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
```

```html
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

```javascript
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

```css
1   /* OpenLayers_01.css */
2
3   body {
4       width:100%;
5       hwight: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