Week 10 - Module 2b - OpenLayers 3 Javascript Framework

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Overview

- Capabilities
- OpenLayers = Javascript (by example)

OpenLayers Capabilities

- Support for Multiple basemaps: *BingMaps*, *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 Open Street Map base map (source))

OpenLayers_01.html

```
<html>

<head>
    <link rel="stylesheet" href="css/OpenLayers_01.css" type="text/css">
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/openlayers/4.0.1/ol.css" type="
    <script src="https://cdnjs.cloudflare.com/ajax/libs/openlayers/4.0.1/ol.js" type="text/javascript">
</head>

<body>
    <h1>This is a very simple OpenLayers 4 sample map page</h1>

    <div id='map'><!-- This is where the map will be displayed --></div>

    <!-- import the external Javascript file with the map configuration code -->
    <script src="js/OpenLayers_01.js" type="text/javascript"></script>
</body>

</html>
```

OpenLayers_01.js

```
// OpenLayers_01.js

var myMap = new ol.Map({
    target: 'map',
    layers: [
        new ol.layer.Tile({
            source: new ol.source.OSM()
        })
    ],
    view: new ol.View({
        center: ol.proj.fromLonLat([-106.624083,35.08427]),
        zoom: 18
        })
    });
```

OpenLayers_01.css

```
/* OpenLayers_01.css */

body {
    width:100%;
    height:100%
}

#map,.map {
    width:600px;
    height:400px;
}

#map_selector li {
    cursor:pointer;
    width:350px;
```

```
}

#map_selector li:hover {
    background-color: yellow;
}



#map div.ol-viewport div.ol-overlaycontainer-stopevent div.ol-overviewmap.ol-unselectable.ol-control.ol
    top: 200px;
    bottom: 300px;
}
```

Demonstration and Examples - Online Resources

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

Next Week - Custom Features and WMS Layers
