

Training the GIS Professional

Writing Advanced Scripts Using Python - 1 day

Overview

Python is an integral part of the ArcGIS System – it is used for automating geoprocessing tasks, data management processes and the maintenance of your maps, as well as managing and administering huge parts of your on-premise or online portal.

This course will provide you with some advanced programming techniques while suggesting best practices which will aid the running and management of your Python scripts.

Please be aware that this course contains no instruction on how to perform geoprocessing using ArcPy or the ArcGIS API for Python.

This course is based on version 3.11 or higher of Python although the techniques taught in this course can be used with the 3.6 release of Python.

Who should attend

- GIS Users
- GIS Technical Leads
- GIS Desktop Application Developers
- GIS Application Developers

Prerequisites

This course is aimed at those who have Python experience. You will be expected to know how to write Python scripts and will have attended the following course or have the equivalent experience: "Getting Started with the Python Scripting Language".

Goals

- Create Functions.
- Accessing modules.
- Working with Python classes.
- Creating robust log files.
- Building user interfaces in standalone applications.

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Topics Covered

- Working with functions. What is a function? Characteristics of a function; Determine appropriate function names; Documenting functions; Using * and ** operators.
- Accessing modules and module security. Locations to import modules; Updating a compiled Python file; Function-level security.
- Working with Python classes. What is a class? How do you create a class? The `__init__()` method; Creating attributes for the class; Instantiating the class; Creating methods; Introducing abstraction and inheritance.
- Adding logging functionality. Create a simple text file for logging; Introducing the logging module; Use the `logging.basicConfig()` function to create robust log files; Learn how to create a custom logger object; Accessing the logger object from multiple code modules; Capturing run-time errors in log files.
- Creating Graphical User Interfaces: What GUI toolkits exist for Python; Creating a tkinter form; tkinter widgets; Displaying widgets on forms; Resizing the form; Working with callbacks.