ILGISA Configurable Map Viewer (CMV) Presentation

Presentation given by Wig Ingente, David Arfa, and Greg Roberts
Presentation date Wed, Oct. 19, 1:15-2:15pm in Cypress Room at ILGISA Conference

Title: *How to customize Configurable Map Viewer*
Description: Configurable Map Viewer (CMV) is a free JavaScript application template that consumes ArcServer map services to create easy-to-use internet based interactive mapping applications. Cook County GIS has customized the Configurable Map Viewer for numerous mapping applications. In the workshop Cook County GIS will present some of the applications developed in-house, show where to download the basic CMV, demonstrate some of the simple configuration, and show some custom tools.

I. Demonstrate CMV applications configured and customized by Cook County GIS **(Wig)**. Use links from Maps and Data page.
   a. TIF Viewer
      i. First CMV application customized by Cook County
      ii. Purpose: To display TIF revenue since 1983 for all municipalities in Cook County.
      iii. Customization: The interactive table, nested searches queries, and exporting the tabular results.
   b. Cook County Sheriff Reentry Assistance
      i. Purpose: To create a list of helpful resources within specific distances of user identified locations.
      ii. Primary Users: Sheriff staff and family of incarcerated people
      iii. Customization: The buffer select tool that creates the PDF. Additional plug-in called jspdf was used.
   c. Construction Projects
      i. Stripped down version of CMV
      ii. Purpose: To display all DOTH construction projects that will be started in 2016.
      iii. Customization: Interactive table and eliminating sidebar with additional tools.
   d. Fishing Lakes
      i. Purpose: To share bathymetric maps with people who like to fish at the Cook County Forest Preserve.
      ii. Show the responsive design by narrowing the browser window. CMV is mobile friendly.

iii. Customization: Interactive table

e. Highway Jurisdiction
   i. Very little custom code
   ii. Purpose: To display Cook County Jurisdiction roads as a reference to the DOTH permit office and trucking companies who need to purchase permits.

II. Demonstrate map services and simple configuration **(David)**

a. Application map services have been published onto ArcGIS Server
   i. Services designed specifically for each application using MXDs
   ii. REST endpoint
      1. Custom Address Locators
      2. Custom cached base maps
      3. Dynamic map services for individual applications

b. CMV website
   i. Preview basic site and review the tools
   ii. Download code via GitHub

c. Configure quick interactive test map
   i. Set-up IIS on development computer, if not already done
   ii. Copy the viewer folder of the CMV download into the wwwroot folder in your C drive
   iii. Rename the Viewer folder to whatever SiteName
   iv. Open IIS, expand until "Default Web Site" is visible, right click, Add Application, type a web site name in the "Alias" box, and browse to the SiteName\Viewer folder as they "Physical path", finally click OK
   v. Test the new site by opening a web browser and typing in http://localhost/SiteName
   vi. Editing of the site can be done using NotePad++ which can be downloaded free
   vii. Using a text editor, update title in the SiteName\index.html
      1. Update line 9 (tab name)
      2. Update line 22 (Title Heading)
      3. Update line 26 (sub-heading)
   viii. Update base maps in the SiteName>js>config>basemaps.js
      1. Update list of AGOL basemaps (lines 17-40) use the "/* */" convention to comment lines out be careful about commas and brackets.
      2. Browse places to configure custom basemaps (lines 42-90)
   ix. Select tools for application in the SiteName\js\config\viewer.js

1. The tools aka widgets are listed in lines 132-428
    a. Any widget that is not needed can be adjusted so the "include:" parameter is changed from true to false.
    b. To adjust the order of the sidebar tools change the "position:" parameter number. The count starts at 0.
    c. If you would like the tool to be open by default change the "open:" parameter to true.

x. Update dynamic map service in the SiteName\js\config\viewer.js
    1. Add a new dynamic map service from FEMA to map as an example
        a. Explain difference between feature service and dynamic service
        b. Copy existing dynamic service on lines 94-112 and adjust it to use the FEMA map service
            i. Replace URL on line 96
            ii. Change title on line 97
            iii. Change id on line 99, this is used as a shorthand in the application
            iv. Customize identifiable layer ids on line 105. Any layers in the brackets will be identifiable by a user with a click e.g. layerIds: [3, 14, 16, 28]
            v. If desired hide layers on line 109

xi. Configure Find widget in the SiteName\js\config\find.js
    1. Copy existing dynamic service on lines 5-23 and adjust it to use the FEMA map service layers
    2. Replace URL on line 26
    3. Specify only layer 22 in line 27 e.g. layerIds: [22]
    4. Specify the search fields in line 28 e.g. searchFields: ['POL_NAME1', 'POL_NAME2', 'POL_NAME3']
    5. Specify how the search result grid will be formatted on line 31 e.g. { field: 'POL_AR_ID', label: 'Area ID'}, { field: 'POL_NAME1', label: 'Name 1', width: 100, sortable: true, resizable: false }, { field: 'POL_NAME2', label: 'Name 2', width: 100, sortable: false, resizable: false }, { field: 'POL_NAME3', label: 'Name 3', width: 100, sortable: false, resizable: false }

III. Explain customization and development of new tools **(Greg)**

a. ArcGIS API for JavaScript
b. Demo of Chrome developer tools
    i. Adjusting CSS- CSS is what defines the style of elements in the application, e.g. what font and font colors are used, what buttons look like, what is the background color or design.
    ii. Reviewing console for errors
c. Creating a new Quick Find tool (widget)
    i. Copy, paste, and rename SiteName\js\gis\dijit\Search.js to QuickFind.js. The xxxx.js file is what provides the functionality to the widget.
    ii. Copy, paste, and rename the folder SiteName\js\gis\dijit\QuickFind\templates\Search.html to QuickFind.html. The xxxx.html file is what provides the basic lay out of the user interface.
    iii. Copy and paste the search tool configuration in SiteName\js\config\viewer.js. Near line 232.
    iv. Review the pieces (html and js) within the finished QuickFind widget
d. Tips for keeping CMV up to date with the latest version