



Esri International Developer Summit
Palm Springs, CA

Transitioning to JavaScript: What to Expect & How to Quickly Come Up to Speed

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In this session...



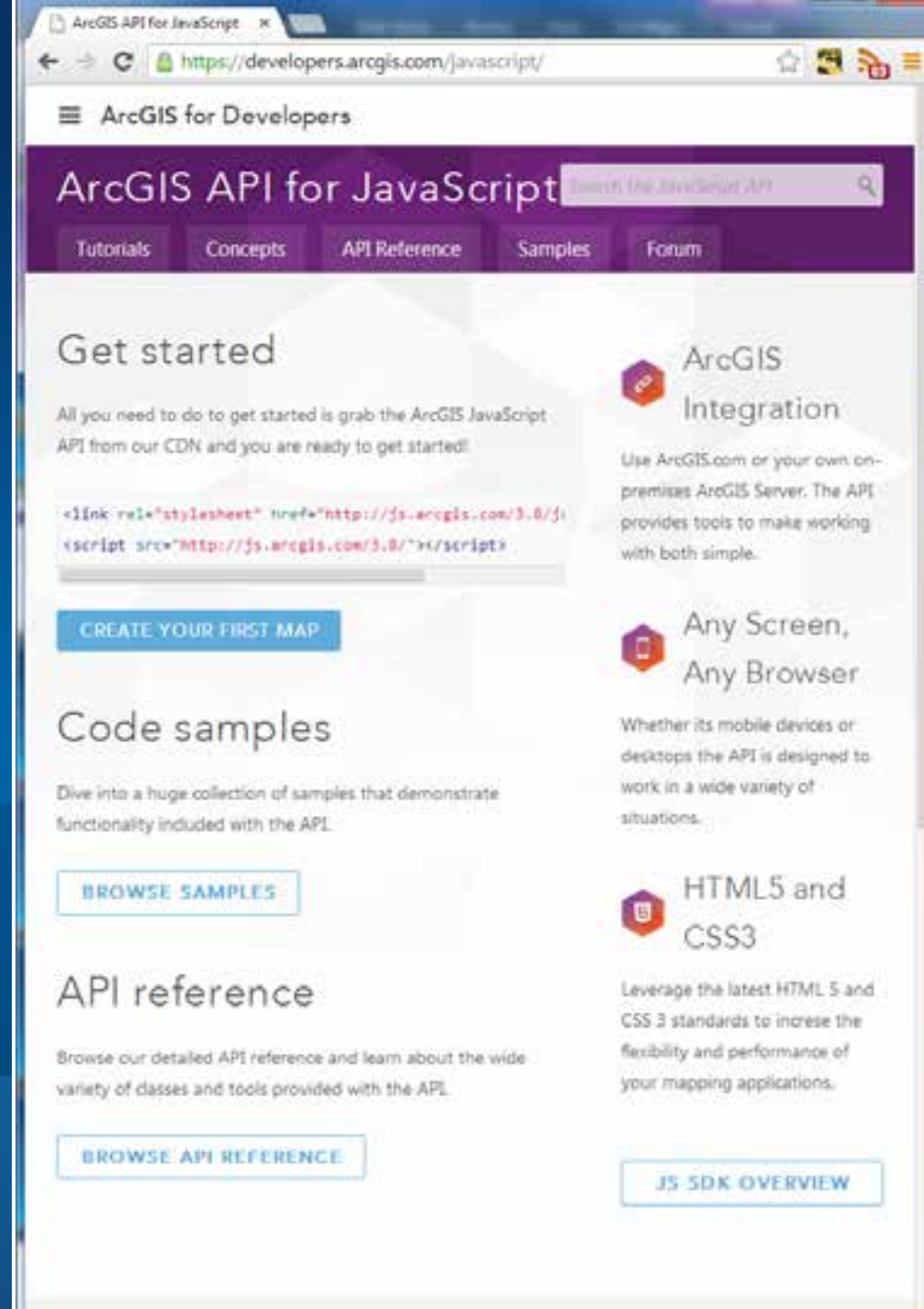
JavaScript

HTML



JavaScript

Programming language
IDE(s)
Debugging



ArcGIS API for JavaScript

https://developers.arcgis.com/javascript/

ArcGIS for Developers

ArcGIS API for JavaScript

Tutorials Concepts API Reference Samples Forum

Get started

All you need to do to get started is grab the ArcGIS JavaScript API from our CDN and you are ready to get started!

```
<link rel="stylesheet" href="http://js.arcgis.com/3.8/js">
<script src="http://js.arcgis.com/3.8/"></script>
```

[CREATE YOUR FIRST MAP](#)

Code samples

Dive into a huge collection of samples that demonstrate functionality included with the API.

[BROWSE SAMPLES](#)

API reference

Browse our detailed API reference and learn about the wide variety of classes and tools provided with the API.

[BROWSE API REFERENCE](#)

ArcGIS Integration

Use ArcGIS.com or your own on-premises ArcGIS Server. The API provides tools to make working with both simple.

Any Screen, Any Browser

Whether its mobile devices or desktops the API is designed to work in a wide variety of situations.

HTML5 and CSS3

Leverage the latest HTML 5 and CSS 3 standards to increase the flexibility and performance of your mapping applications.

[JS SDK OVERVIEW](#)

Javascript or ActionScript?

```
if (condition) {  
    // statement(s)  
} else if (condition) {  
    // statement(s)  
} else {  
    // statement(s)  
}
```

```
switch (expression) {  
    case "case1":  
        /* statements */  
        break;  
    case "case2":  
        /* statements */  
        break;  
    default:  
        /* statements */  
        break;  
}
```

console.log and alert

```
for (var key in myObject)
{
    // instead of trace
    console.log("Value of " + x + " is " + oo[x]);

    // instead of Alert.show()
    alert("Hello World");
}
```

Many choices for IDE

- Brackets
 - “open source code editor for web designers and front-end developers”
- Sublime Text
 - “sophisticated text editor for code, markup and prose”
- WebStorm (or IntelliJ) from JetBrains
 - “The smartest JavaScript IDE”
- Chrome DevTools
- ...

Browser DevTools

- **Debugging tools are built-in to every modern browser**
 - [Chrome Developers Tools \(DevTools\)](#)
 - [Firefox Developer Tools](#)
 - **IE 9+:** [F12 Developer Tools](#)

Code Quality Tools

- JSHint
 - forked from JSLint

```
46 on(dom.byId("center"), "click", selectText);
47
48 var gs = new
  GeometryService("http://sampleserver6.arcgisonline.com/arcgis/rest/services/Utilities/Geometry/GeometryService");
49
50 function buildMap(b) {
51   if ( window.app.map ) { // kill the map, if it already exists
52     window.app.extentChange && window.app.extentChange.remove();
53     window.app.map.destroy();
54     window.app.map = null;
55     // console.log("destroyed previous map instance");
56   }
57   window.app.bounds = b || window.app.bounds;
58   window.app.map = new Map("map", {
59     extent: window.app.bounds,
60     showAttribution: false,
61     sliderStyle: "small"
62   });
63   console.log("map extent: ", window.app.map.extent.spatialReference.wkid);
64   // USA
65   var layer = new
66     FeatureLayer("http://sampleserver6.arcgisonline.com/arcgis/rest/services/Census/MapServer/3");
67   // other layers to use... world regions;
```

1 JSHint Problem

52 Expected an assignment or function call and instead saw an expression. (W030) window.app.extentChange && window.app.extentChange.remove();

Demo

js.arcgis.com
Brackets
JSHint

The screenshot shows the Brackets code editor interface. The top menu bar includes File, Edit, View, Navigate, Debug, and Help. Below the menu is the 'Working Files' section, which lists 'app.js' as the active file. The left sidebar shows a file tree for a project named 'fl-any-projection', with folders for 'css' and 'js'. The 'js' folder is expanded, showing 'app.js', 'index.html', and 'README.md'. The main editor area displays JavaScript code from 'app.js'. A yellow lightbulb icon indicates a JSHint error on line 52. The error message at the bottom of the editor reads: '1 JSHint Problem' followed by '52 Expected an assignment or function'. The code on line 52 is 'window.app.e'. The status bar at the bottom right shows 'Line 52, Column 66 — 167 Lines'.

```
File Edit View Navigate Debug Help
Working Files
app.js
fl-any-projection
├── css
└── js
    ├── app.js
    ├── index.html
    └── README.md
45 on(dom.byId("cer
46 on(dom.byId("cer
47
48 var gs = new
   GeometryService("
   er");
49
50 function buildMa
51 if ( window.ap
52 window.app.e
53 window.app.r
54 window.app.r
55 // console.
56 }
57 window.app.bou
58 window.app.mag
59 extent: wind
60 showAttribut
61 sliderStyle:
62 });
63 console.log("r
64 // USA
65 var layer = ne
   FeatureLayer("http
66 // other layer
```

1 JSHint Problem

52 Expected an assignment or function

Line 52, Column 66 — 167 Lines

Let's get real...

<https://github.com/ycabon/transitioning-to-javascript>



Unearthing the excellence in JavaScript



JavaScript: The Good Parts

O'REILLY*

YAHOO! PRESS

Douglas Crockford

First application

- Use the API
- Bootstrap for styling
 - Nice look
 - Responsive
- 2 components:
 - A geocoder
 - A list of basemap



First application

- Bootstrap
 - Created by Twitter
 - Tools for creating websites and web application
 - Provide a large set of UI components
 - Use of [Bootstrap Map JS](#)
- AMD
 - Asynchronous Module Definition
 - Allow us to encapsulate some piece of code into multiple files: modules
 - A module can depend on others
- Dojo and a bit of dijit

First application

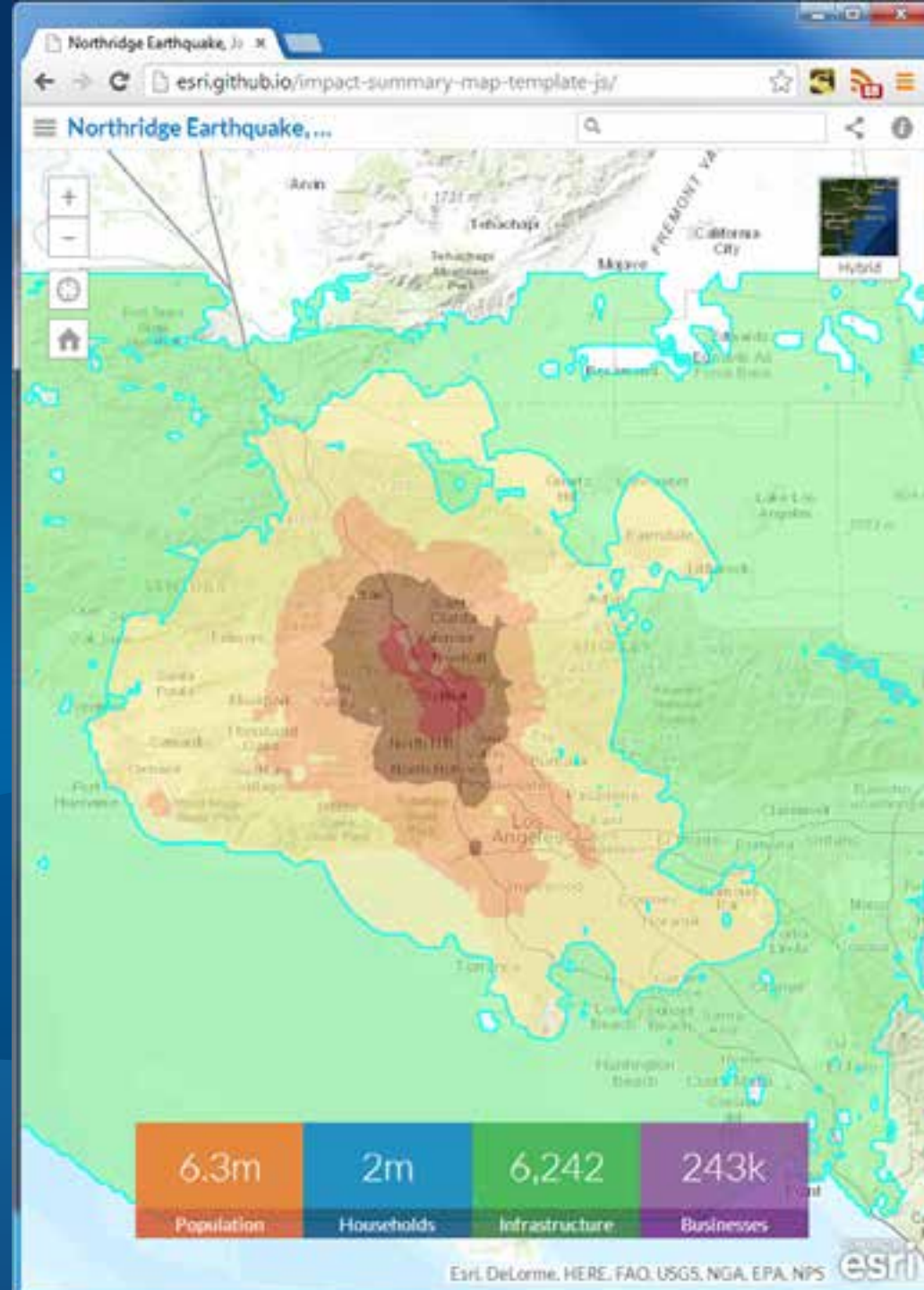
- AMD
 - Module definition: MyModule.js

```
define(['dep1', 'dep2'], function(dep1, dep2) {  
  return {  
    add: function(x, y) {  
      return console.log(x + y);  
    }  
  };  
});
```

- Module usage

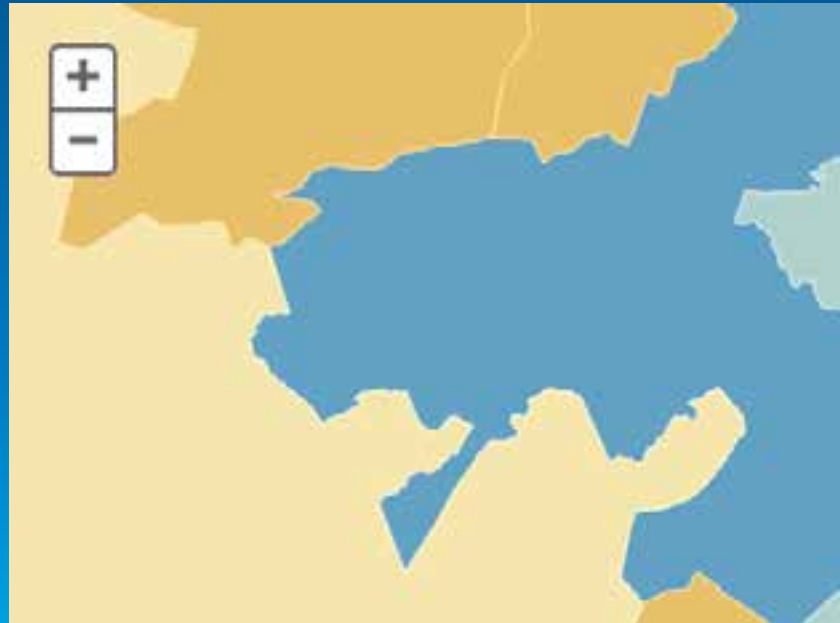
```
require(['MyModule'], function(MyModule) {  
  MyModule.add(2, 3); // print 5  
});
```

Apps, templates, viewers



Boilerplate

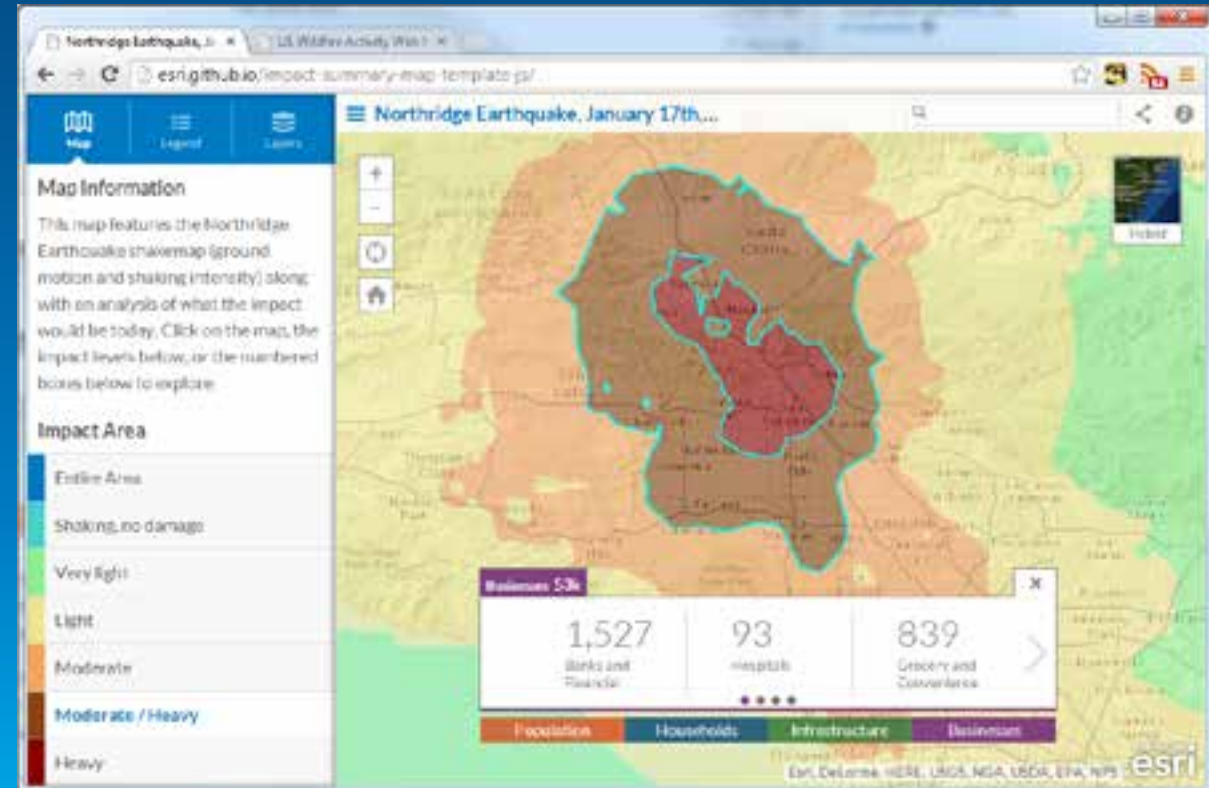
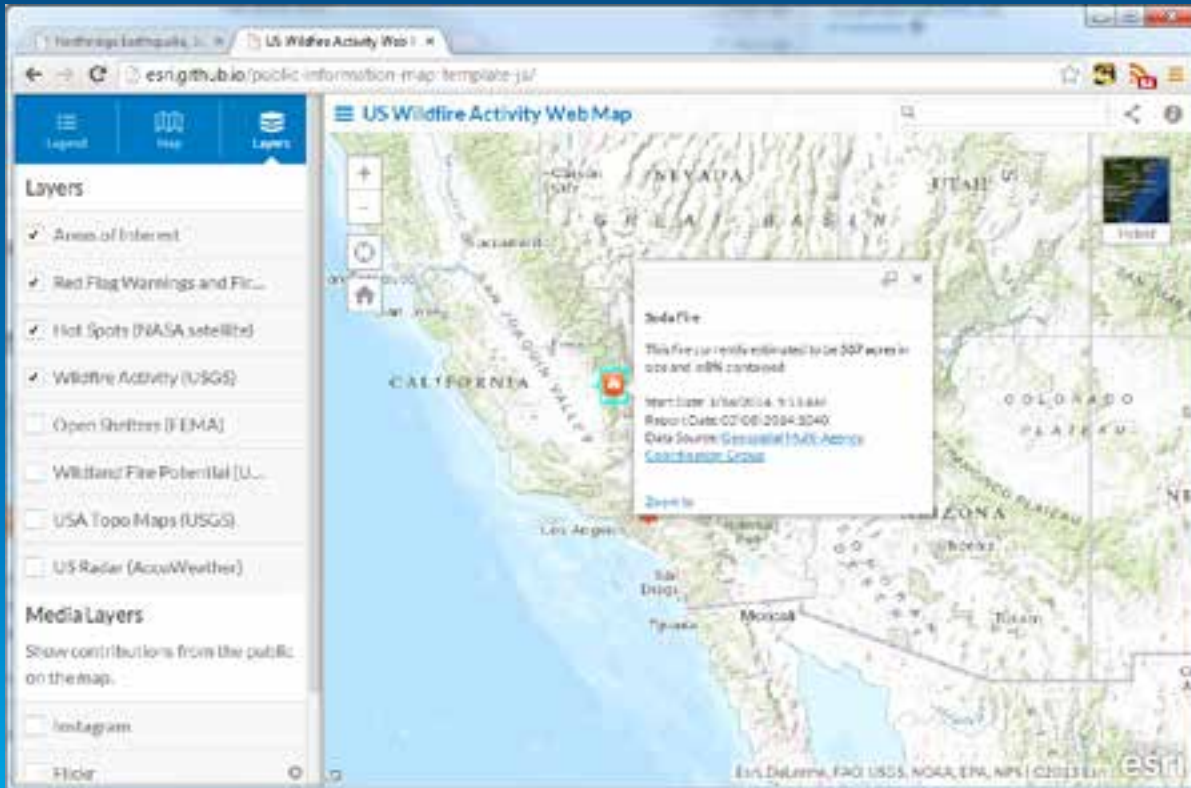
- <https://github.com/Esri/application-boilerplate-js>
- <http://blogs.esri.com/esri/arcgis/2013/08/29/step-up-to-the-boilerplate/>



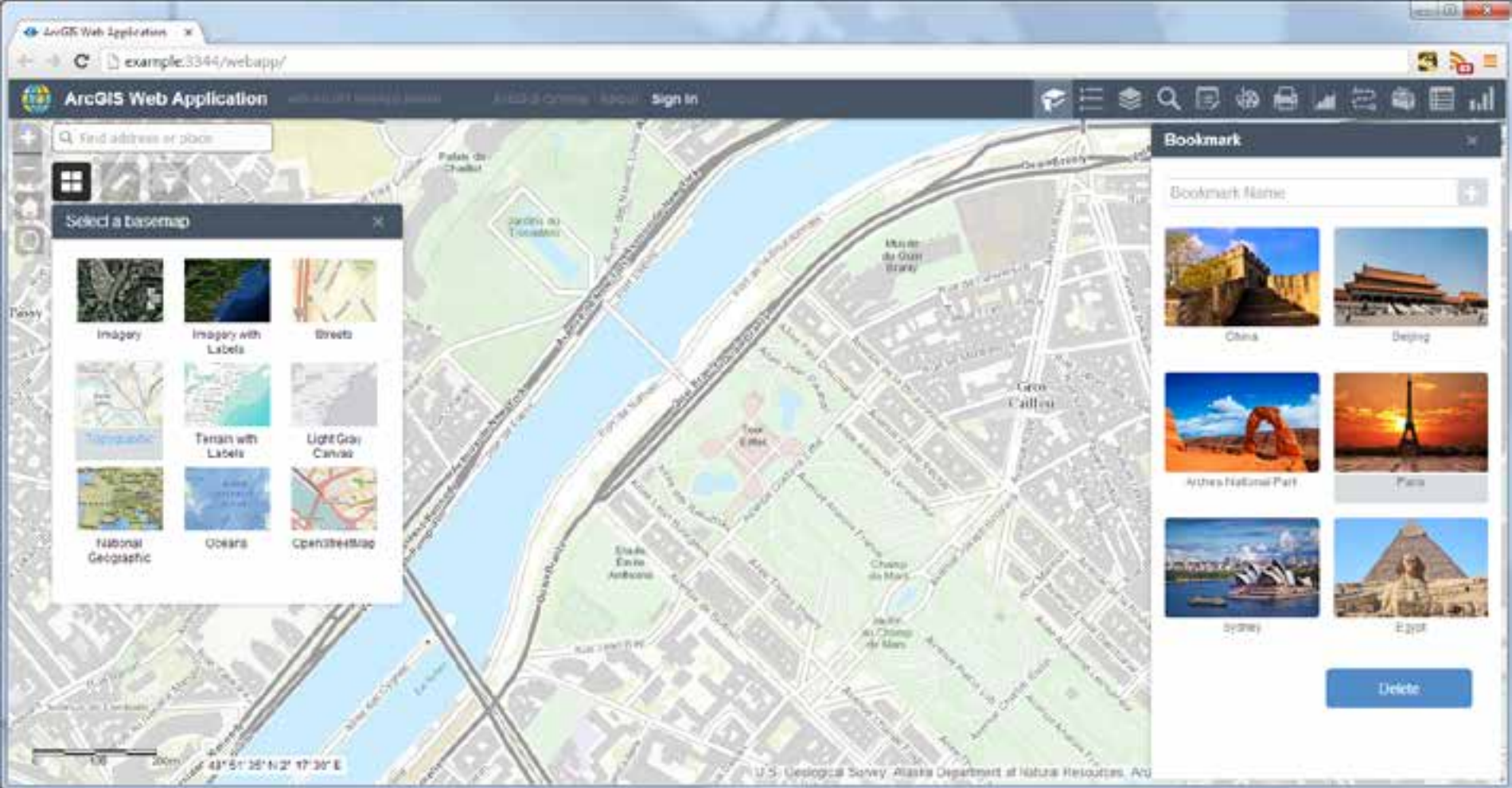
Templates

[public-information-map-template-js](#)

[impact-summary-map-template-js](#)



ArcGIS WebApp Builder



Proxy and CORS

Cross-Origin Resource Sharing (CORS)

- to loosen up the same-origin policy
- since ArcGIS for Server 10.1

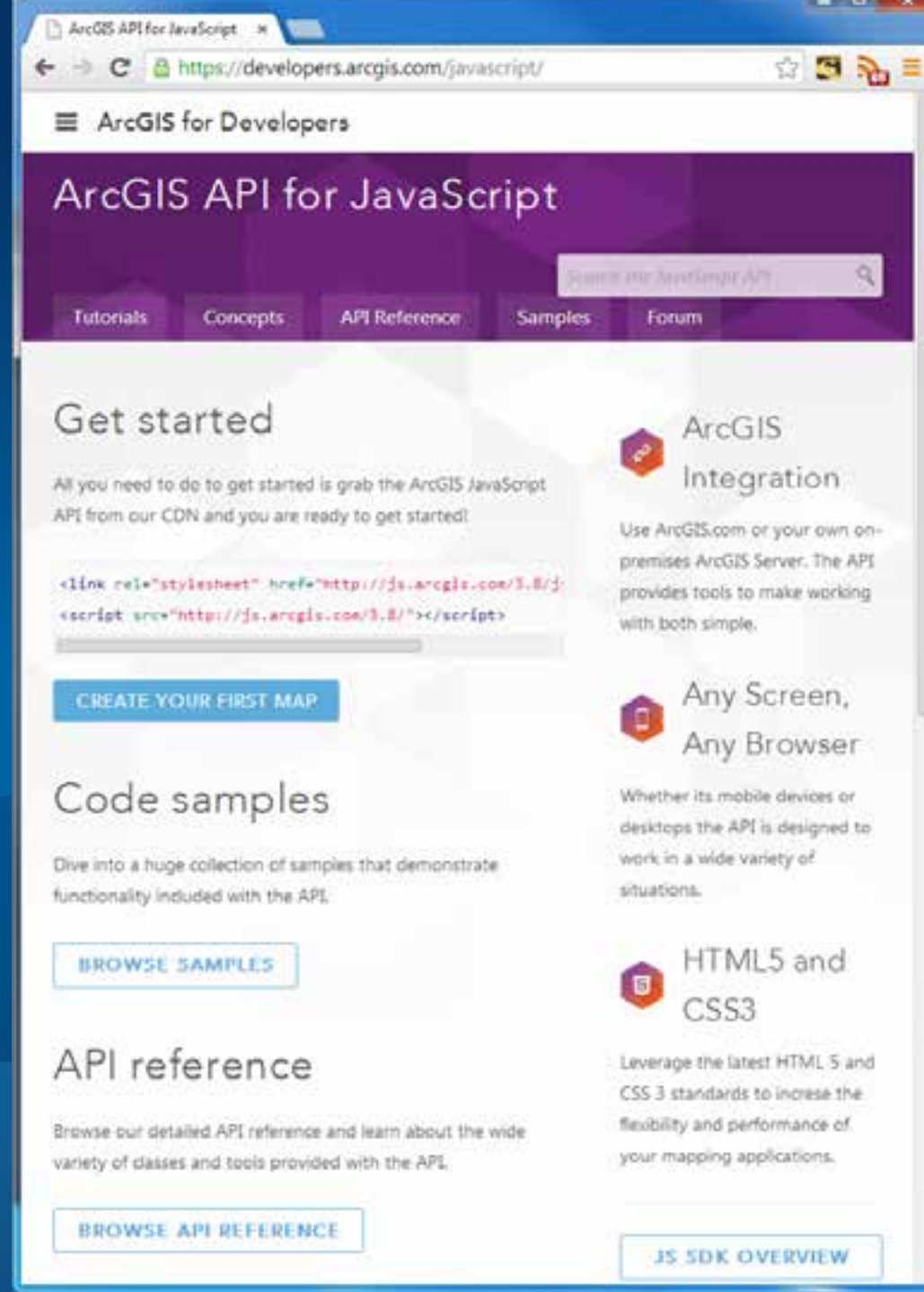
Proxy

- For URLs that are POST'ed (long URLs)
- When uploading files using Internet Explorer
- For security reasons (non-user token generation)
- For getting around same-origin policy – when CORS is not an option

Other tools

- **Web Components**
 - Allows developers to create easy to reuse components
 - A component can define new HTML tags, like: `<esri-map>`
 - The specification is on going
 - [Polymer project](#) a set of polyfills to create WebComponents now.
- **Automation tools**
 - [Grunt](#)
- **CSS Pre-processors**
 - [SASS](#)
 - [LESS](#)
- Dijits and Bootstrap with [Bootstrap theme](#) and [Dojo Bootstrap](#)

Additional resources



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Check out additional presentations

- **Wednesday 10:30 - 11:30: Customizing and Extending the ArcGIS Web App Builder**
- **Thursday 1:00 - 2:00: Introduction to the ArcGIS Web App Builder: JavaScript Apps Made Easy**
- **Thursday 2:30 - 3:30: Customizing and Extending the ArcGIS Web App Builder**

<http://js.arcgis.com>

<https://github.com/ycabon>

<https://github.com/bsvensson>

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Q & A

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Understanding our world.