



ESRI DEVELOPER SUMMIT 2023

Data Sources

Key points

- Data drives the experience
- Share data between widgets
- Pipe data from one widget to another
- Abstraction - changing a data source does not break the app

Data source

- Defines how widgets access data
- jimu-core defines the DataSource interface with common methods and properties:
 - <https://developers.arcgis.com/experience-builder/api-reference/jimu-core/DataSource>
 - Custom data sources can be created by using the DataSource interface
 - Manage with DataSourceManager
 - <https://developers.arcgis.com/experience-builder/api-reference/jimu-core/DataSourceManager/>

Common classes and interfaces

<https://developers.arcgis.com/experience-builder/api-reference/jimu-core/>

- DataSourceManager
 - Provides access to all the datasources in the app
- DataSourceComponent
- DataSource
 - getSelectedRecords()
 - nextRecord()
 - getStatus()
 - getData()
 - getId()
- QueriableDataSource
 - updateQueryParams
 - load
 - query()
 - getRealQueryParams()
- FeatureLayerDataSource
- WebMapDataSource/WebSceneData source

How are data sources persisted?

- Saved in the dataSources property of the app config
 - Use of a datasource is declared with useDataSources Property
- config location:
 - server\public\apps\<app_id>\resources\config\config.json

```
1427 "dataSources": {  
1428   "dataSource_1": {  
1429     "id": "dataSource_1",  
1430     "type": "WEB_MAP",  
1431     "sourceLabel": "DS2023 - Regional Offices",  
1432     "itemId": "fecde6493224443ba8b2c77b633dd482",  
1433     "portalUrl": "https://arcgis-devlabs.maps.arcgis.com"  
1434   },  
1435   "dataSource_2": {  
1436     "id": "dataSource_2",  
1437     "type": "WEB_MAP",  
1438     "sourceLabel": "Regional Office Boundaries",  
1439     "itemId": "444d345cd3084d8c8a8e1e3c2eaca25f",  
1440     "portalUrl": "https://arcgis-devlabs.maps.arcgis.com"  
1441   },  
1442   "dataSource_3": {  
1443     "id": "dataSource_3",  
1444     "type": "WEB_MAP",  
1445     "sourceLabel": "Regional Office Boundaries",  
1446     "itemId": "444d345cd3084d8c8a8e1e3c2eaca25f",  
1447     "portalUrl": "https://arcgis-devlabs.maps.arcgis.com"  
1448   }  
1449 },  
1450 "messageConfigs": {  
1451   "messageConfig_1": {  
1452     "id": "messageConfig_1",  
1453     "widthId": "width_1"
```

Accessing data sources in your widget

- Widget dependent on map (e.g., bookmark, legend, survey)
 - widget.tsx
 - JimuMapView
 - setting.tsx
 - JimuMapViewSelector
- Widget is not dependent on map
 - widget.tsx
 - DataSourceComponent
 - setting.tsx
 - DataSourceSelector
 - FieldSelector


```
current_layer = QgsMapLayerRegistry.instance().mapLayersByName('Hatched')
if len(current_layer) == 0:
    print('No hatched layer found')
else:
    current_layer = current_layer[0]
    print('Hatched layer found: %s' % current_layer.name())
```

Data source walkthrough

...

```
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if len(current_layer) == 0:
    print('No hatched layer found')
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```

Activity

40 Minutes

- Download and install the 'get-map-coordinates-function' widget from github
 - <https://github.com/Esri/arcgis-experience-builder-sdk-resources/tree/master/widgets/get-map-coordinates-function>
 - Explore the code and add to an application
 - How is a reference to the map datasource made?
- Download and install the 'listen-selection-change' widget from github
 - <https://github.com/Esri/arcgis-experience-builder-sdk-resources/tree/master/widgets/listen-selection-change>
 - Explore the code in this widget and add to an application
 - How is the reference to a datasource accomplished in this code?
- ** Challenge: In the 'listen-selection-change' widget add a field selector to the settings to allow end users to modify which field is used to display on the widget.



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