

Week 10 - Module 2b - OpenLayers 3 Javascript Framework

Overview

- Capabilities
- OpenLayers = Javascript (by example)

OpenLayers Capabilities

- Support for Multiple basemaps: *BingMaps*, *MapQuest*, *OpenStreetMap*, *Stamen*
- Model for interaction with multiple map server platforms: *ArcGIS* (REST), *MapServer*, *GeoServer*
- Support for key OGC standards: *WMS*, *WMTS*, *WFS*, *GML*, *KML*
- Multiple control types: *Attribution*, *Zoom*, *Overview*, *Scale*, *FullScreen*, *Graticule*
- Custom styled features with associated attributes: *Curve*, *LinearRing*, *LineString*, *MultiLineString*, *MultiPoint*, *MultiPolygon*, *Point*, *Polygon*
- Support for many formats for data read and write: *ATOM*, *GML* (1, 2, 3), *GeoJSON*, *GPX*, *KML*, *WKT*, any many others
- Open Source, enabling modification and integration into other systems (e.g. [GeoExt](#))

Distinguishing Characteristics Between OpenLayers and Google Maps

- Greater emphasis on client-side processing - Client access and rendering of data files that Google's servers otherwise take care of (pros & cons to this approach)
- Integrated support for OGC services and their products
- Support for different projections (adds complexity)
- API more rich in options ==> more complexity

Resources

[OpenLayers Home Page](#)

[Application Programming Interface \(API\) Reference](#)

[Examples](#)

Demonstrations and Examples

- [Basic Mapper](#) (with MapQuest base map ([source](#)))

OpenLayers_01.html

```
1 <html>
2
3 <head>
4     <link rel="stylesheet" href="css/OpenLayers_01.css" type="text/css">
5     <link rel="stylesheet" href="http://openlayers.org/en/v3.14.2/css/ol.css" type="text/css">
6     <!-- you can use this line if you want to use the hosted version instead of the local copy -->
7     <!-- <script src="http://openlayers.org/en/v3.14.2/build/ol.js" type="text/javascript"></script> -->
8     <script src="js/v3.14.2/build/ol.js" type="text/javascript"></script>
9 </head>
10
```

```

11 <body>
12   <h1>This is a very simple OpenLayers 3 sample map page</h1>
13
14   <div id='map'><!-- This is where the map will be displayed --></div>
15
16   <!-- import the external Javascript file with the map configuration code -->
17   <script src='js/OpenLayers_01.js' type='text/javascript'></script>
18 </body>
19
20 </html>

```

OpenLayers_01.js

```

1 // OpenLayers_01.js
2
3 var myMap = new ol.Map({
4   target: 'map',
5   layers: [
6     new ol.layer.Tile({
7       source: new ol.source.MapQuest({layer: 'sat'})
8     })
9   ],
10  view: new ol.View({
11    center: ol.proj.fromLonLat([-106.624083,35.08427]),
12    zoom: 18
13  })
14 });

```

OpenLayers_01.css

```

1 /* OpenLayers_01.css */
2
3 body {
4   width:100%;
5   height:100%
6 }
7
8 #map {
9   width:600px;
10  height:400px
11 }

```

Demonstration and Examples - Online Resources

- [Mapper](#) ([source](#)) with a variety of base maps (MapQuest, Stamen, OSM) and basic layer selection
- Basic Mapper with Controls: [No Controls](#) ([source](#)), [Customized Controls](#) ([source](#))

Next Week - Custom Features and WMS Layers

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