GeoData

ArcGIS Model builder - Streamlining data processing

COURSE OUTLINE

This practical, one-day hands-on course provides an introduction to the ArcGIS model builder and how you can use it to streamline data processing tasks. You will be introduced to ArcToolbox and gain a deeper understanding of ArcMap geoprocessing tools. You will learn how to construct a model, make it loop, expose parameters to turn it into a Model tool for embedding and integrating Python scripts into the model builder environment. The course comprises hands-on exercises each introduced with a short presentation.

This course is intended for regular users of ESRI's ArcMap software who wish to improve their technical knowledge to automate data processing.

ANTICIPATED COURSE OUTCOMES / ACHIEVEMENTS

Aims and objectives

- To widen delegate's experience beyond the core functionality of ESRI's ArcGIS software package by introducing the concept of data processing automation.
- Learn about the geoprocessing environment and its integration with model builder.
- Develop the skills required to build and run geoprocessing models.
- Understand the anatomy of the geoprocessing tool

Learning outcomes - by the end of the course, delegates will understand how to:

- Create a Toolbox in ArcToolbox.
- Change application level Geoprocessing options.
- Construct a model.
- Loop a model using an iterator and control the order of operations.
- Convert a model to a *Model Tool* and embed within another model.
- Embed existing Python scripts and expose as a *Script Tool* to the geoprocessing environment.

For further information please contact:
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Presentations and exercises

1 - Introduction to the ArcToolbox

What is model builder and why use it?
ArcToolbox
Find existing tools

Exercise 1 – Creating a Toolbox in ArcToolbox

2 – The Geoprocessing tool

The anatomy of a Geoprocessing tool
Using Help
Environment settings
IN_MEMORY workspace

Exercise 2 – Exploring a geo-processing tool

3 – Results and Geoprocessing options

Control tool behaviour:
- Overwrite
- Add to display
- Background processing

Results Window
- Re-Run
- Open
- Copy as python snippet

Exercise 3 – Results and geoprocessing options

4 – Model builder application

Model builder
Elements of a model
Run a model
Changing the properties on an element

Exercise 4 – Create a model

5 – Run a model multiple times (looping)

Loop a model
The iterator
In-line substitution

Exercise 5a – create a model that uses an Iterator
Exercise 5b – Use an Iterator to split data into separate datasets

6 – Controlling the order of processing

Use preconditions to set processing order

Exercise 6 – Controlling the order of processing

7 – Convert a model to a Model Tool

Convert a hardwired model into a generic Model Tool.
Rename and reorder parameters
Set a filter
Enhance the model with documentation

Exercise 7 – Expose parameters, make the model generic

8 – Embedding models

Learn why and how to embed a model within another

Exercise 8 – Embedding models within models!

9 –Create a Python Script Tool

Learn why and how to expose an existing Python script to the model builder environment

Exercise 9 – Wiring up python scripts to be used in model builder

10 –Trouble shooting and advanced topics

A short end of day presentation demonstrating a few examples of advanced topics and when things go wrong…

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