

WORKING WITH PYTHON IN ARCGIS PRO

David Wynne

Working with Python in ArcGIS Pro

SDCC - Tech Theater 19 Exhibit Hall A

Come learn about recent developments in the Python experience within ArcGIS Pro. We will highlight various aspects of Python, arcpy, and other Python-related functionalities, focusing on the most recent additions.

Categories - - Technical Workshops, Performing Analysis

**Focus mainly on changes with
ArcGIS Pro 1.4 and 2.0**

- Conda
- Charting
- arcpy.mp
- Describe

Conda – Why Packages?

- Software is composed of many smaller components, often called packages or libraries
- It's often better to reuse code that solves a problem well rather than recreating it
- But, sharing code is a **hard problem**.
 - Do you have the same packages of the same versions as the developer did?

Package Management for Python

- Why not pip, wheels, virtualenvs?
- Don't handle the harder problem of system dependencies, considered out of scope by Python packagers – does it end up in site-packages?

Why Conda?

- Scientific Python community identified that there was a gap not being addressed by the core Python infrastructure, limiting their ability to get packages into the hands of users
- Industry standard built by people who care about this space — Continuum Analytics

The Conda logo features the word "CONDA" in a bold, green, sans-serif font. The letter "C" is stylized with a white DNA double helix structure winding around it.The Continuum Analytics logo consists of a stylized icon above the company name. The icon is a dark blue circle with a green and blue infinity-like symbol inside. Below the icon, the word "CONTINUUM" is written in a large, bold, grey sans-serif font, and the word "ANALYTICS" is written in a smaller, bold, green sans-serif font below it.

Why Conda?

- It solves the hard problem:
 - Handles dependencies for many languages
 - Built for Python first, but it really solves a much broader infrastructural issue.
- Gateway to data science — scientific, analytics, integrated software ecosystem for organizations



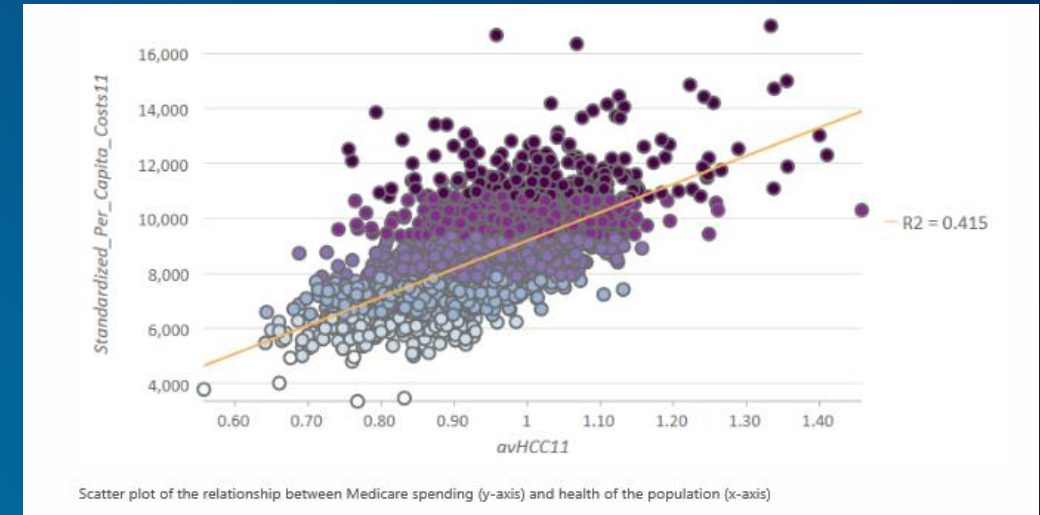
Conda

Demo



Charts

- In ArcGIS Pro, you can make several types of charts that visualize various characteristics and relationships in data



- The Chart class defines an ArcGIS Pro chart
 - Supports different types of charts, including bar charts, line charts, histograms, and scatter plots
 - Can use the class to define the chart title, axes, and other properties
- <http://pro.arcgis.com/en/pro-app/arcpy/classes/chart.htm>

Charts

Demo



arcpy.mp

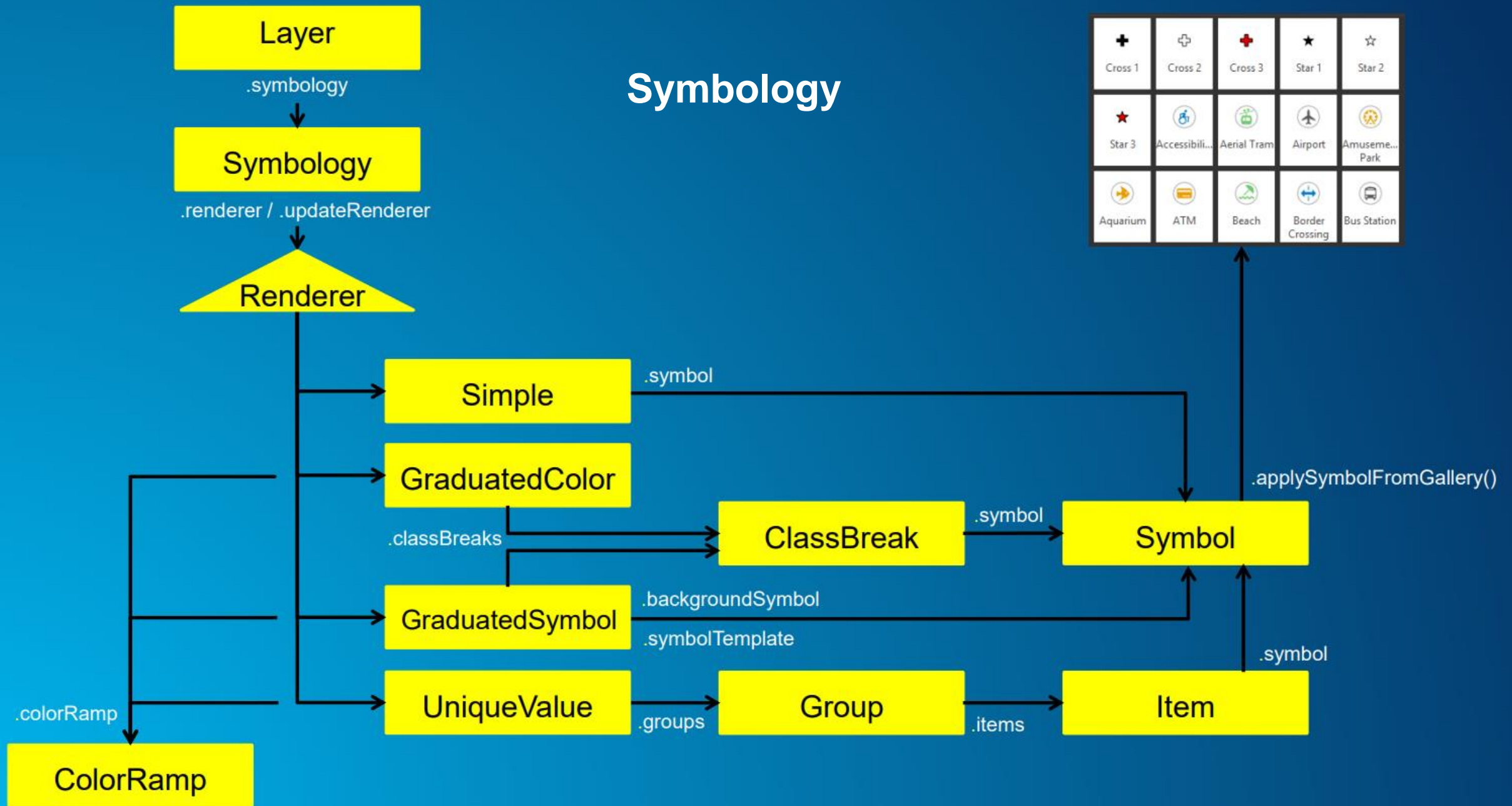
- 1.4

- **Modify feature layer renderers**
 - Change renderer properties and modifying the symbol properties
 - SimpleRenderer, GraduatedColorsRenderer, GraduatedSymbolsRenderer, and UniqueValueRenderer
- **Add basemaps with the Map's addBasemap method**
 - Also identify which layers are basemap layers using the Layer's isBasemapLayer property
- **Add file-based and service layers using the Map's addDataFromPath method**
 - It allows you to add a layer to a map using a path or URL

- 2.0

- **Legend synchronization options with its map layers**
- **Support for the RasterClassifyColorizer and RasterUniqueValueColorizer.**

Symbology



arcpy.mp

Demo



Describing data

- `arcpy.Describe` is a critical part of many scripts
 - Provide info about data that can be used to control the flow of a Python script
- But the object can be *cumbersome* to work with
 - It's dynamic, but provides no drop-downs
 - Have to “know” or keep running to the documentation
- `arcpy.da.Describe` provides all the same information but returns it as a dictionary

arcpy.da.Describe

Demo



Please Take Our Survey on the Esri Events App!

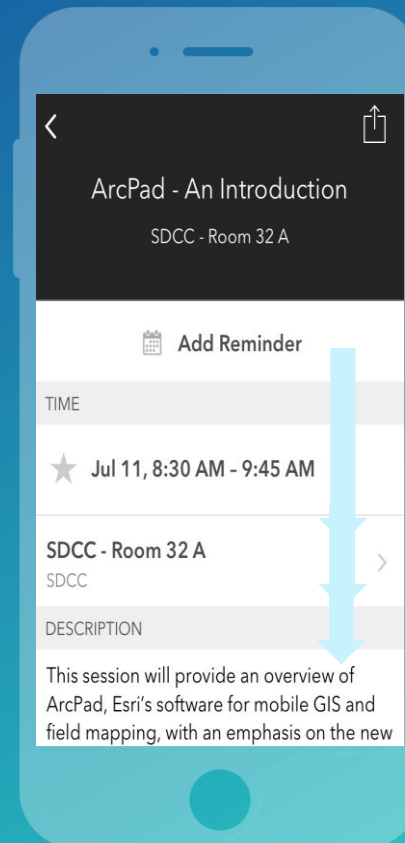
Download the Esri Events app and find your event



Select the session you attended



Scroll down to find the survey



Complete Answers and Select "Submit"





esri

THE
SCIENCE
OF
WHERE