IDCE 30262 Web Mapping and Open-Source GIS

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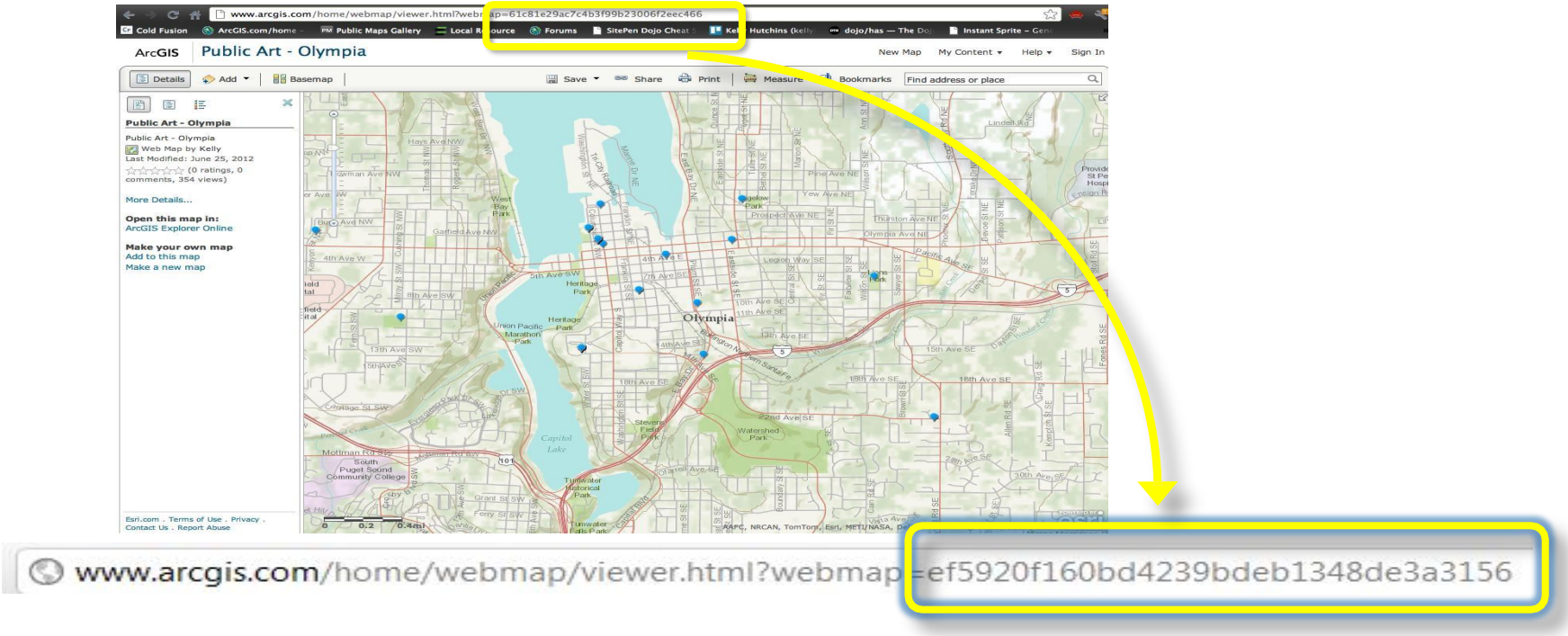
ArcGIS API Part 2

Reminders

Quick Review

Using a map from arcgis.com to create an app



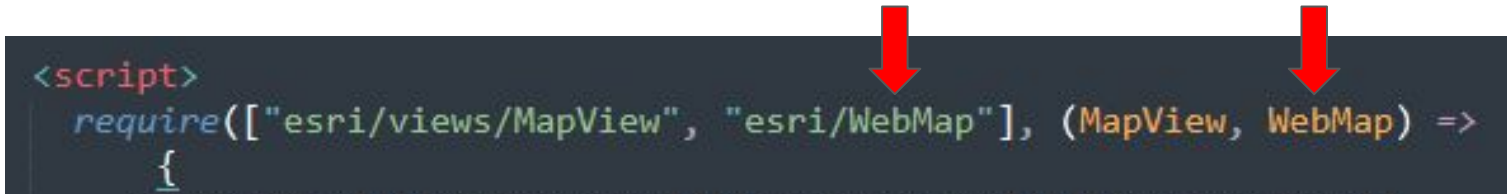
http://www.arcgis.com/home/webmap/viewer.html?webmap=ef9c7fbda731474d98647bebb4b33c20

Before we start!

- ★ Make an HTML file
- ★ Add the js and css for ArcGIS API
- ★ Add the required modules for views and Mapviews
- ★ Add an empty map constructor
- ★ Add a view constructor with map and container
- ★ Add a div in the body
- ★ Add some style capable of retracing the id in the

Working with ArcGIS Online

Calling a [webmap]



Things to know about webmap constructor

- Creates a new WebMap instance.
- A WebMap must reference a PortalItem ID that represents a WebMap saved to arcgis.com.
- To load a WebMap from a portal, set the portal url with esriConfig.portalUrl.

```
const webmap = new WebMap({
  portalItem: {
    // autocasts as new PortalItem()
    id: "f2e9b762544945f390ca4ac3671cfa72"
  }
});
```

e691172598f04ea8881cd2a4adaa45ba

Set the WebMap instance to the map property in a MapView.

What is changed compared to 2D and 3D map?

Call the web map that you created!

And change the ID to try other web maps:

https://developers.arcgis.com/javascript/latest/sample-code/?tagged=WebMap

More examples:

//id:"e691172598f04ea8881cd2a4adaa45ba" //This webmap is available without log-in

//id: "ef9c7fbda731474d98647bebb4b33c20" // This webmap requires log-in

//id: "8e42e164d4174da09f61fe0d3f206641" //Try it

// id: "d582a9e953c44c09bb998c7d9b66f8d4" //Try this

Living Atlas of the World

https://livingatlas.arcgis.com/en/browse/#d=1&rgnCode=US

And search for Web Maps

Setting map attributes out of constructor!

- **You can also set the attributes out of constructor**
  - **Overwrites the previous one**

```
view.center = [-112, 38];
 view.zoom = 5;
 view.scale = 12000;
```

➔ In Class Activity

Set the initial extent to the U.S by changing the view parameters

Another way to set the basemap

- Similarly, The way we set the basemap is through the map constructor

```
require([
  "esri/Map",
  "esri/views/MapView"
], function(Map, MapView) {
  var map = new Map({
    basemap: "streets"
  });
});
```

```
map.basemap = "streets";
map["basemap"] = "streets";
```

Let’s load a shapefile

- ★ Create a basemap
- ★ Add the API Key
- ★ Go to your developer account
- ★ Go to Manage All Hosted Layers
- ★ Click import
- ★ Choose the zip file of U.S counties
- ★ Add description
- ★ Click add layer

Week 10- ArcGIS Javascript API | Zoom to extent of all features | S | MapView | API Reference | ArcGI | Sandbox | Sample Code | ArcGIS | Counties | ArcGIS Developer

https://developers.arcgis.com/layers/30b3e3fcc1bc4cc7b389b7bf4efdc373

Dashboard / Layers

Dashboard | API keys | OAuth 2.0 | Layers | Downloads

Counties

U.S. Counties (Generalized) provides demographic information and generalized county boundaries to improve draw performance and be used effectively at a national level.

Feature Layer (hosted)
Private (Authentication required)
Size: 5.15 MB

Created October 27, 2021
Modified October 27, 2021

Item ID: 30b3e3fcc1bc4cc7b389b7bf4efdc373

Polygon Layer URL: https://services5.arcgis.com/FKwcDz27wRAj4HUT/arcgis/rest/services/counties/FeatureServer/0

2003 | 1999 | area | population | 2001 | 2002 | 2004 | 1997 | boundaries | 2010 | 2008 | households | 2009 | U.S. Counties | United States | polygon | 2005 | 2000 | society | 2007 | demographics | 1992 | Counties | farming

Overview | Usage | Settings

Access and authentication

Edit sharing settings

Layer access is managed through sharing settings. Register an OAuth 2.0 application and authenticate with your ArcGIS identity to access location services and private data in your applications. Learn more in the security and authentication guide.

Using Layers

- Create your first layer
  Create a feature layer to store geographic data in ArcGIS Platform
- Access and display your layer data
  Display your feature layer data on a map
- Manage your layer data
  Set the properties and capabilities for a hosted feature layer.

Developer Guide

Mapping APIs and services

Learn how to work with maps, scenes, and layers

Maps
Scenes
Data
Visualization
Security and authentication

Tutorials

Create a new feature layer

Add the FeatureLayer Constructor

```
//This is where I call the county shapefile from my developer account

    const us_counties = new FeatureLayer({
      url:
"https://services1.arcgis.com/M68M8H7oABBFs1Pf/arcgis/rest/services/US_Counties/FeatureServer/0"
    });

    map.add(us_counties);
```

You also can add feature layers from other sources

```
// Define a pop-up for Trailheads
    const popupTrailheads = {
      "title": "Trailhead",
      "content": "<b>Trail:</b> {TRL_NAME}<br><b>City:</b> {CITY_JUR}<br><b>Cross Street:</b>
{X_STREET}<br><b>Parking:</b> {PARKING}<br><b>Elevation:</b> {ELEV_FT} ft"
    }
    // The layer comes from arcgis servers:
     const trailheads = new FeatureLayer({
      url:
"https://services3.arcgis.com/GVgbJbqm8hXASVYi/arcgis/rest/services/Trailheads_Styled/FeatureSe
rver/0",
      outFields: ["TRL_NAME","CITY_JUR","X_STREET","PARKING","ELEV_FT"],
      popupTemplate: popupTrailheads
    });
     //add the trail
    map.add(trailheads);
```

Another layer hosted by other people but available to public

```
//Another public layer coming from ESRI
    const layer = new FeatureLayer({
      url: "https://services2.arcgis.com/FiaPA4ga0iQKduv3/arcgis/rest/services/HUD_Regions/FeatureServer/0"
    });
    map.add(layer);
```

You can find many others on Living Atlas

Point, Polygon, and Line in ArcGIS API

★ Point:

1. **Add "esri/Graphic", "esri/layers/GraphicsLayer" to the modules**
2. **Add Graphic and GraphicLayer to the require *fuction***
3. **GraphicsLayer(); constructor**
4. **Point Constructor**
5. **Marker Constructor**
6. **Graphic Constructor**
7. **Add layer**

Let’s do it!

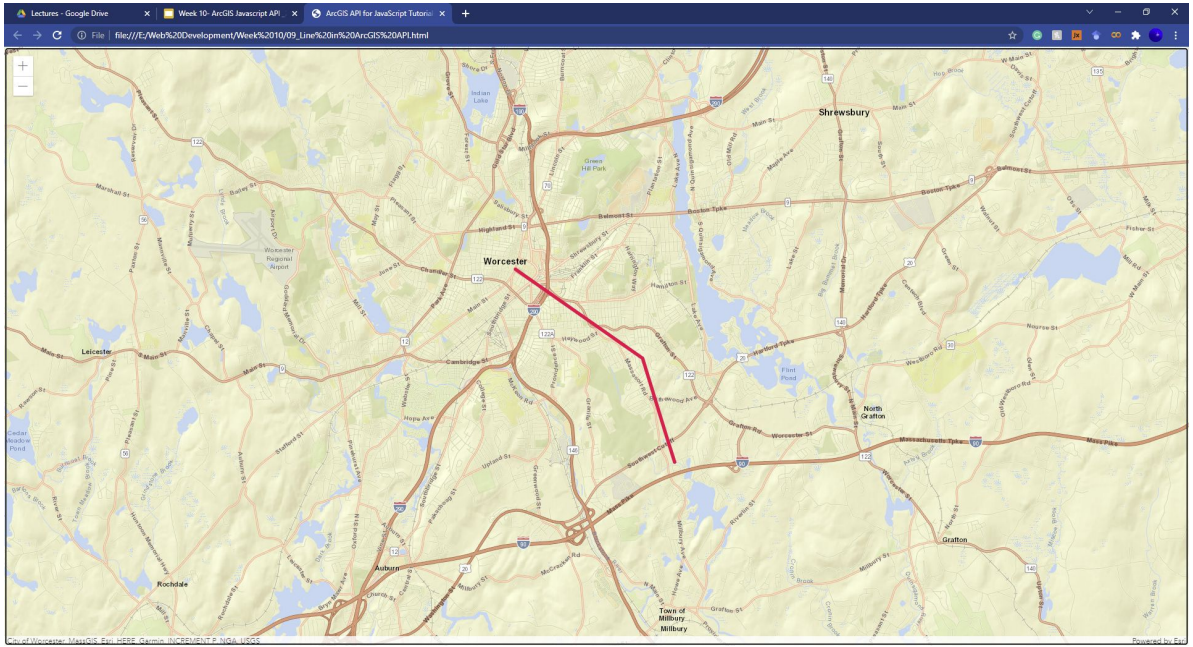
```
42    const graphicsLayer = new GraphicsLayer();
43    map.add(graphicsLayer);
44
45    const point = { //Create a point
46       type: "point",
47       longitude: -118.80657463861,
48       latitude: 34.0005930608889
49    };
50    const simpleMarkerSymbol = {
51       type: "simple-marker",
52       color: [255, 72, 51 ],  // Orange
53       outline: {
54           color: [235, 255, 51], // White
55           width: 2
56       }
57    };
58
59    const pointGraphic = new Graphic({
60       geometry: point,
61       symbol: simpleMarkerSymbol
62    });
63    graphicsLayer.add(pointGraphic);
64
65
66    });
67   </script>
68   </head>
```

Notes:

- ➔ You can comment out your API but upon calling the page you will be asked to sign in
- ➔ This time I have the entire code in the head section

In Class Activity

1. Let’s create a line across Worcester
2. In a red color



Break!