Arcade: An Introduction

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What is Arcade?

• A new expression language for the ArcGIS Platform
  - Primarily designed for embedded expression cases
    - Labeling
    - Rendering
    - Symbol variation
    - Range aliases
    - Future uses

• Not a replacement for Python for geoprocessing and automation
Why a new scripting language?

• We need a portable language for embedded expressions
  - Pain point for sharing across the ArcGIS Platform
• Why not just use JavaScript, or Python, or Lua, or etc.?  
  - Security
    - Cross-site scripting concerns with languages like JavaScript
  - Portability - including size
    - Python and Lua interpreters are challenging in JavaScript
    - Python has a large runtime
  - GIS specific functionality
    - Native support for features, geometries etc.
Arcade in the ArcGIS Platform

- ArcGIS Online (December 2016 release)
  - 2D only at this time
- JavaScript API 3.19
- Runtime 100+
- ArcGIS Pro 1.4+
- ArcGIS Enterprise 10.5+ (when published from ArcGIS Pro)
  - Look for the *ArcGIS Enterprise 10.5 Service Publishing Patch*

- Each implements version 1.0.0 of Arcade.  Pro 2.0, 10.5.1, AGOL June 2017) implement 1.1.0 of Arcade
Arcade in use

- Arcade is has been used in ArcGIS Online for a year or so
  - Predominance renderer
  - Some of the time renderers (e.g. Age)

- We can add new symbology options without significant new development across the platform
  - Users will be able to do this as well with their own expressions
Arcade in ArcGIS Pro

• **Labeling**
  - Demo
  - Arcade is now the default language

• **Symbology in Pro / Enterprise & ArcGIS Online**
  - Class breaks
  - Unique value
  - Rotation, Size, Color, and Transparency visual variables
  - Demo  [Sample Arcade Expressions](#)
Expression

```
Round($feature.Area * 0.000247105,3) + " Acres"
```
Language reference

- On ArcGIS for Developers: https://developers.arcgis.com/arcade/
  - Includes a language playground for experimenting with the language
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