ArcGIS API for JavaScript: Customizing Widgets

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Agenda

- What can be customized Customization
- approaches with demos Q & A
-

Customizing Widgets

- Theming
  - Changing styles: colors, sizing, font, etc.
- Implementing widget in a different framework
- Altering presentation of a widget

Customization Approaches

- Authoring a theme
- Recreating a view
- Extending a view

Ready?

Level I

Theming

Level I: Theming

Why Theme?

- Match branding.
- Match the map.
- Contrast with the map. Based
- on the environment.
- User-specific (e.g. bigger buttons)

A powerful scripting language for producing CSS.

Why Sass?

- It's modular.
- It's DRY.
- It makes theming easy.

Compiling

Let's Create a Theme!

1. Create your theme directory.
   - `esri/themes/[your-theme-name]/`
2. Create a Sass file in your theme directory.
   - `main.scss`
   - `@import "../base/core";`
3. Compile.
4. Include the compiled CSS in your app.

```
<!-- in your app -->
<link rel="stylesheet" href="esri/themes/[your-theme-name]/main.css">
```

Theme Structure

Avoid writing a bunch of CSS selectors.

Include the theme "core" and override the default values.

Theme Structure

The theme core brings in three main **variable** files:

- `base/_colorVariables.scss`
- `base/_sizes.scss`
- `base/_type.scss`

These set the **default** values.

Theme Structure

Default

```
// Inside base/_colorVariables.scss
$background_color : #fff !default ;
```

Any value assignment overrides the `!default` value.

```
// Inside esri/themes/[your-theme-name]/main.scss
$background_color : #cc4b09;
```

But wait...there's more!

Theme Structure

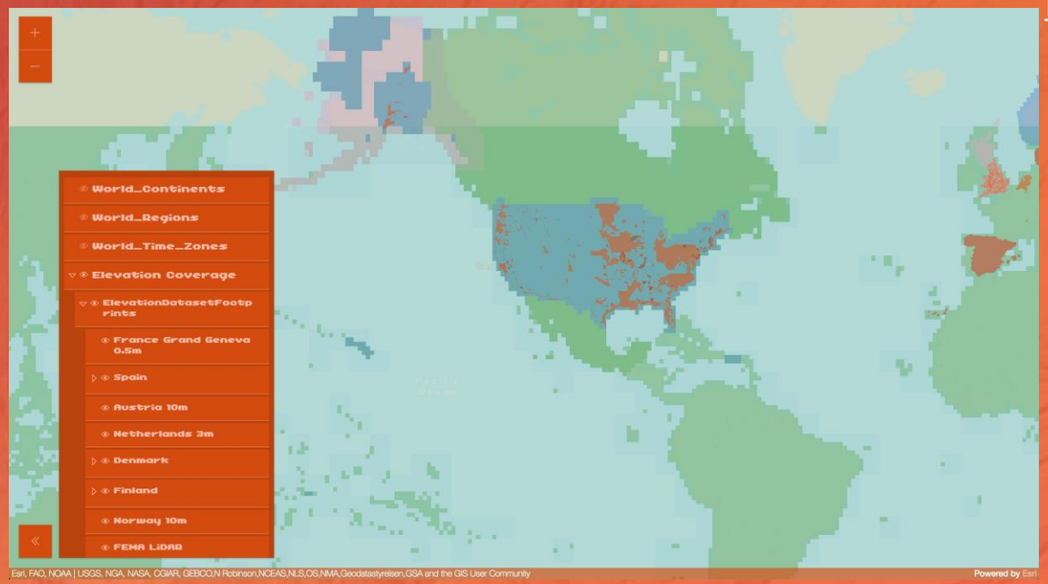
Override the four main color variables...

```
$text_color            : #fff;    // white
$background_color      : #cc4b09; // mario
$anchor_color          : #ffbaaa; // luigi
$button_text_color     : #ffbaaa; // luigi
```

...then magic!

Theming Guide

Demo: Theming



Level I: Theming Recap

- Use Sass for easy theming.
- Theme structure
  - Color
  - Size
  - Typography
- Use the core and override values.

LEVEL UP!

LEVEL II

Views

Level II: Widget Composition

Widgets are composed of Views & ViewModels

- Reusable
- UI replacement
- Framework integration

Level II: Views

- Presentation of the Widget
- Uses ViewModel APIs to render the UI
- View-specific logic resides here

Level II: Working with Views

API Exploration

- LayerList Doc
- LayerList.tsx (View)
- LayerList.scss (Theme)
- LayerList_Sample

Views: Let's customize!

Lets create a custom widget view.

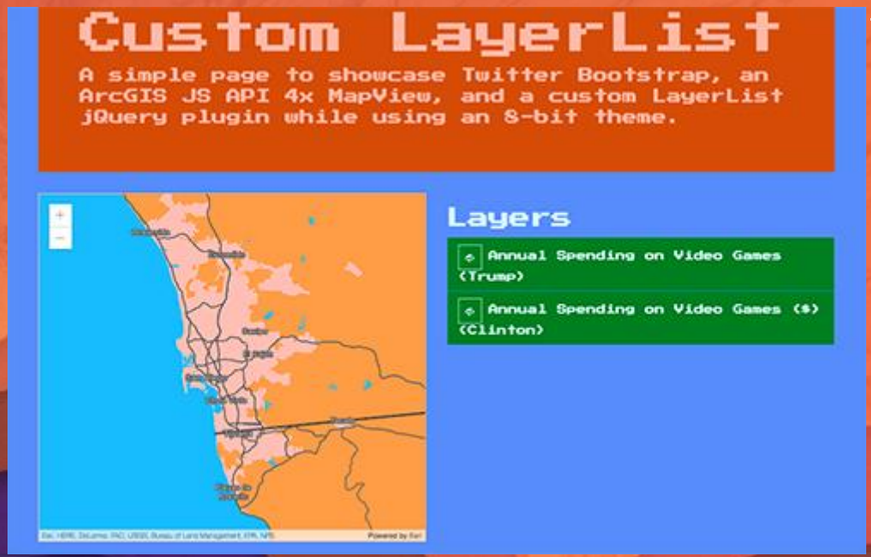
Using...

- jQuery
  - Plugin creation
- Bootstrap

Demo

Create a custom LayerList view for a Bootstrap app

- Demo Steps
- Demo



Level II: Views Recap

What have we learned about Widget Views?

- Views
  - Face of the widget
  - Renders the viewModel brains
  - View separation allows framework integration
  - Views can be downloaded on API docs
  - Can create views in other frameworks using ViewModels

LEVEL UP!

LEVEL III

Extending a View

Level III: Extending a View

- Why?
  - Reusable
  - Same ecosystem
- How?
  - JS API v4.4
  - esri/widgets/Widget
  - TypeScript

`esri/widgets/Widget`

- Provides lifecycle
- API consistency

Lifecycle

- constructor
- postInitialize
- render
- destroy

`render`

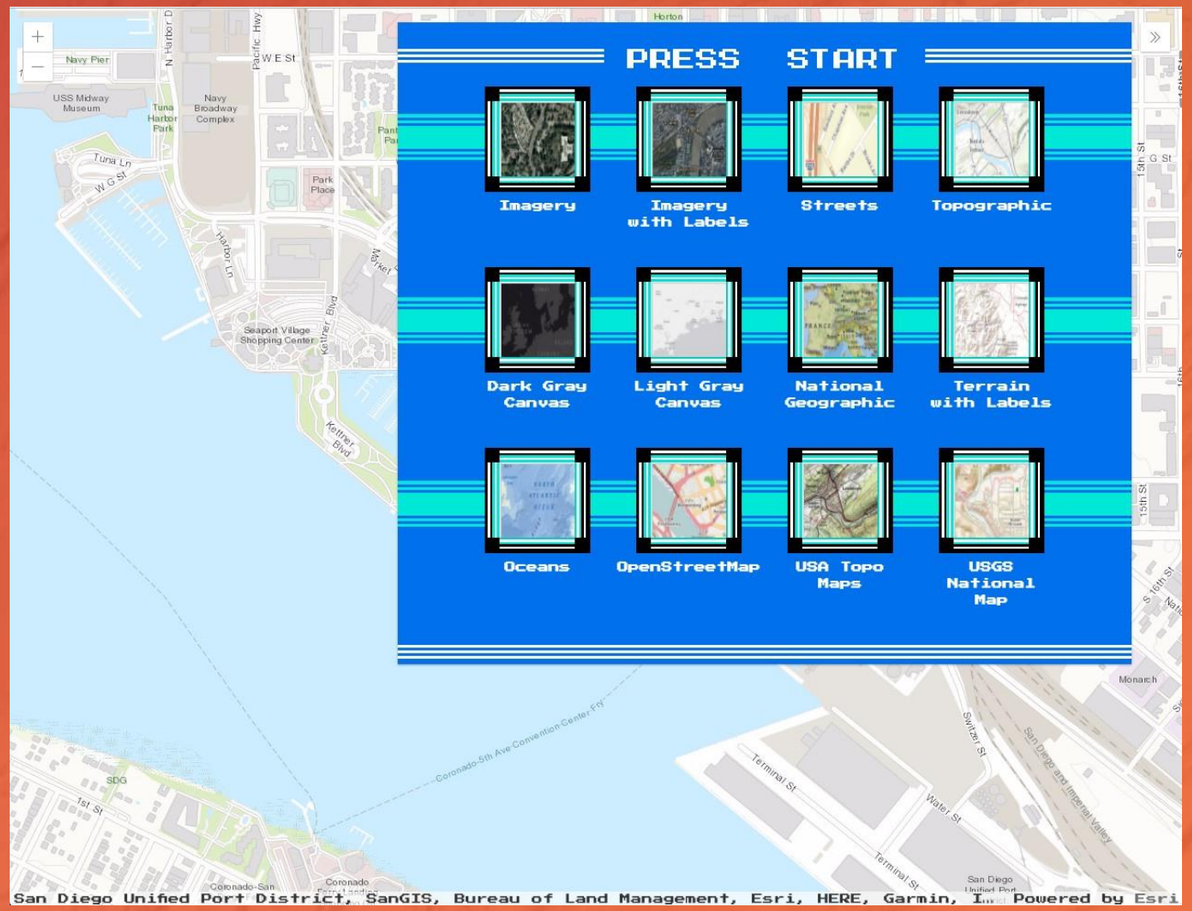
- Defines UI
- Reacts to state
- Uses JSX

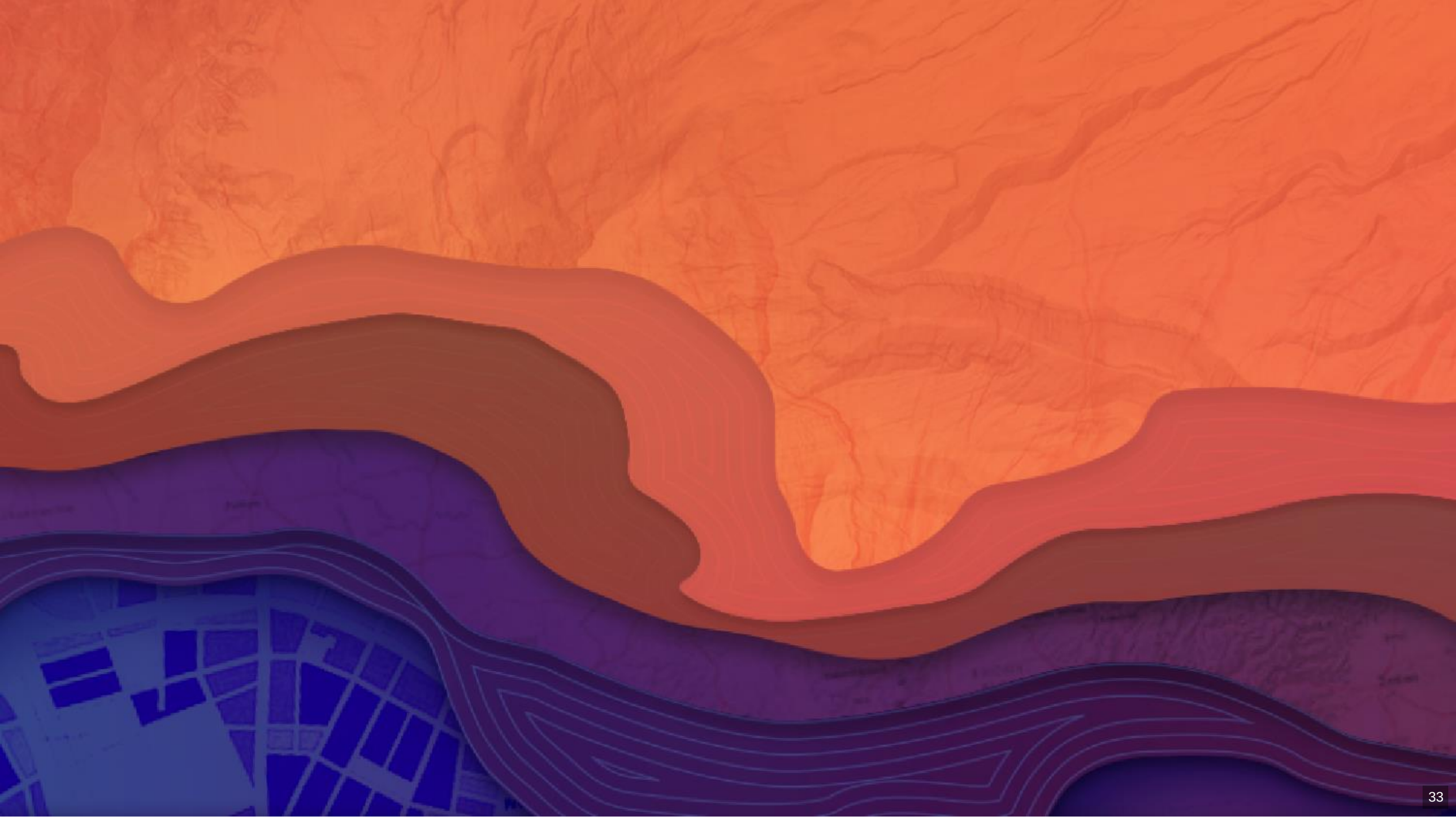
TypeScript

- Typed JavaScript
- JS of the future, now
- IDE support
  - Visual Studio
  - WebStorm
  - Sublime
  - and more!

Demo: Extending a View

Demo Steps





Level III: Extending a View Recap

- Reusable
  - View/ViewModel
- Same ecosystem No
  - extra libraries
- Extended existing widget
  - Lifecycle
  - TypeScript

LEVEL UP!

LEVEL IV

Put it all together.

Conclusion

- Authored a theme
- Recreated a view
- Extended a view

Suggested Session

- Developing Your Own Widget with the ArcGIS API for JavaScript

Additional Resources

- Implementing Accessor
- Setting up TypeScript
- Widget Development JS
- API SDK

The source code!

esriurl.com/customwidgetsuc2017

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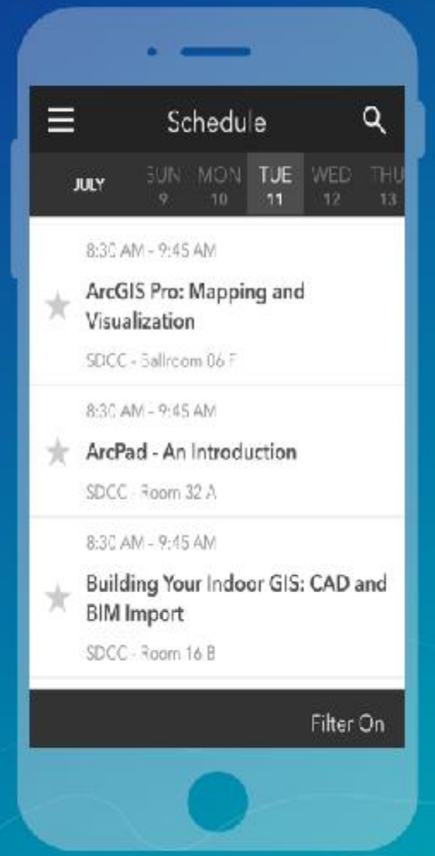
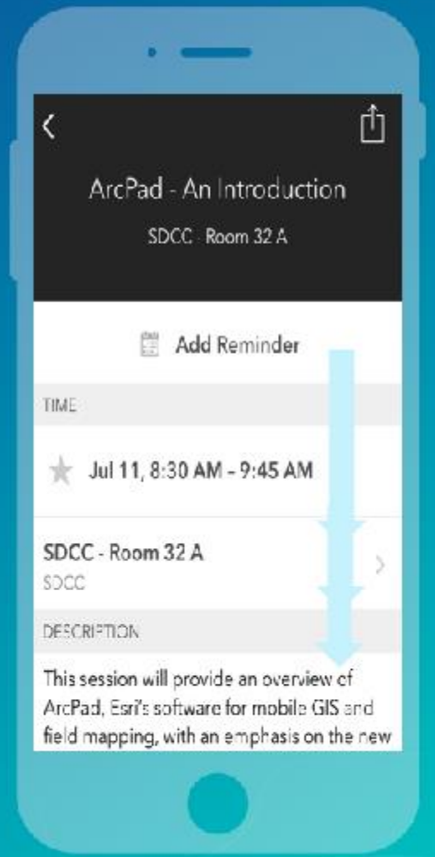
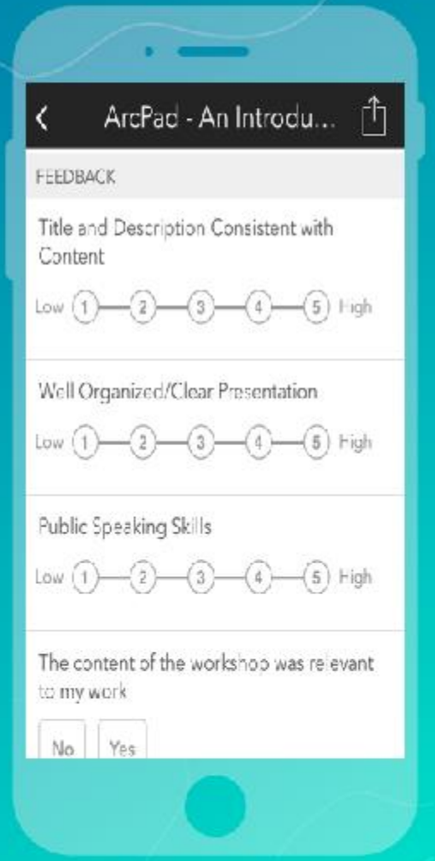


Scroll down to find the survey



Complete Answers and Select "Submit"



Questions?


THANK YOU

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