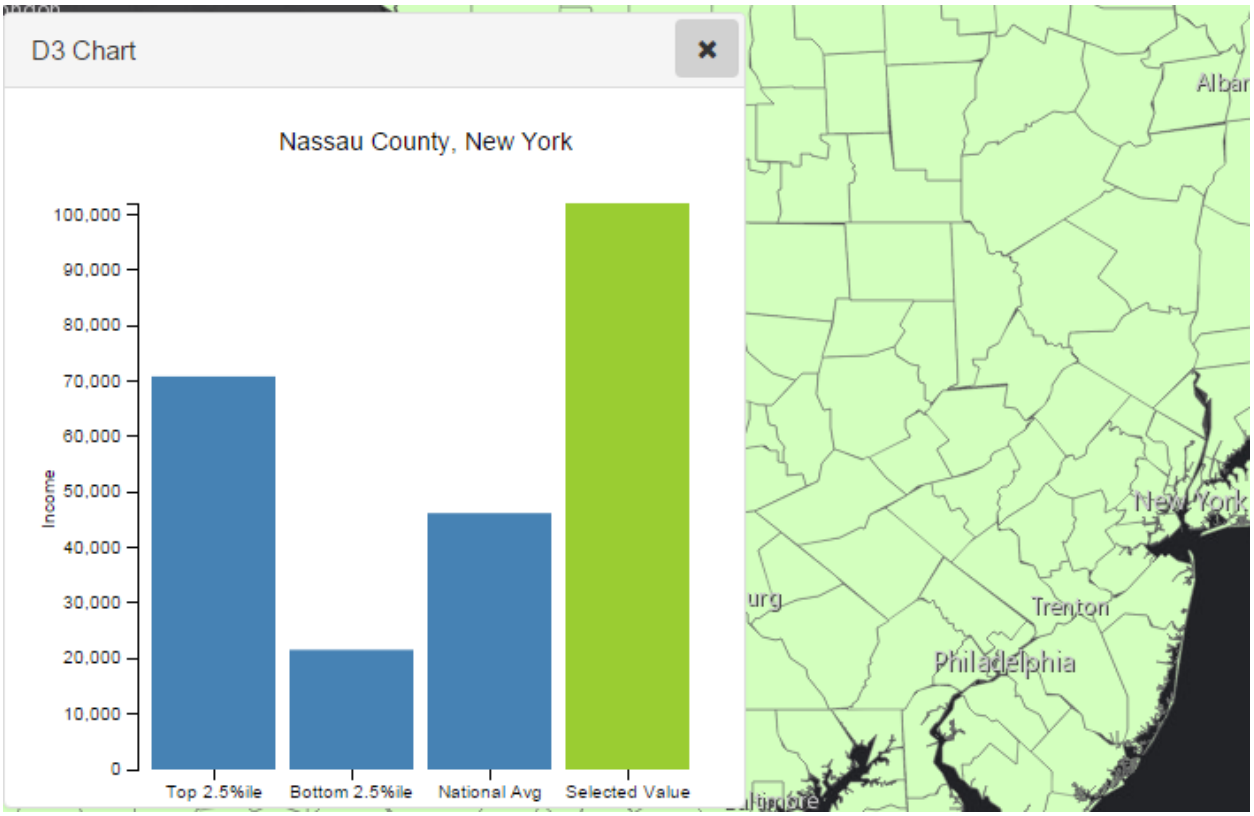

New York
Nassau County, New York
Details
Pie Chart
Wikipedia Entry
Total Population: 1351044
Median House Income: $102039

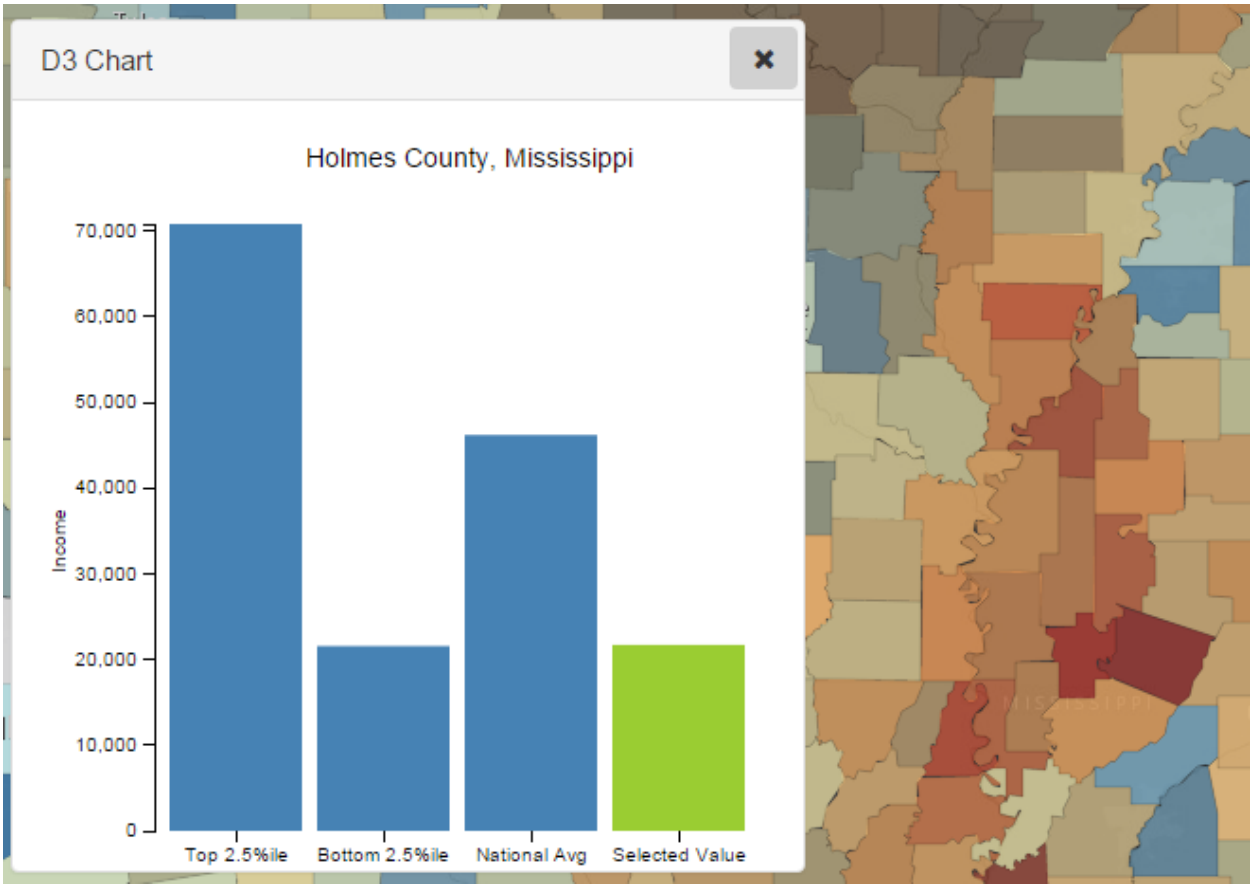

New York
Nassau County, New York
Details
Pie Chart
White Americans
African Americans
American Indians
Asians
Pacific Islanders
Other Race
White Americans : 69.81%

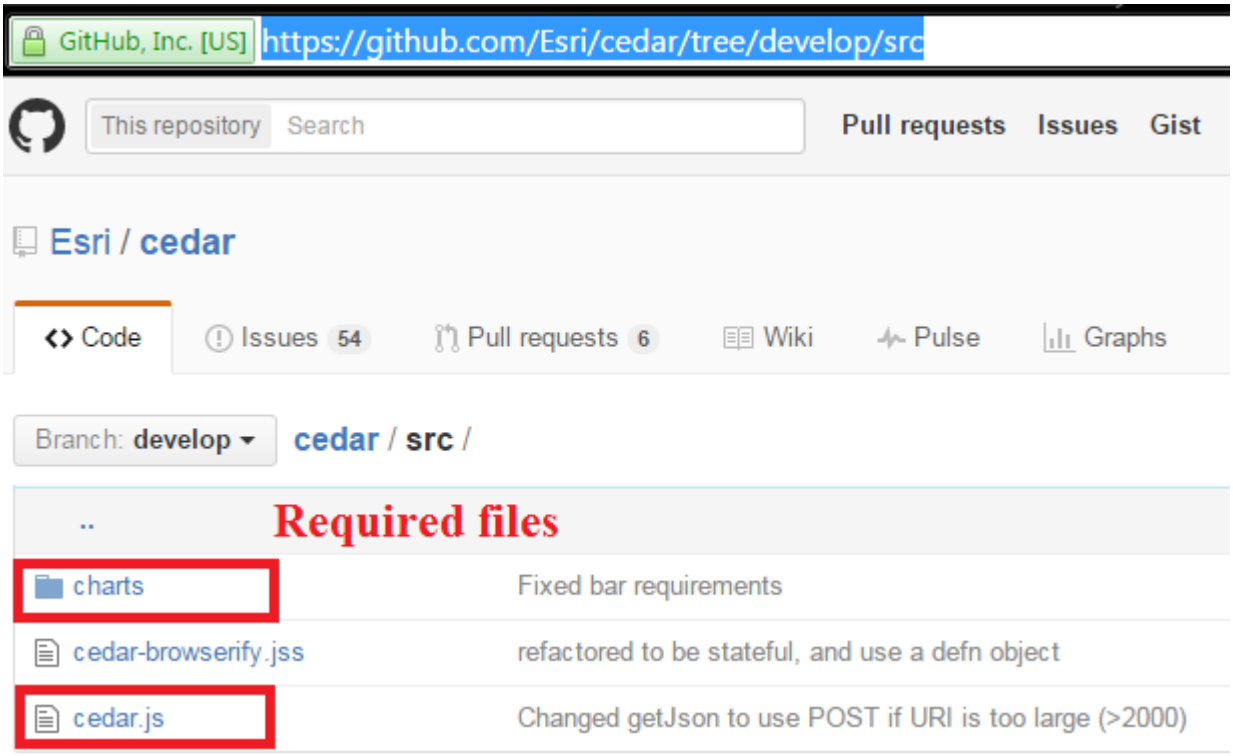

Median Household Income (in $)
$80,000
$70,000
$60,000
$50,000
$40,000
$30,000
$20,000
$10,000
$0
National Min
Selected Value
National Average
National Max.
National Min
Selected Value
National Average
National Max.

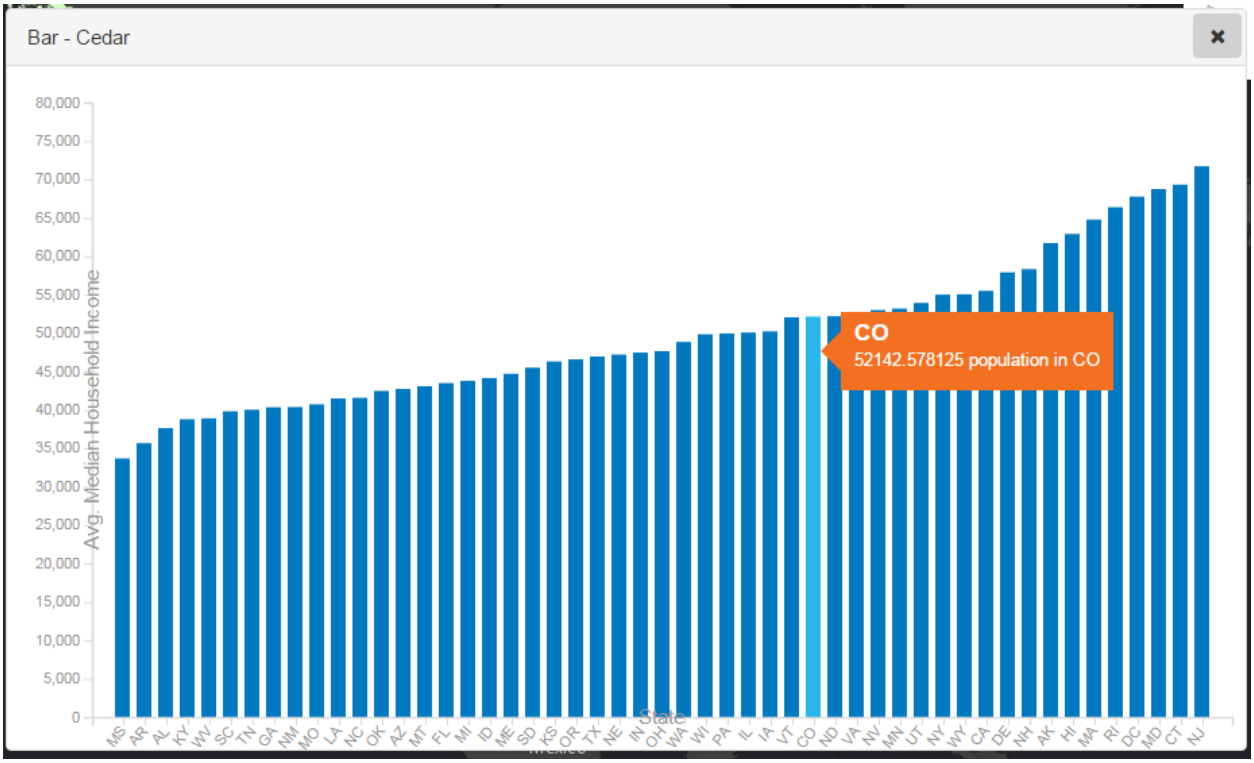

D3 Chart
45
87
15
16
23
11

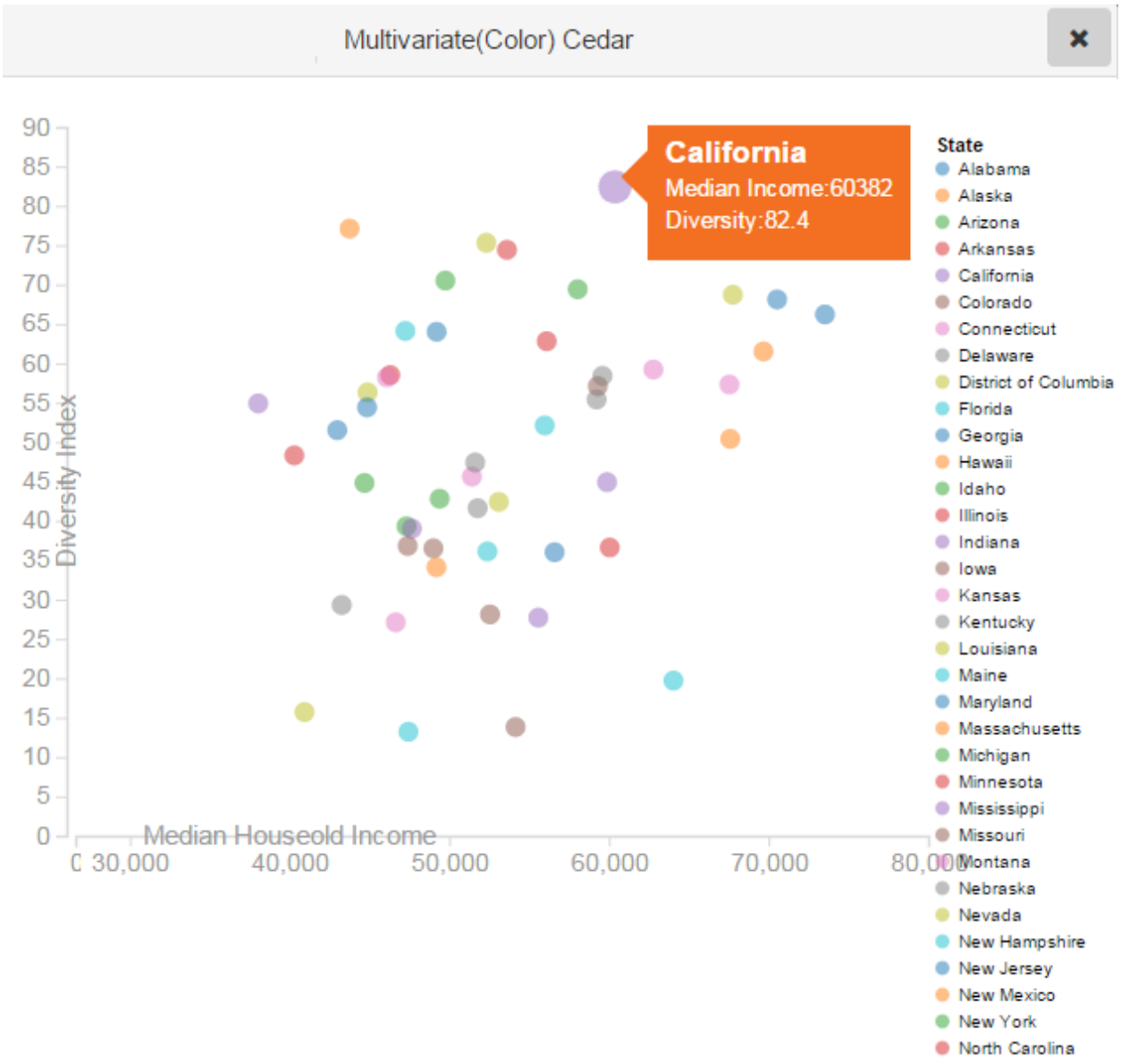

(0,0)
20px
20px
(20,20)
d3.select(".chart").append("svg")
.attr("transform", "translate(20,20)");

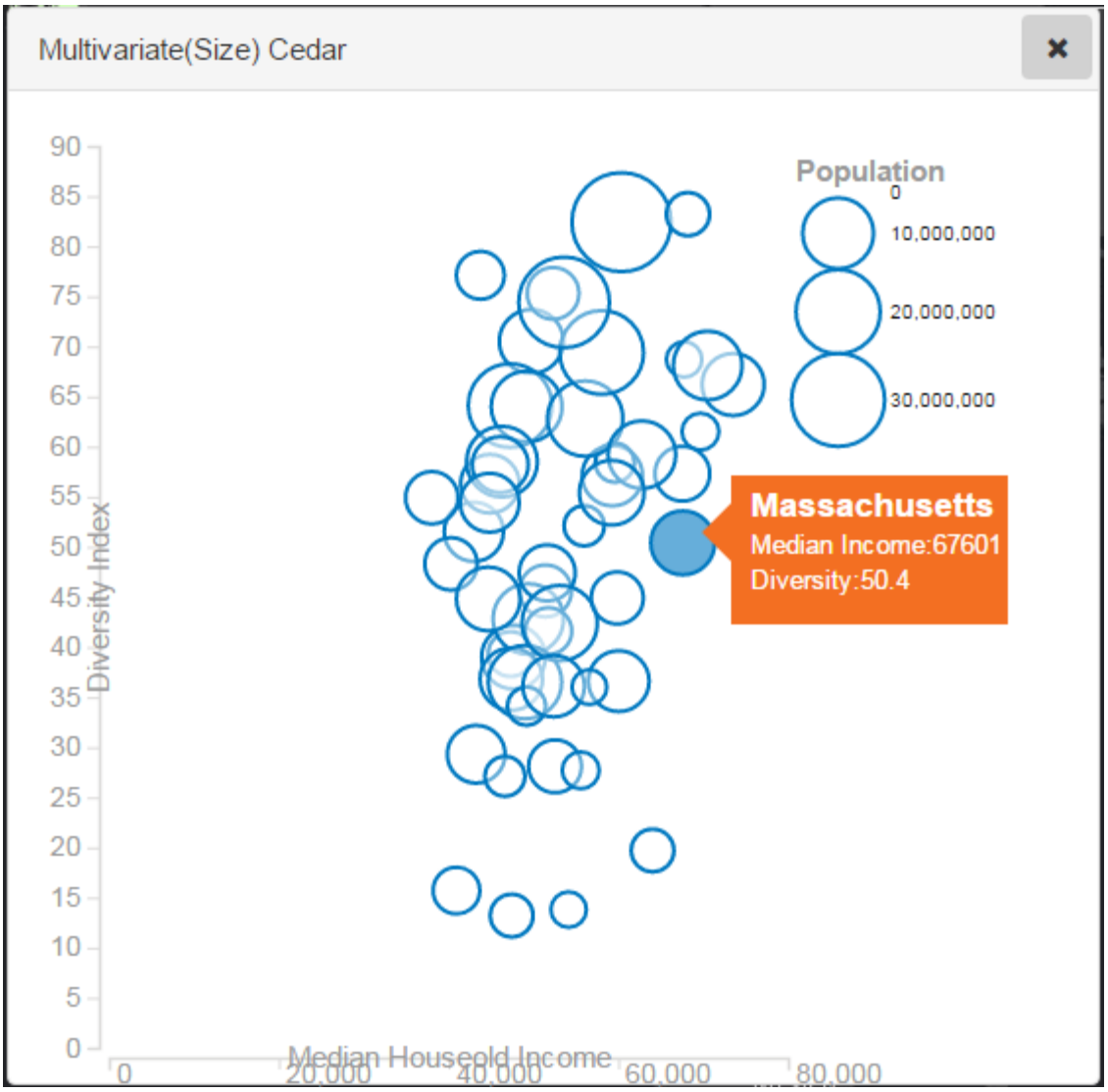

D3 Chart
Nassau County, New York
Income
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Top 2.5%ile
Bottom 2.5%ile
National Avg
Selected Value
Trenton
Philadelphia


D3 Chart
Holmes County, Mississippi
Income
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Top 2.5%ile
Bottom 2.5%ile
National Avg
Selected Value


GitHub, Inc. [US]
https://github.com/Esri/cedar/tree/develop/src
This repository
Search
Pull requests
Issues
Gist
Esri / cedar
Code
Issues 54
Pull requests 6
Wiki
Pulse
Graphs
Branch: develop
cedar / src /
..
Required files
charts
Fixed bar requirements
cedar-browserify.jss
refactored to be stateful, and use a defn object
cedar.js
Changed getJson to use POST if URI is too large (>2000)


Bar - Cedar
80,000
75,000
70,000
65,000
60,000
55,000
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Avg. Median Household Income
MS AR AL KY WV SC TN GA NM MO LA NC OK AZ MT FL MI ID ME SD KS OR TX NE IN OH WA WI PA IL IA VT CO ND VA NV MN UT NY WY CA DE NH AK HI MA RI DC MD CT NJ
State
CO
52142.578125 population in CO


Multivariate(Color) Cedar
California
Median Income:60382
Diversity:82.4
Diversity Index
Median Houseold Income
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
30,000
40,000
50,000
60,000
70,000
80,000
State
Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
District of Columbia
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
Kansas
Kentucky
Louisiana
Maine
Maryland
Massachusetts
Michigan
Minnesota
Mississippi
Missouri
Montana
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
North Carolina


Multivariate(Size) Cedar
Population
0
10,000,000
20,000,000
30,000,000
Massachusetts
Median Income:67601
Diversity:50.4
Diversity Index
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
Median Household Income
0
20,000
40,000
60,000
80,000

Chapter 9: Visualization with Time Aware Layers

HasZ: false

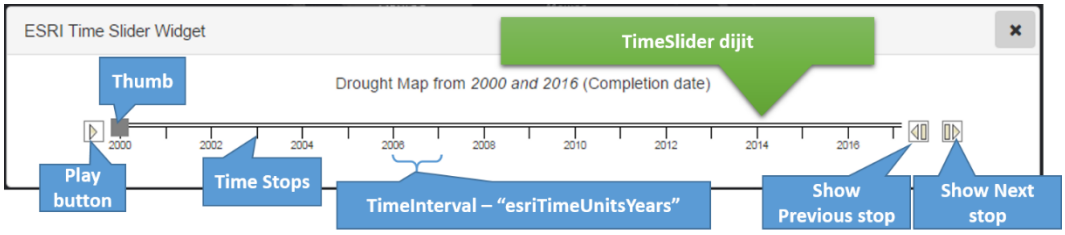
HasM: false

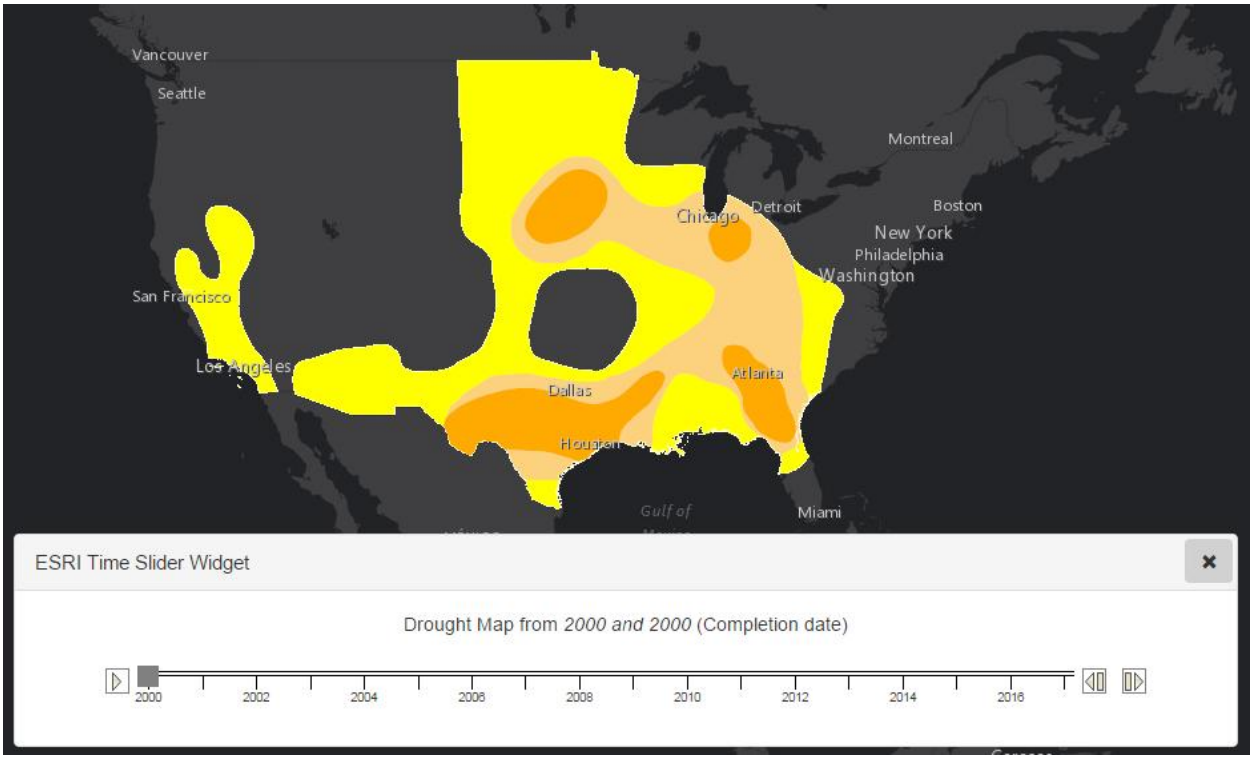
Time Info:

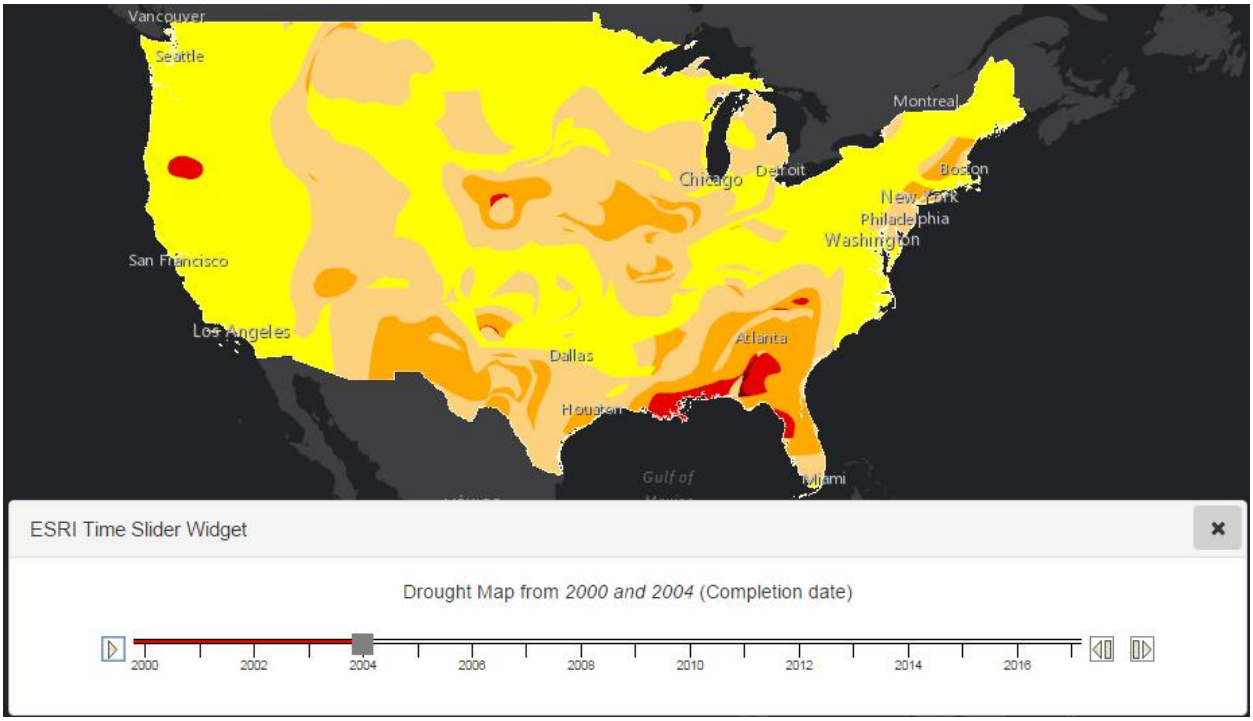
Start Time Field: ddate
End Time Field: null
Track ID Field: null
Time Extent:
[2000/01/04 00:00:00 UTC, 2016/02/02 00:00:00 UTC]

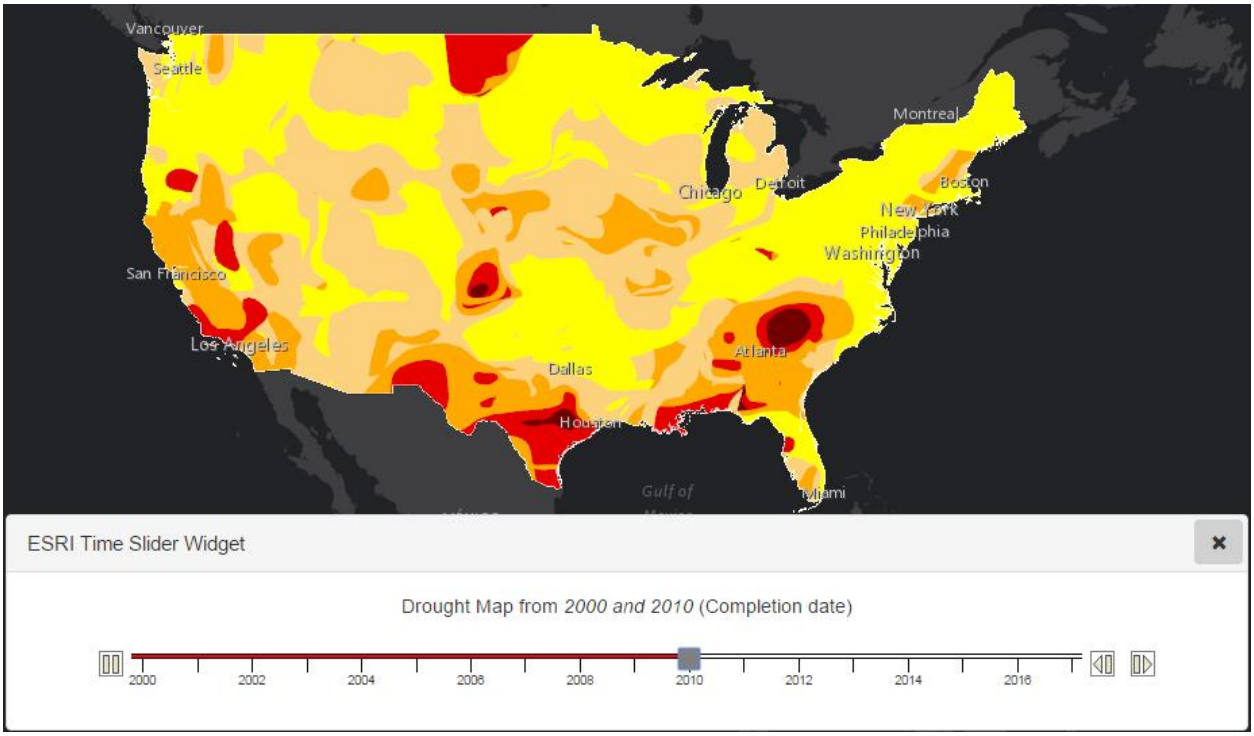
Time Reference: N/A
Time Interval: 1
Time Interval Units: esriTimeUnitsWeeks
Has Live Data: true
Export Options:
Use Time: true
Time Data Cumulative: false
Time Offset: null *(null)*

Has Attachments: false



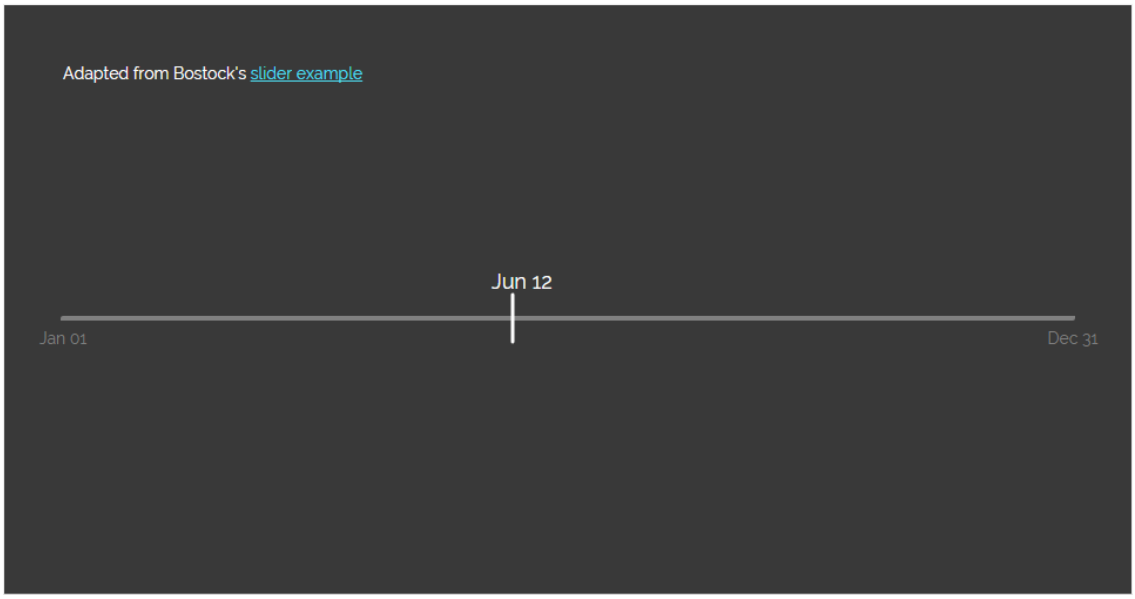

Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of
Miami
ESRI Time Slider Widget
Drought Map from 2000 and 2000 (Completion date)
2000
2002
2004
2006
2008
2010
2012
2014
2016

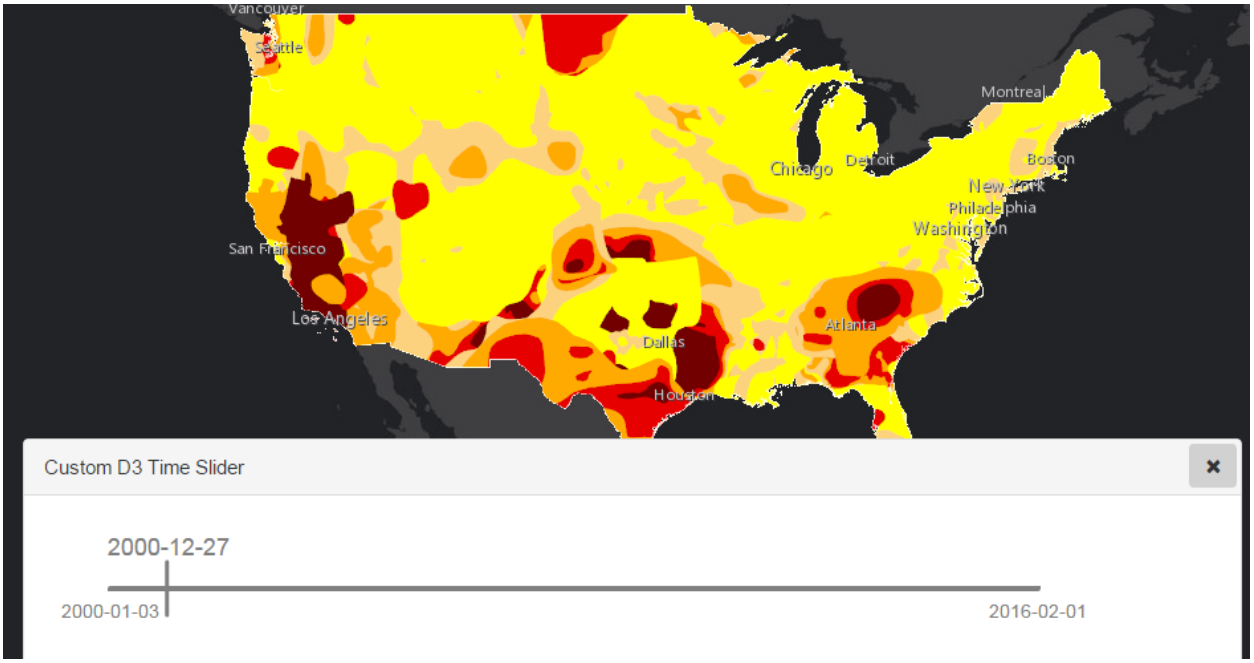

Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Gulf of
Miami
ESRI Time Slider Widget
Drought Map from 2000 and 2004 (Completion date)
2000
2002
2004
2006
2008
2010
2012
2014
2016

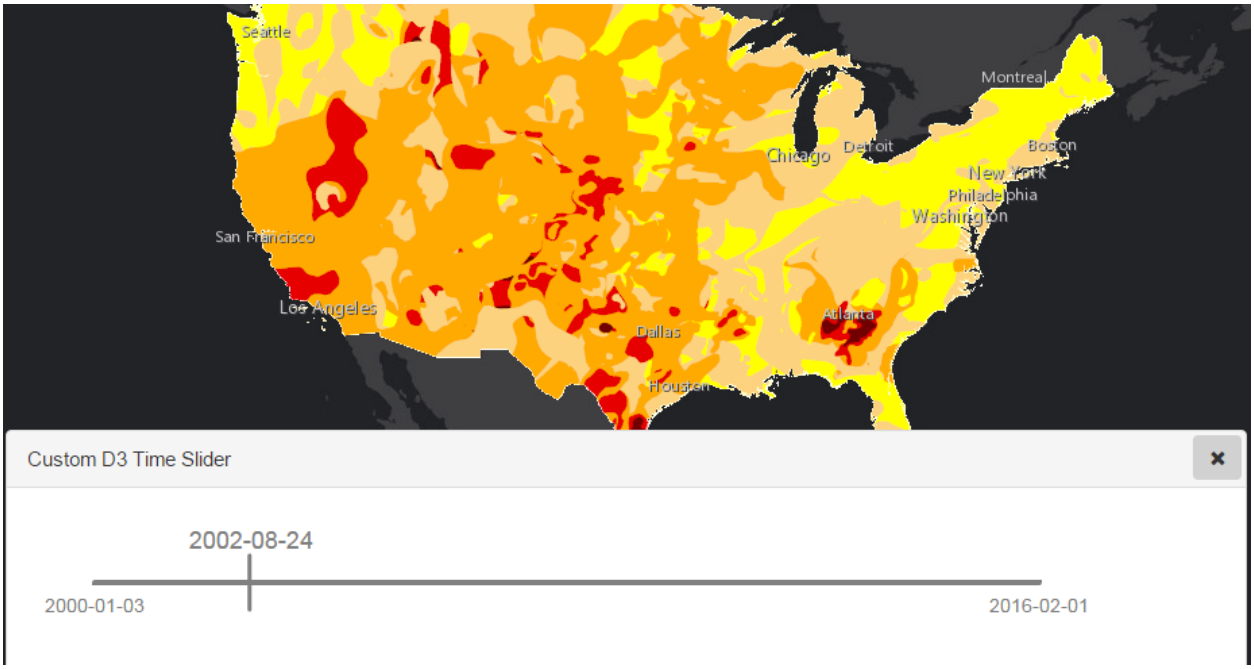


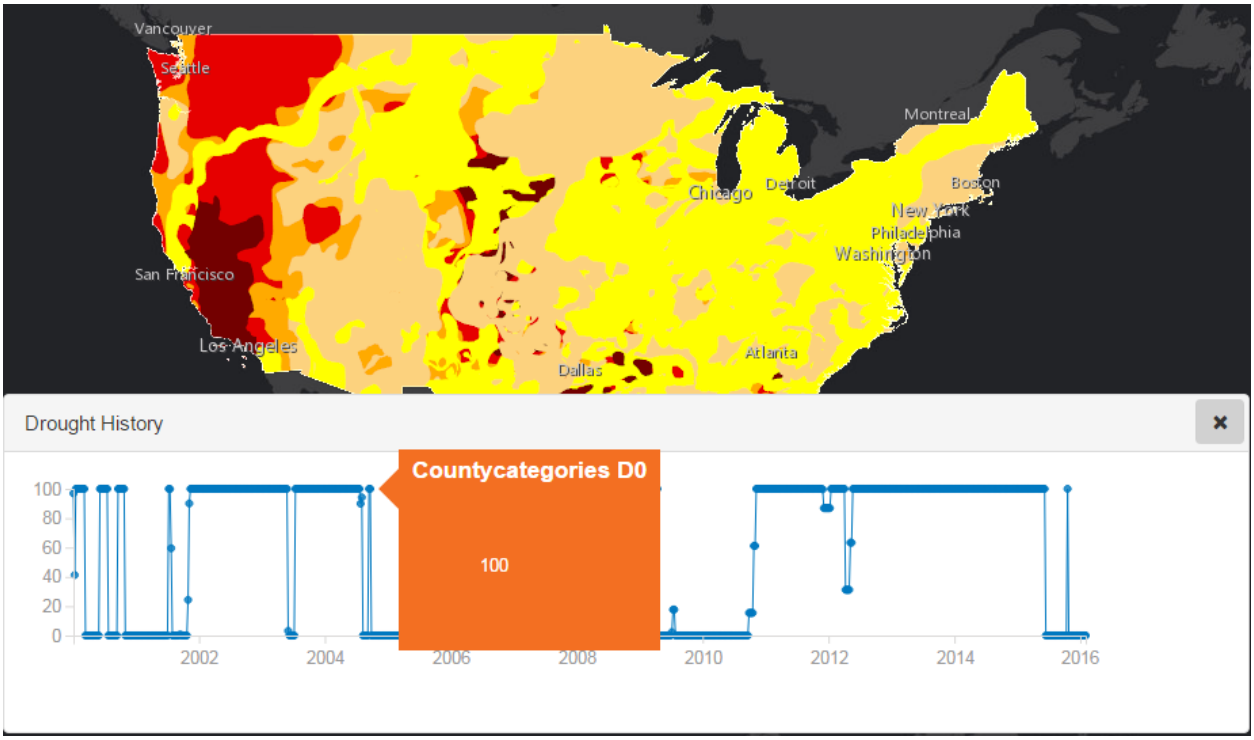
bl.ocks.org/zanarmstrong/ddff7cd0b1220bc68a58

slider: days of the year




Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Custom D3 Time Slider
2000-12-27
2000-01-03
2016-02-01


Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Houston
Custom D3 Time Slider
2002-08-24
2000-01-03
2016-02-01


Vancouver
Seattle
Montreal
Chicago
Detroit
Boston
New York
Philadelphia
Washington
San Francisco
Los Angeles
Dallas
Atlanta
Drought History
Countycategories D0
100
100
80
60
40
20
0
2002
2004
2006
2008
2010
2012
2014
2016