ESRI DEVELOPER SUMMIT

10-12 November | Berlin, Germany

Choosing the Best JavaScript Framework

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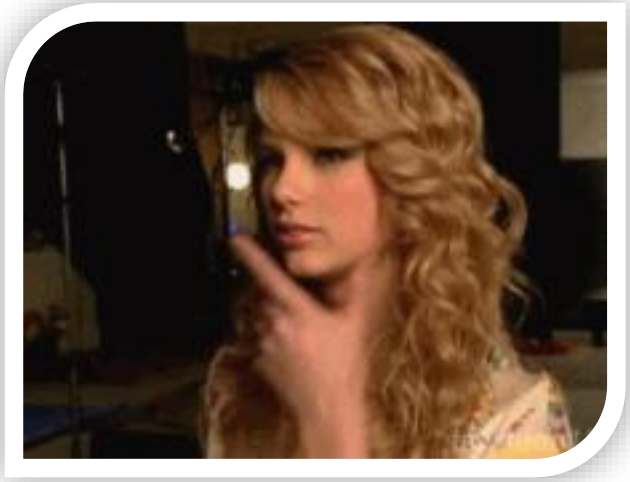
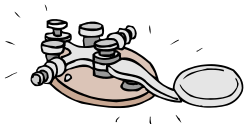
Raul Jimenez, Esri ES

Frameworks, frameworks, …



Do I even need a framework??



Raphael
Has.JS
The Boiler
Bootstrap
Less+
960 GRID SYSTEM
Dojo
Wirefy
Foundation 3
Sencha
Titan
Susy
jQuery

1991 - HTML

1995 – HTML 2

1996 – CSS 1

1997 – HTML 4 + ECMAScript 1

1998 – CSS 2

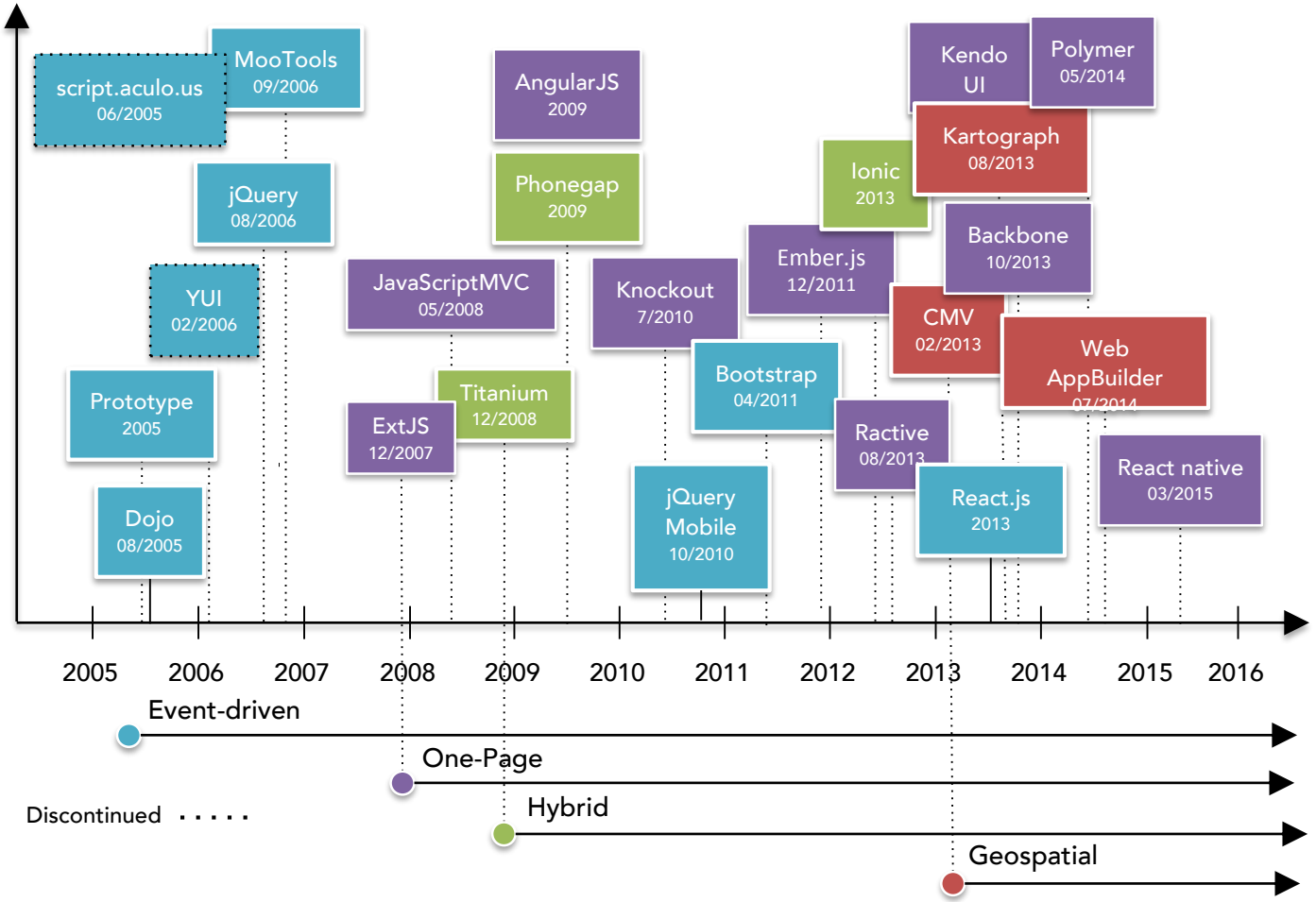
2005 – AJAX

2008 – HTML5 (1st draft)

ECMA 5.1
June 2011

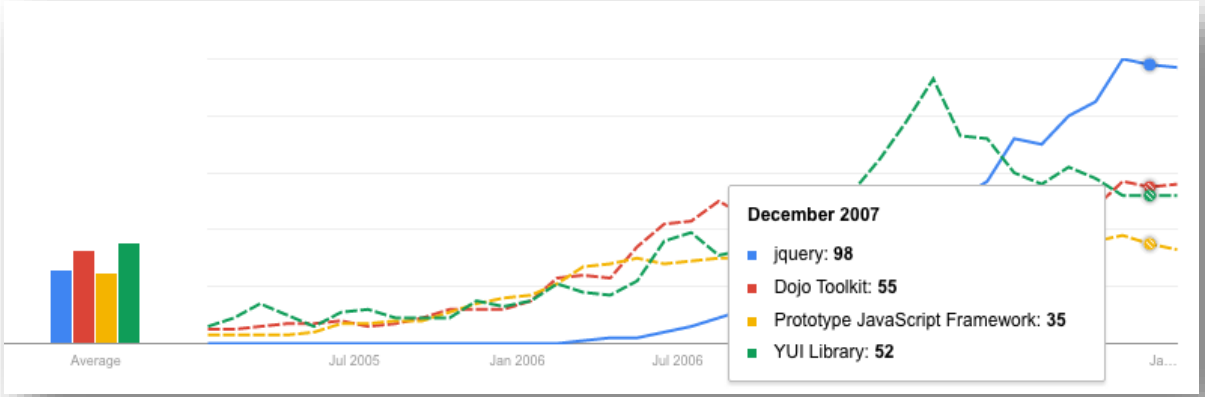
ECMA 2015
June 2015

JavaScript Frameworks & Libraries: Timeline

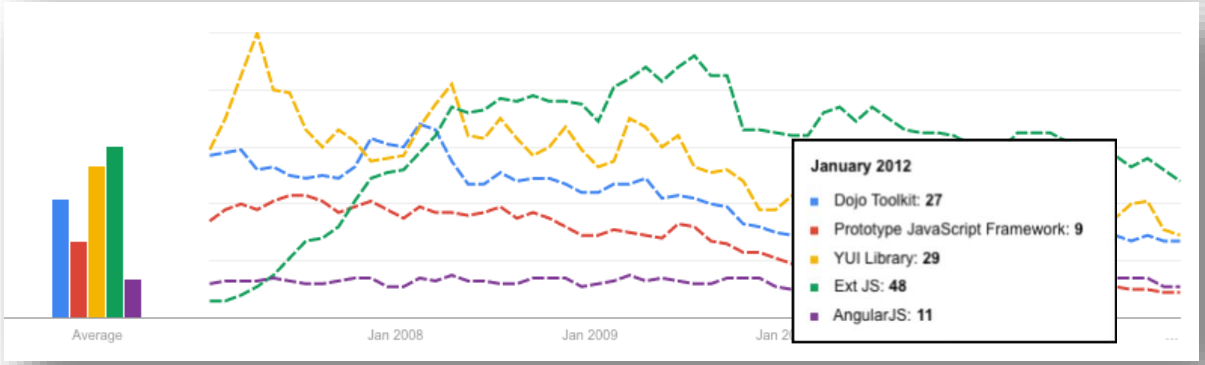


Trends: Interest over time

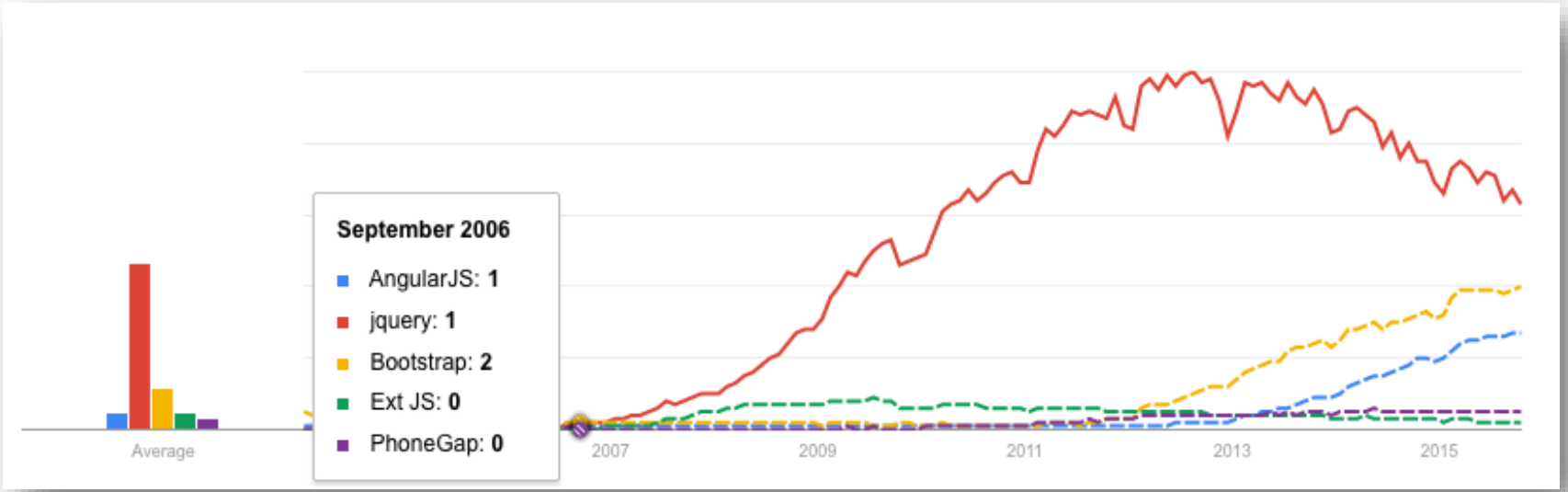
2005 - 2007



2007 - 2012



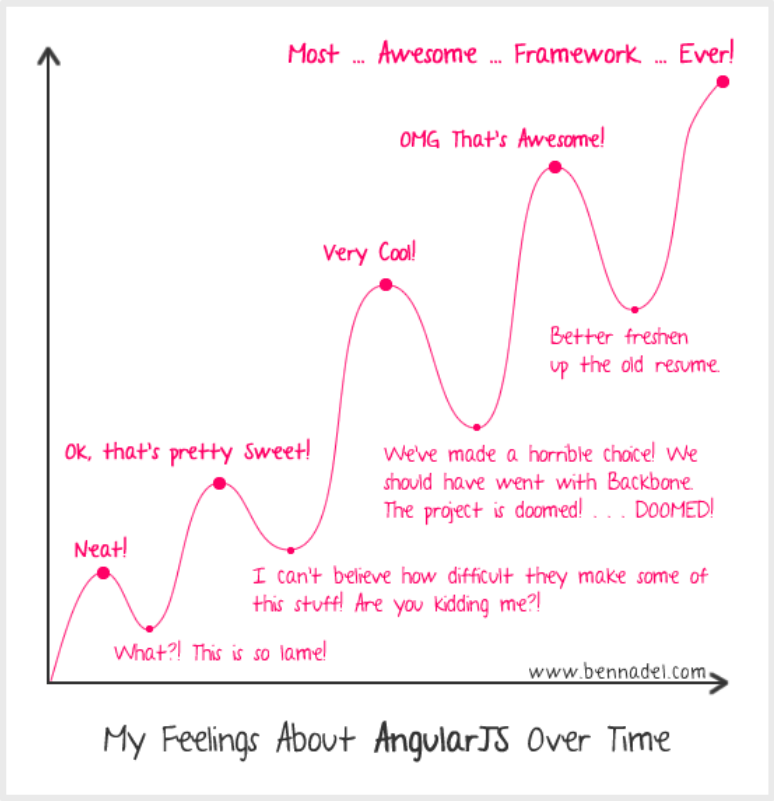
2004 - 2012


September 2006
AngularJS: 1
jquery: 1
Bootstrap: 2
Ext JS: 0
PhoneGap: 0
Average
2007
2009
2011
2013
2015

Your Considerations

- New project or expanding existing project?
- Your project size (small, medium, large)?
- Do you have existing build system?
- Do you have existing frameworks?
- Your teams skill sets?
- Your requirements?

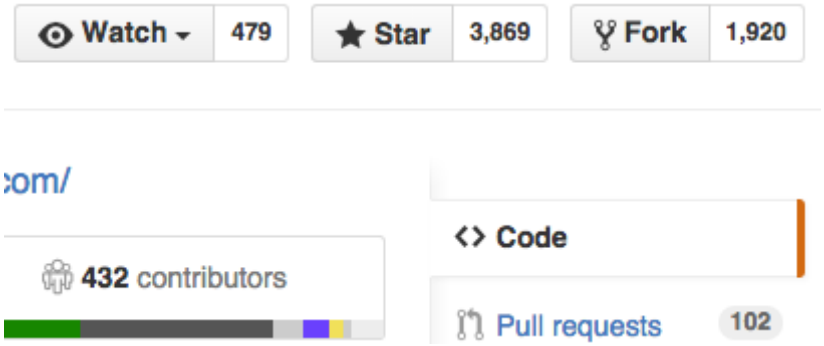
Learning curve



Evaluating a framework

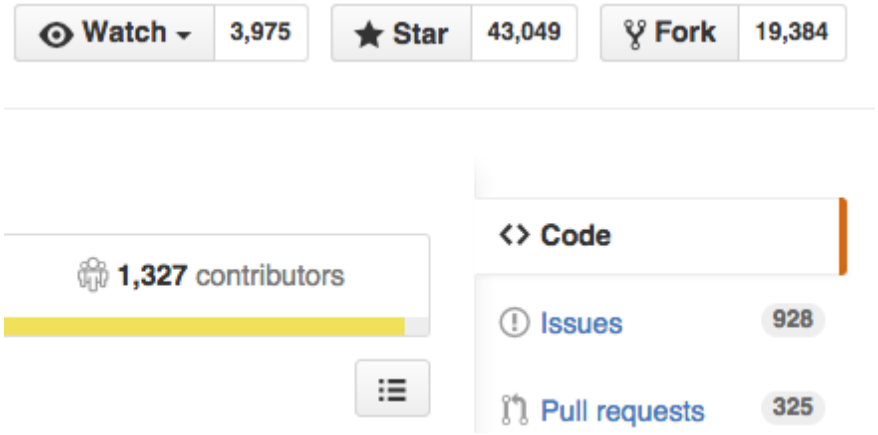
- Framework 3rd party sponsorship
- Major version changes
- Documentation
- Stackoverflow questions

Evaluating a framework

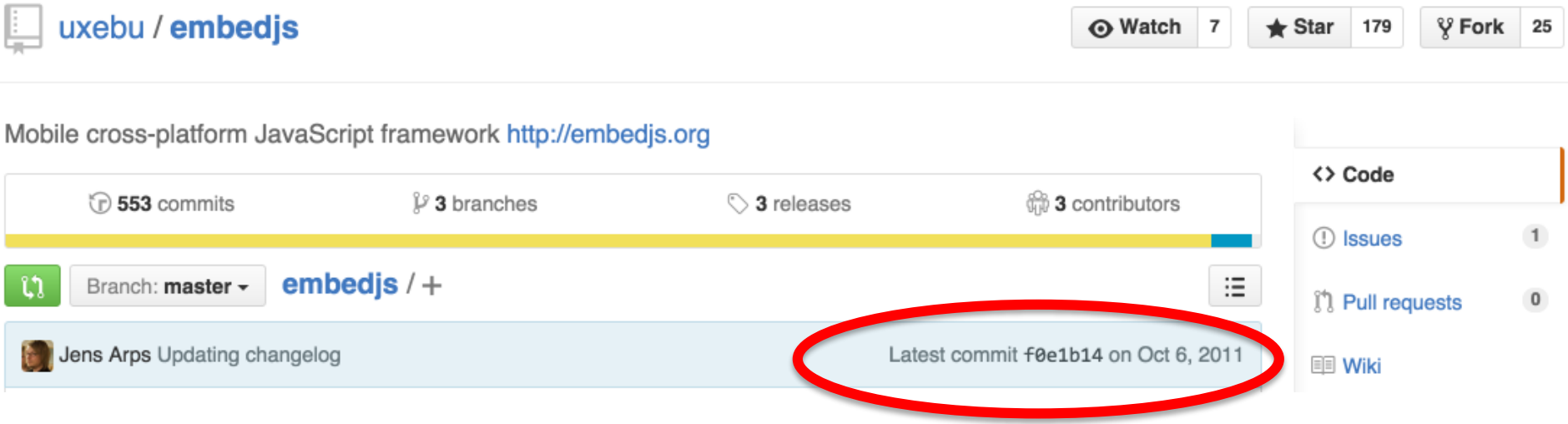


Mono

Angular.js



Evaluating a framework



Latest commit … Oct 6, 2011!!!

Evaluating a framework

Number of:

- Closed issues
- Open issues
- Open pull requests
- Contributors

Evaluating a framework

- Trendiness (cool factor) vs Stable/Secure
- MVC-style versus event driven
- AMD vs. Browserfy vs. Nothing
- Small vs. Large project performance

GUI Frameworks

jQuery, jQuery UI, jQuery Mobile

Dojo

Bootstrap

GUI Frameworks

Focus on User Interface

- Components
- DOM manipulation
- Event handling

GUI Frameworks – UI Components

- Components and Icons
- Themes
- Widgets
- CSS Frameworks
- CSS Pre-processors: Sass, Less

GUI Frameworks – DOM manipulation

- Helper methods
- Complete JavaScript APIs

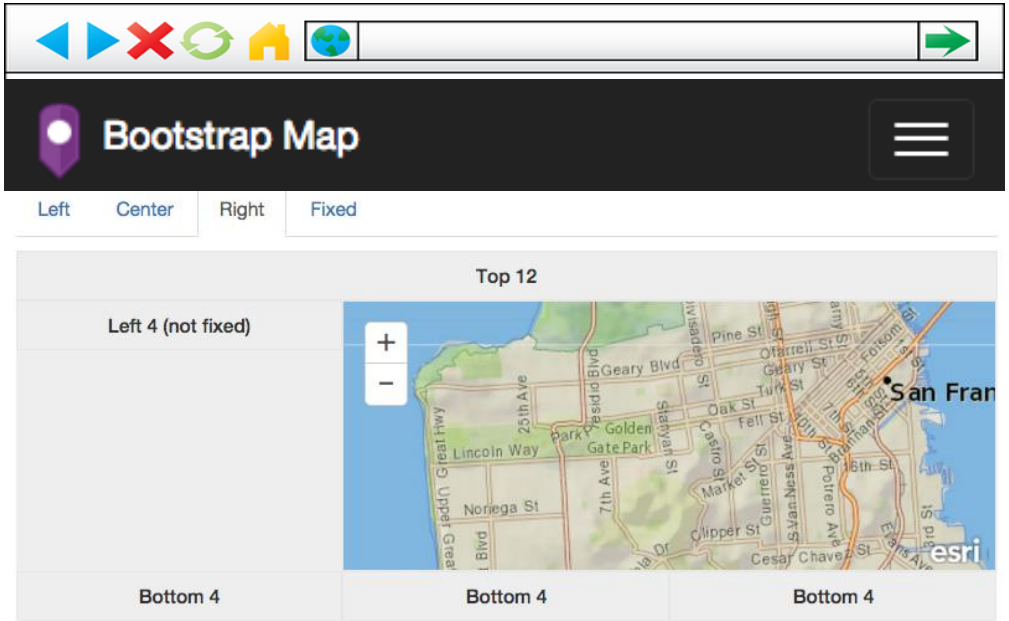
GUI Frameworks – Events

- Life-cycle events
- Actionable events
- DOM listeners

```
$('#myModal').on('show.bs.modal', function (e) {
  if (!data) return e.preventDefault() // stops modal from being shown
})
```

GUI Frameworks

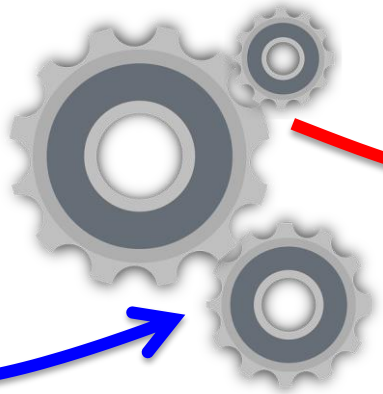
[Mixed together or sandboxed!]



Hybrid frameworks

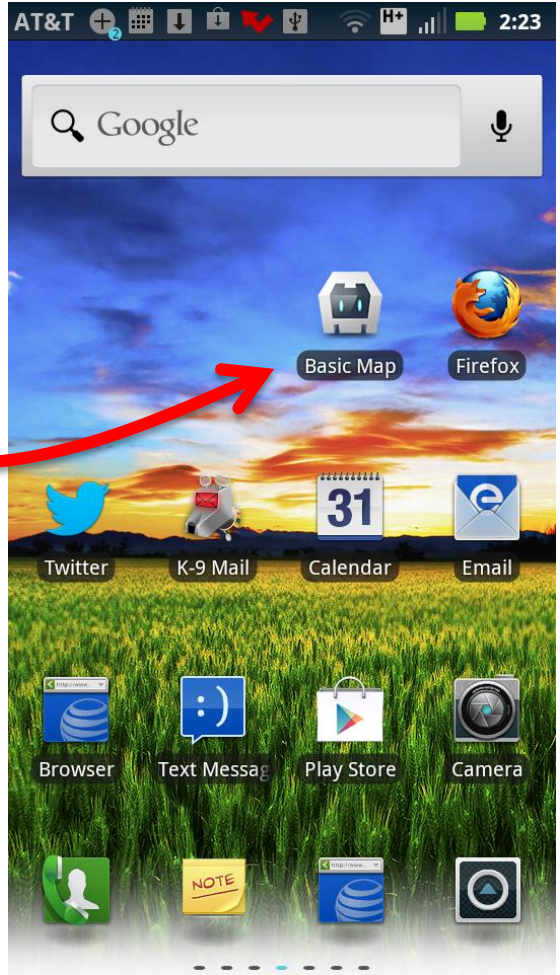
PhoneGap/Cordova
Xamarin Mono
Appcelerator Titanium

Hybrid frameworks



01010110
10010100
01101010

mono™ PhoneGap titanium™



PhoneGap/Cordova – Open Source

Wraps JavaScript in a native container

Use a chrome-less browser

Provide plug-in bridges between JS and native

Titanium SDK – Open Source

JavaScript interacts with Titanium API

UI Controls API - No HTML DOM manipulation

Can be extended with Modules

Xamarin (is a company)

Mono is open source .NET SDK

Proprietary C# libraries built on Mono:

- Xamarin.iOS (formerly MonoTouch)
- Xamarin.Android (formerly Mono for Android)

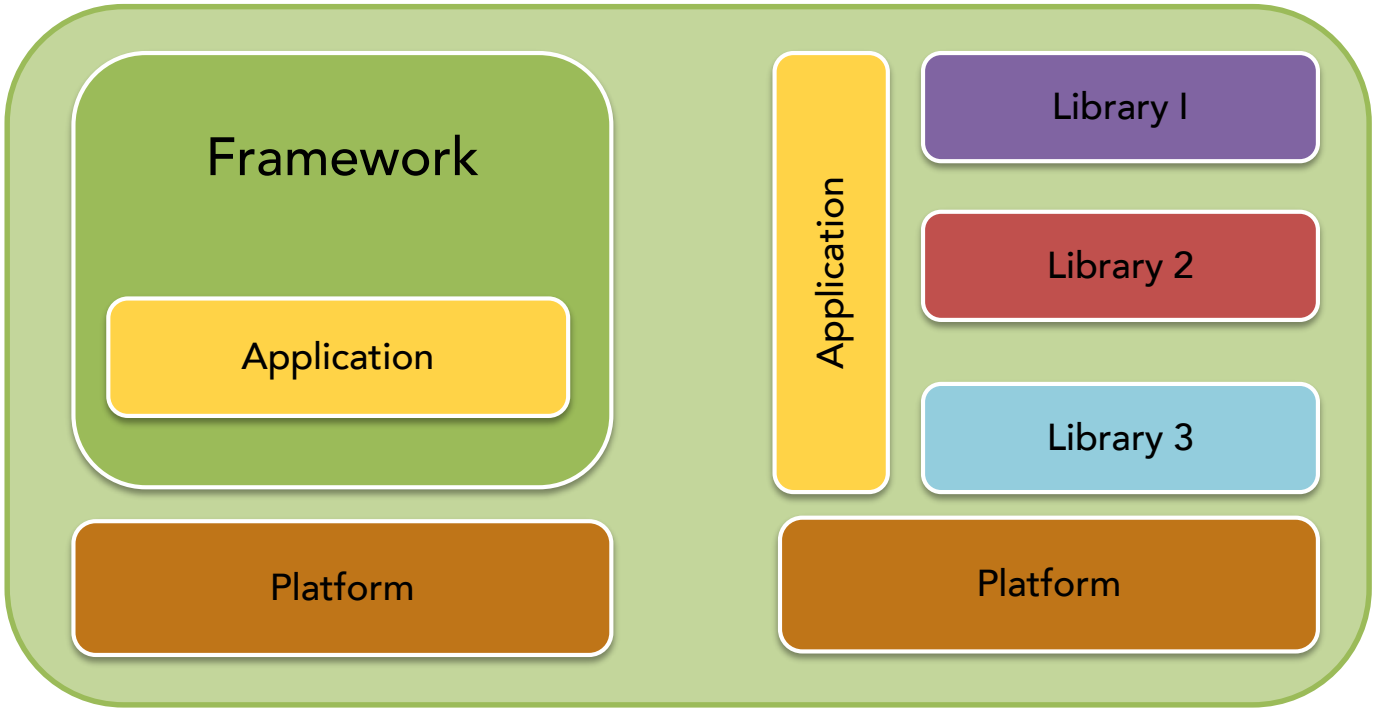
Write apps entirely in C#

Cross-compile to native

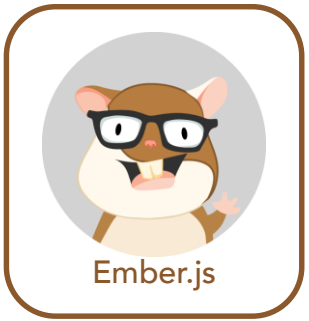
Demo

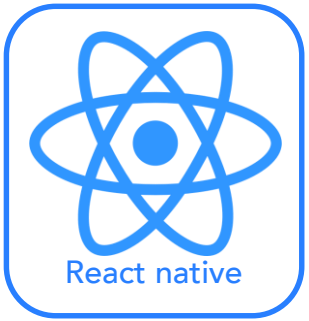
quickstart-map-phonegap

Web-app frameworks



Web-app or single-page frameworks



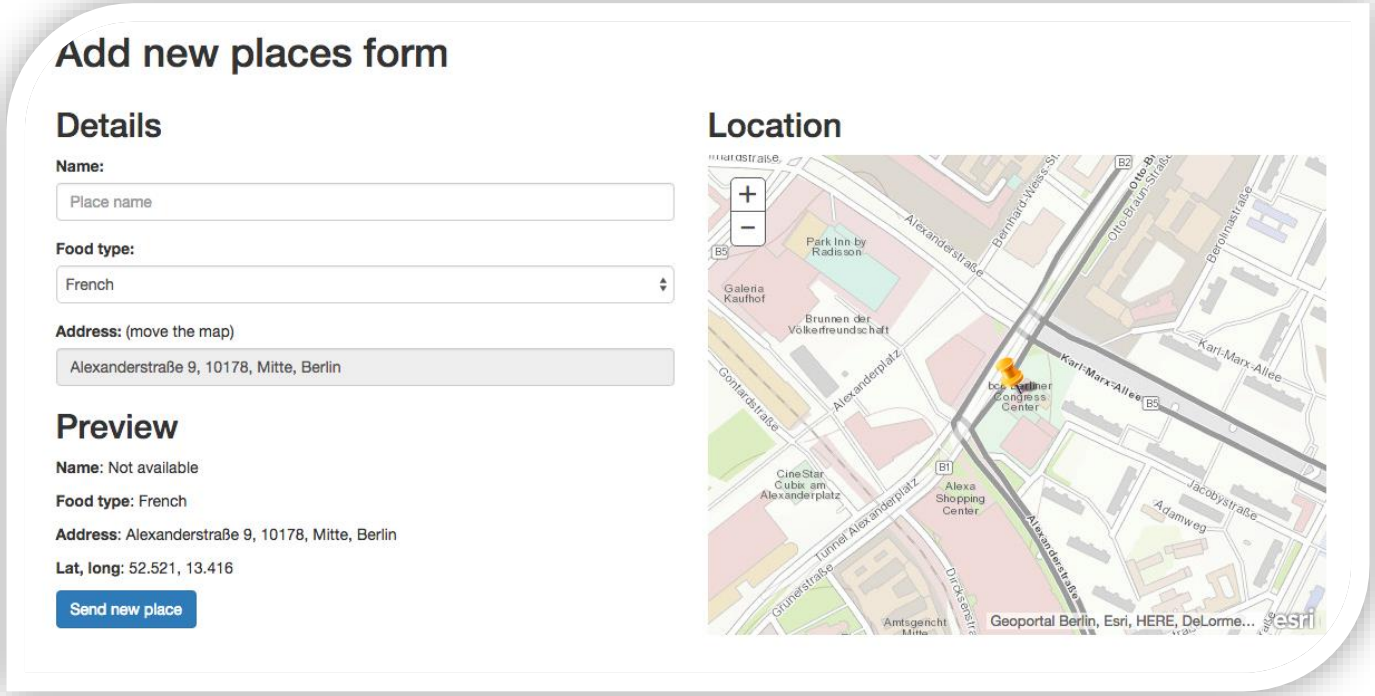


ArcGIS Compatible Frameworks – Quick Overview

	AngularJS 1.4.7	Ember.js 2.10	Backbone.js 1.2.3
Since	2009	12/2011	10/2013
#Contributors	1348	539	277
#Stars on Github	44K	15K	23.3K
#StackOverflow Questions	131K	17K	19K
#Open/Closed Issues	928/6095 (86.7%)	282/3879 (93.2%)	20/2143 (99%)
#Youtube Videos	85K	38K	47K
Size (Packed and zipped)	51.4KB	165KB	7.3KB
Size (+Dependencies size)	54.1KB	64.1KB	136KB
Lines of code TodoMVC comparison	378 (+87%)	202	359 (+77%)

Notes: All of them use MIT Licenses & AngularJS is mainly maintained by Google

Esri-Angular Style



View Demo

Geospatial Frameworks

Web AppBuilder
Dev. Edition

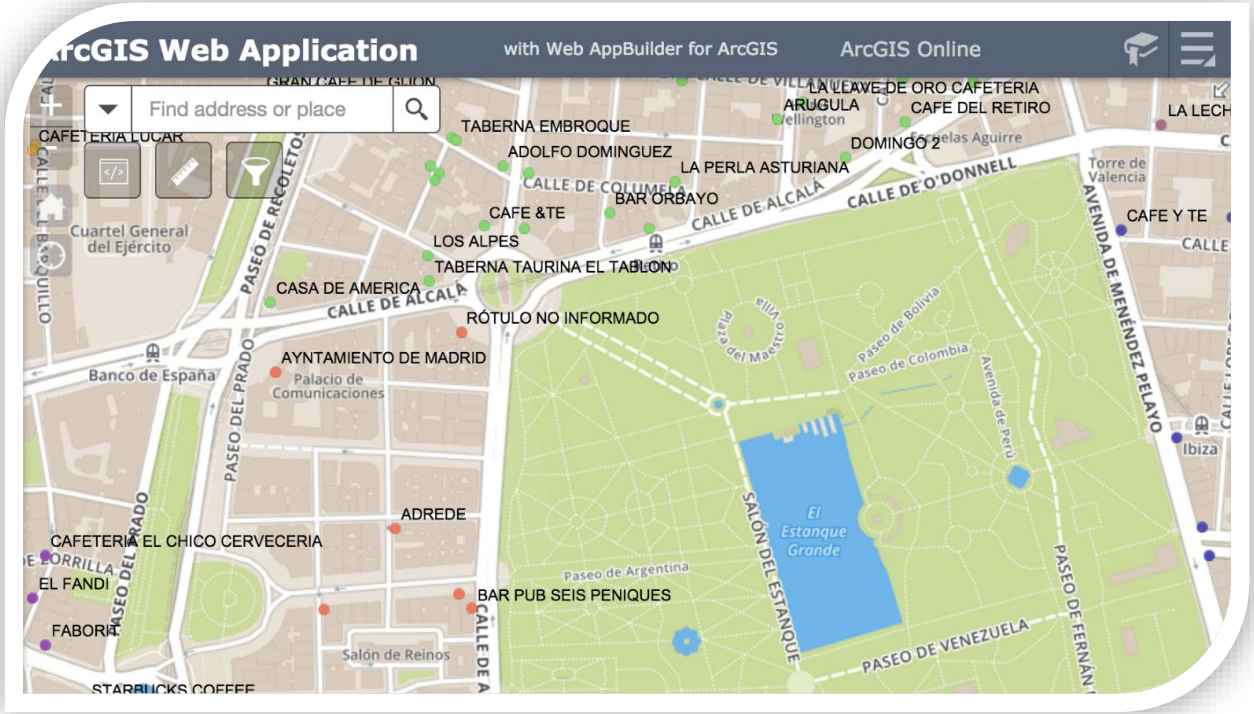
CMV

Kartograph

ArcGIS Compatible Geospatial Frameworks

	Web AppBuilder 1.2 Dev Edition	CMV 1.3.4
Since	07/2014	02/2013
Support	Esri	Community
#Widgets (official)	34	15
#Widgets (community)	25	31
GUI Editor	Yes	No
Dependencies	Dojo & Dijit	Dojo & Dijit
Size (Packed and zipped)	253KB	80.5KB
Licenses	Apache 2.0	MIT

Web AppBuilder Style



[Web AppBuilder for ArcGIS (Developer Edition)]

Tons of resources

Angular

- https://github.com/Esri/angular-esri-map
- Declarative Mapping Applications with AngularJS – PDF

Polymer

- https://github.com/JamesMilnerUK/esri-polymer
- https://github.com/mjuniper/polymer-demo-ds2014

Bootstrap

- Bootstrap: Taking Your Mapping UI and UX to the Next Level – PDF
- https://github.com/Esri/bootstrap-map-js
- https://github.com/Esri/dojo-bootstrap-map-js

Tons of resources

PhoneGap

- ArcGIS API for JavaScript - Building Native Apps using PhoneGap and JQuery – PDF
- https://github.com/Esri/quickstart-map-phonegap

jQuery Mobile

- https://github.com/Esri/jquery-mobile-map-js

Knockout & Backbone & Angular

- Building Map Apps with Knockout and the Esri JavaScript API
- Have a Little Backbone: An MVC JavaScript Framework for Your Next Generation Apps
- http://driskull.github.io/framework-samples-js

Tons of resources

Choosing the Best JavaScript Framework for You (Different approach)

Ember

- https://github.com/Esri/ember-cli-amd

Web AppBuilder

- http://esri-es.github.io/Web-AppBuilder-Custom-Widgets/

CMV

- https://github.com/cmv/cmv-app
- http://docs.cmv.io/en/1.3.4/

Questions??

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Slides? -> Tweet

Please Take Our Survey!

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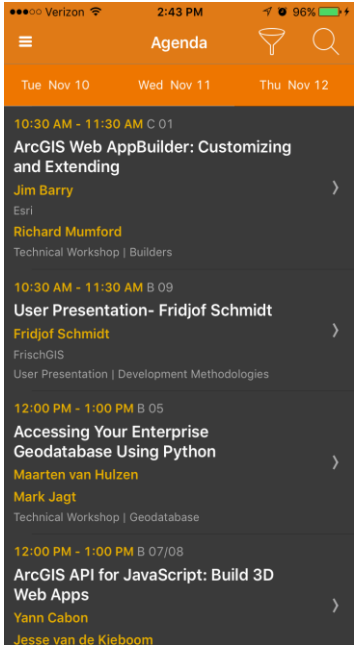
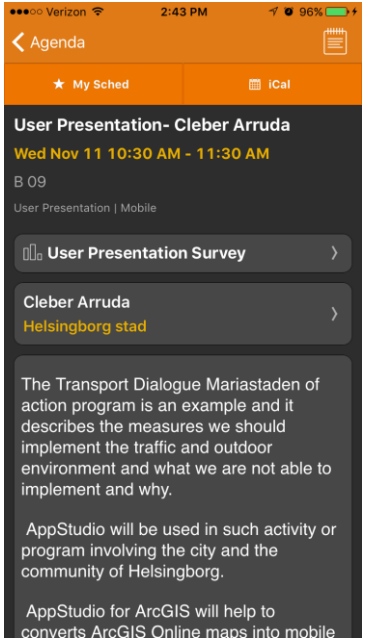
Available on the App Store

ANDROID APP ON Google play

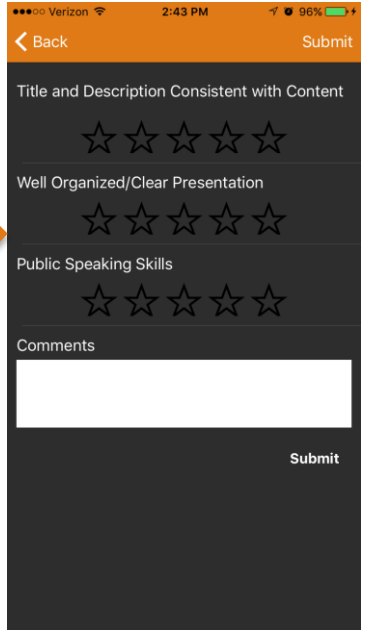
Select the session you attended



Select "Technical Workshop Survey"



Complete Answers and Select "Submit"



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