

TOOLS AND TECHNIQUES FOR WEB APPBUILDER DEVELOPMENT

TOM WAYSON AND GAVIN REHKEMPER

ESRI DATABASE SERVICES

twayson@esri.com

 [/tomwayson](https://github.com/tomwayson)

 [/tomwayson](https://twitter.com/tomwayson)

grehkemper@esri.com

 [/gavinr](https://github.com/gavinr)

 [/gavinrehkemper](https://twitter.com/gavinrehkemper)

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ARCGIS WEB APPBUILDER: CUSTOMIZING AND EXTENDING

Tomorrow (Friday, Mar 13) - 1:00 PM - Location:
Pasadena/Sierra/Ventura

WHAT IS THE WEB APPBUILDER?

Brings "builder" experience from Flex/Silverlight to JavaScript

- Good for:
 - Multi-purpose apps that need to run on multiple devices
 - Creating a suite of custom apps with consistent style/behavior
 - Empowering non-developers to create apps
- Other frameworks/templates might be better for:
 - Specific, custom web apps, with specialized workflows
 - When there is a template that does *almost all* of app functionality

WEB APPBUILDER TOOLS AND TECHNIQUES

Tools and techniques to help you:

- Use source control
- Scaffold out boilerplate files
- Create widgets that can be used outside the WAB
- Test your code

HOW DO I CHECK IN MY CODE?



[@codefinger](#)

WEB APPBUILDER FOLDER STRUCTURE

A standalone Node/Express app with a specific folder structure:

- Stem app: [install dir]/client/stemapp/widgets/[YourWidget]/
- Built apps: [install dir]/server/apps/[AppId]/widgets/[YourWidget]/

This probably should **NOT** be in your source control.

TASK AUTOMATION TO THE RESCUE



Work in your source control tree and use scripts to copy files

- Grunt
 - `grunt-contrib-watch`
 - with `grunt-sync`

EXAMPLE: GRUNTFILE.JS

```
module.exports = function(grunt) {
  var appDir = 'C:\\code\\arcgis-web-appbuilder-1.0\\server\\apps\\2';
  var stemappDir = 'C:\\code\\arcgis-web-appbuilder-1.0\\client\\stemapp';

  grunt.initConfig({
    watch: {
      main: {
        files: ['src/**'],
        tasks: ['sync'],
        options: {
          spawn: false
        }
      }
    },

    sync: {
      main: {
```


Web AppBuilder for ArcGIS

stlgavin.esri.com:3344/webappbuilder/

gavinrehkemperPS

Welcome to Web AppBuilder for ArcGIS!

Create New Import

App Name	Description	Date modified	Creator
Test App	This is a test for DevSummit	3/9/2015, 9:58 AM	gavinrehkemperPS



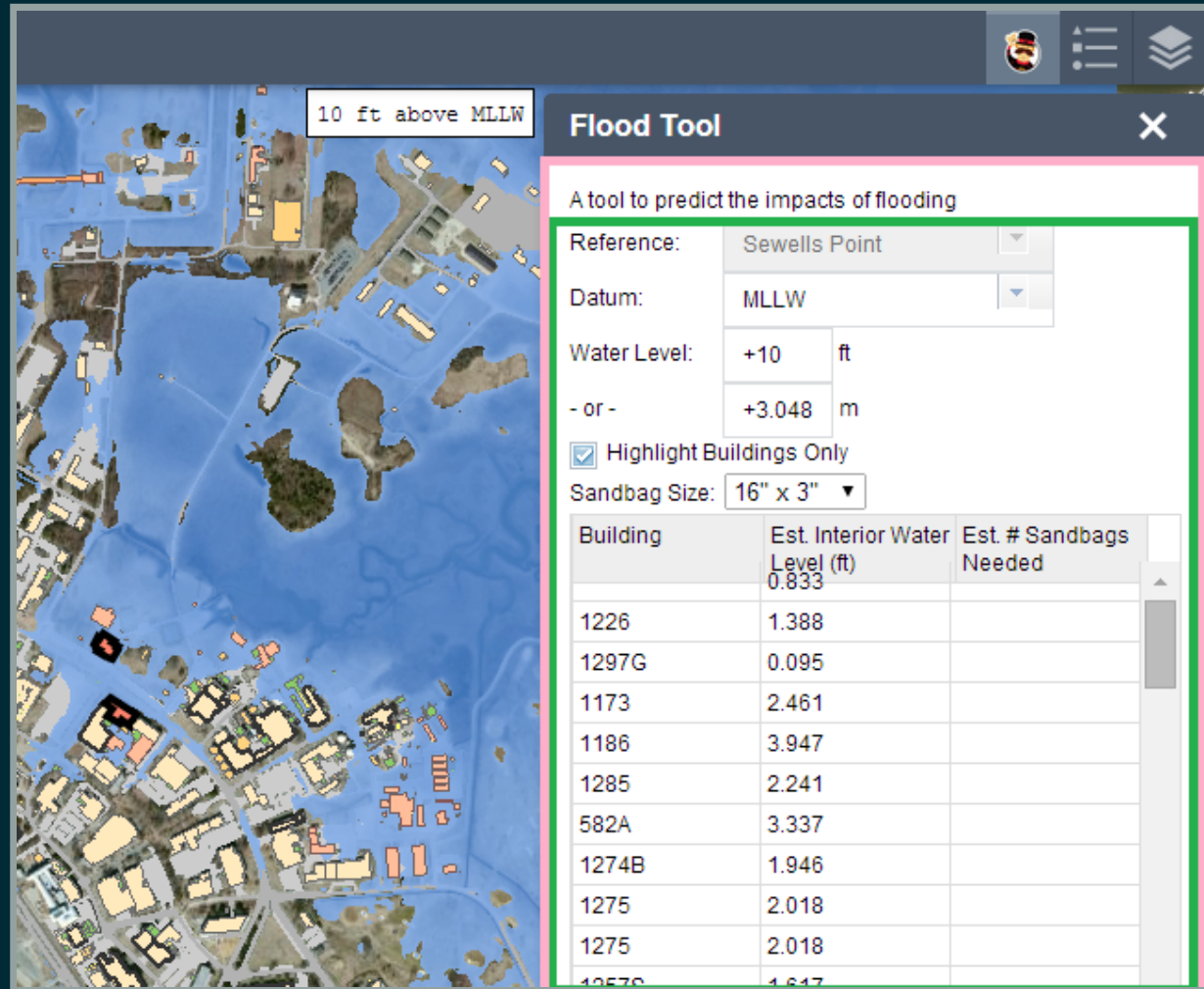
TIP: BECOME A WRAP STAR



USE THE WEB APPBUILDER WIDGETS AS WRAPPERS

- BaseWidget is the *interface* between your widget(s) and the rest of the app (the panel, dialog windows, other widgets, etc)
- Create sub widget(s) for your business logic / workflows

EXAMPLE: USING SUB-WIDGETS



The screenshot displays a software interface for a flood prediction tool. On the left, a map shows a coastal area with buildings and water. A callout box on the map indicates "10 ft above MLLW". On the right, a "Flood Tool" window is open, providing configuration options and a results table.

Flood Tool

A tool to predict the impacts of flooding

Reference: Sewells Point

Datum: MLLW

Water Level: +10 ft

- or - +3.048 m

Highlight Buildings Only

Sandbag Size: 16" x 3"

Building	Est. Interior Water Level (ft)	Est. # Sandbags Needed
	0.833	
1226	1.388	
1297G	0.095	
1173	2.461	
1186	3.947	
1285	2.241	
582A	3.337	
1274B	1.946	
1275	2.018	
1275	2.018	
1257C	1.647	


ADVANTAGES OF THE WRAP STAR LIFESTYLE

- Widgets can be used outside the Web AppBuilder
- Decoupled widgets are:
 - Faster to develop
 - Easier to test

... but isn't it more work to set up?

TOOLS TO HELP YOU BUILD WIDGETS



 ogimogi

DON'T WRITE WIDGETS FROM SRATCH

Copy or scaffold widget files:

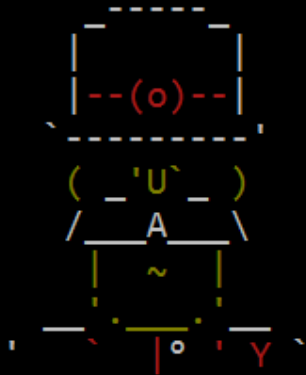
- Template: [stemapp dir]\widgets\samplewidgets\CustomWidgetTemplate
- Yeoman generator: [generator-esri-appbuilder-js](#)

EXAMPLE: YEOMAN GENERATOR

```
C:\code\test\yo-esri-appbuilder-js>yo esri-appbuilder-js:widget
Welcome to the ArcGIS Web AppBuilder widget generator!
[?] Widget Name: MyWidget
[?] Widget Title: My Widget
[?] Description: A custom Web AppBuilder widget.
[?] Base Class: my-widget
[?] Which features would you like to include? (Press <space> to select)
>[X] Run inside a panel
[X] Locale (i18n) file
[X] Style (CSS) file
[X] Config (JSON) file
[X] Template (HTML) file
```


A GENERATOR FOR YOUR SUB WIDGETS

- Yeoman generator: [generator-esri-widget](#)



Welcome to Yeoman,
ladies and gentlemen!

```
Welcome to the esri-widget generator.
It is best to run this widget from the parent folder of your package.
So like the /src folder
[?] Widget Name: QueryResults
[?] Description: A widget to show DRS results in a paged grid
[?] Path to widget: widgets/GetResults
[?] Will the template contain other widgets? Yes
create widgets\GetResults\tests\tests.css
create widgets\GetResults\QueryResults.js
create widgets\GetResults\templates\QueryResults.html
create widgets\GetResults\tests\QueryResultsTests.html
create widgets\GetResults\tests\spec\SpecQueryResults.js
create widgets\GetResults\resources\QueryResults.css
```

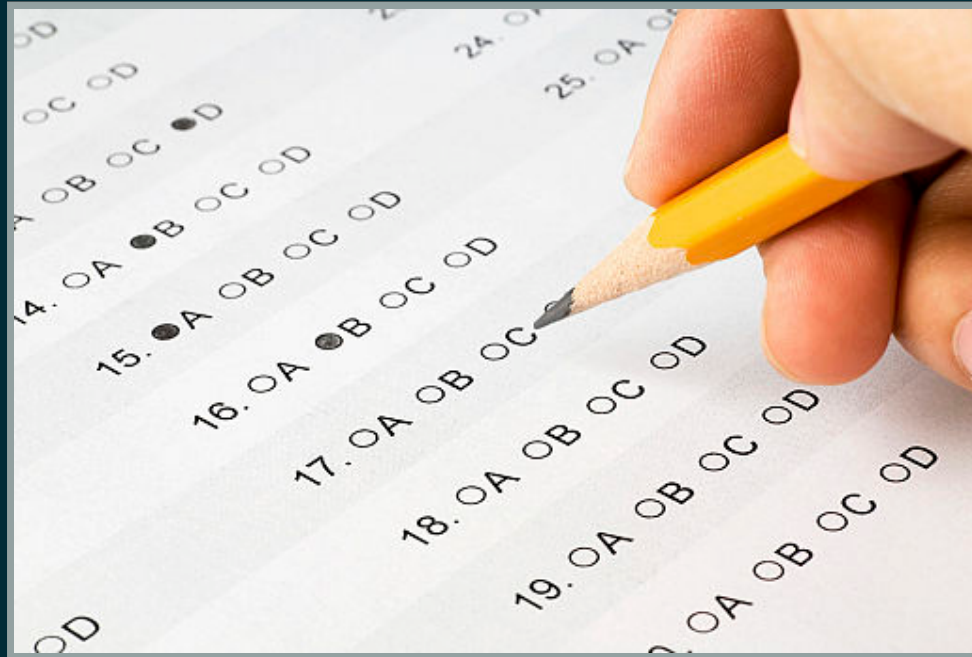
RELATED SESSION

A FEW OF OUR FAVORITE THINGS

Scott Davis

3PM Mesquite B

HOW DO I TEST MY CODE?



qperello

TESTING YOUR CODE...

... and only your code

- Don't test the BaseWidget code
- Test outside the builder environment
 - Use the test specs and pages scaffolded by [generator-esri-widget](#)

DEMO: GENERATING WIDGETS AND RUNNING TESTS

```
C:\code\git\mcs-vgi>karma start
INFO [karma]: Karma v0.12.16 server started at http://localhost:9876/
INFO [launcher]: Starting browser Chrome
INFO [Chrome 36.0.1985 (Windows 7)]: Connected on socket dy0lg2XABnAbWYf8DvZc with
id 88661088
```

```
.....
Chrome 36.0.1985 (Windows 7): Executed 26 of 26 SUCCESS (0.096 secs / 0.022 secs)
```

File	% Stmts	% Branches	% Funcs	% Lines
./src/widgets/Comments\ FeatureReporter.js	53.79 43.96	44.21 37.97	51.43 39.22	53.79 43.96
LayerSelect.js	100	100	100	100
ReportFeatureForm.js	88	75	80	88
All files	53.79	44.21	51.43	53.79

WHERE CAN I FIND OR SHARE WIDGETS?




SHARING

- Sharing:
 - [GeoNet Web AppBuilder Custom Widgets Community](#)
 - github.com/Esri/arcgis-webappbuilder-widgets-themes
 - Pull requests welcome!
- Discover great widgets:
 - <https://github.com/Esri/solutions-webappbuilder-widgets>
 - [Meta: Search](#) (please submit your github links!)
 - More to come - stay tuned.

WHERE CAN I GET HELP?



 62772618@N08

RESOURCES



Here are some resources to get you started:

- Videos:
 - Intro: [UC 2014 - DevSummit 2014](#)
 - Customizing: [UC 2014 - DevSummit 2014](#)
- Documentaion:
 - Online: [Developer Edition \(Download Here!\)](#)
 - Bundled: <http://localhost:3344/webappbuilder/help/>
- GeoNet:
 - [Web AppBuilder for ArcGIS Community](#)

THANK YOU

esri.com/events/session-rater?id=90#18969



grehkemper@esri.com - [@gavinrehkemper](https://twitter.com/gavinrehkemper)  

twayson@esri.com - [@tomwayson](https://twitter.com/tomwayson)  