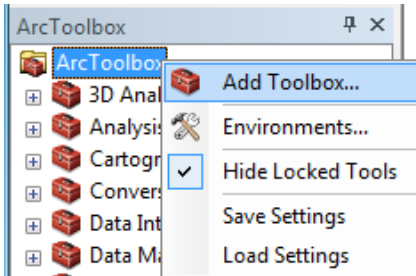
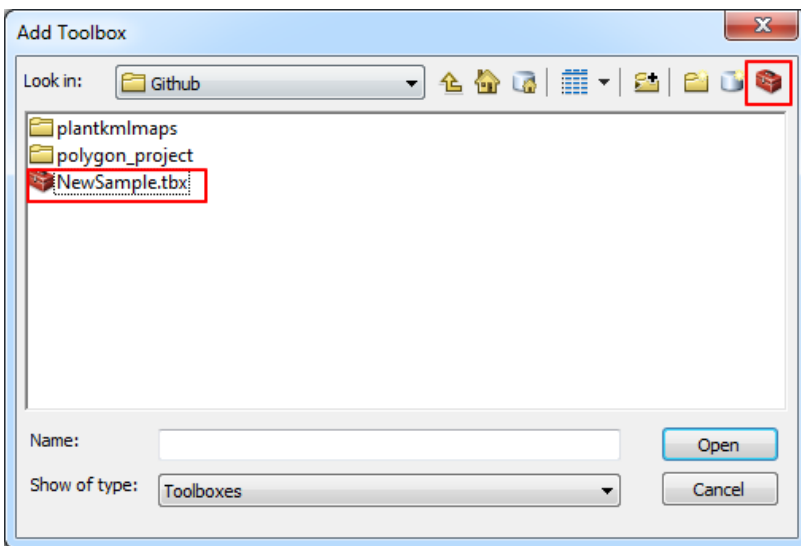


Creating a Toolbox with Customized Python Script-based Tool

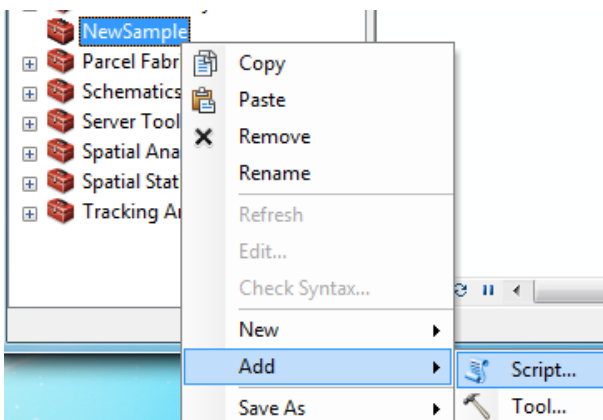
In ArcMap, open the ArcToolbox window. Right click on the main ArcToolbox and choose “Add Toolbox”.



Create a new toolbox using the tool on the upper right of the dialog. Then give the toolbox a name and select “Open” to add it to ArcToolbox window.



In the ArcToolbox window, right click on the new toolbox go to Add -> Script.



Give the script tool a name, label and description as desired. Make sure both the checkbox options are selected. Browse to where the script is located.

The image shows two side-by-side "Add Script" dialog boxes. The left dialog has fields for "Name:" (OverlayTool), "Label:" (Overlay Tool), and "Description:" (Takes in a polygon shapefile and returns a csv report that contains species name and vulnerability index). It also has a "Stylesheet:" field with a browse button. At the bottom, there are two checked checkboxes: "Store relative path names (instead of absolute paths)" and "Always run in foreground". The right dialog has a "Script File:" field with the path "E:\Cloud\Github\polygon_project\poly_overlay.py" and a browse button. It also has two checkboxes: "Show command window when executing script" (unchecked) and "Run Python script in process" (checked). Both dialogs have "< Back", "Next >", and "Cancel" buttons at the bottom.

For each parameter, just start typing the name in an empty line. Select a data type from the drop down list next to each parameter. Each data type behaves differently on the tool interface. For the “Folder”, “File”, and “Shapefile” types, a browse button will appear next to the input textbox. The “String” data type defaults to a simple input textbox. The names given here are also the labels that will appear in the tool interface. Set the Type parameter for “Auxillary table...” to optional. Otherwise, all the defaults are fine for the parameters properties since they default to being an input.

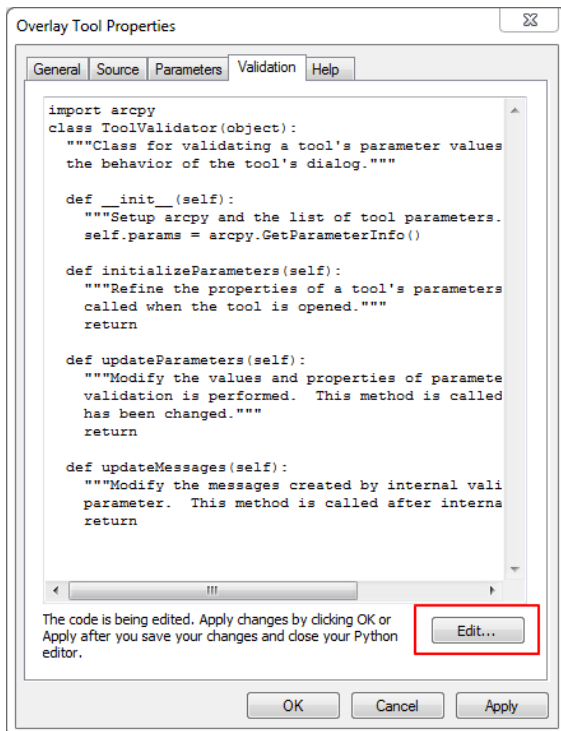
The image shows the "Parameters" tab of a software interface. It contains a table with two columns: "Display Name" and "Data Type". The parameters listed are:

Display Name	Data Type
Root working directory f...	Folder
Full path to polygon sha...	Shapefile
Report location	String
Auxillary table to append	File

Below the table, there is a section for "Parameter Properties". It shows the following properties:

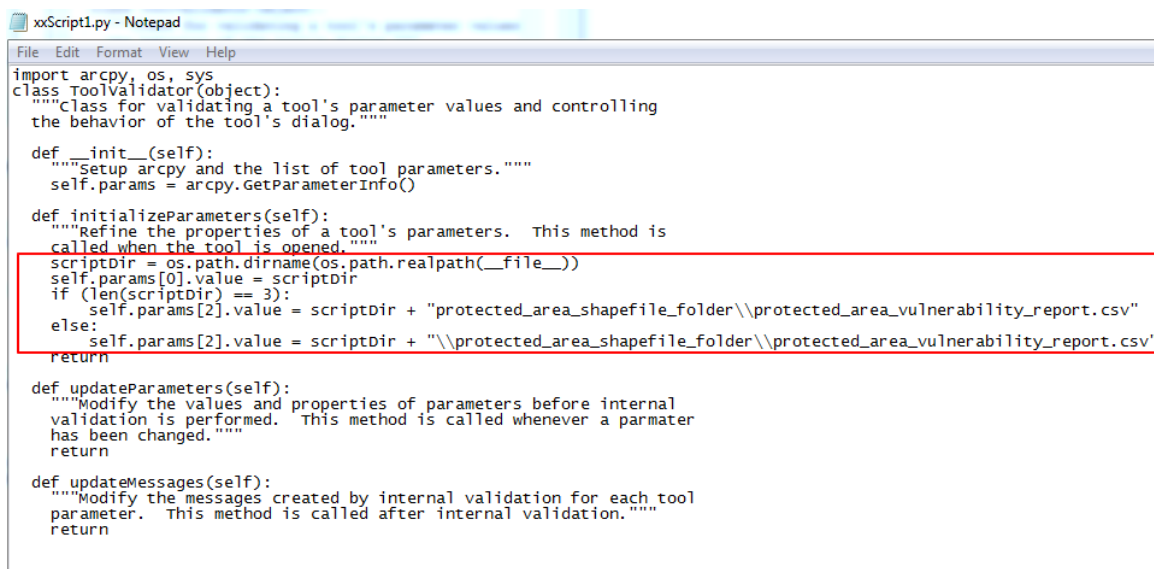
Property	Value
Type	Optional
Direction	Input
MultiValue	No
Default	

Once we're finished, we need to go back in and make changes to get some defaults to behave correctly. Right click on the tool and select "Properties". Go to the "Validation" tab and select the "Edit..." option. This should open Notepad (or your default text editor) with the script. (NOTE: I would copy the text to an IDE like PyScripter or Komodo to make sure the syntax and indentation are correct to avoid issues.)



Under the `def initializeParameters(self):` section, you'll want to add these lines. These

```
scriptDir = os.path.dirname(os.path.realpath(__file__))
self.params[0].value = scriptDir
if (len(scriptDir) == 3):
    self.params[2].value = scriptDir + "protected_area_shapefile_folder\\protected_area_vulnerability_report.csv"
else:
    self.params[2].value = scriptDir +
"\\protected_area_shapefile_folder\\protected_area_vulnerability_report.csv"
```



Line 2 should set the root folder parameter to match where the script is located.

Line 3-6 should ensure that the output defaults to the name denoted and placed in the same folder as the script.

When you're done making changes, be sure to save in that Notepad session. That will commit it back to the toolbox.

To add help for the tool itself, go back to the ArcToolbox window, right click on the script tool and select "Item Description."

Item Description - Overlay Tool

Description

Print Edit

Overlay Tool

Title Overlay Tool

Summary
Takes in a polygon shapefile and returns a csv report that contains species name and vulnerability index

Usage
Provide a root directory and path to the input shapefile to be used for overlaying

Syntax
OverlayTool (Root_working_directory_for_data_and_tools, Full_path_to_polygon_shapefile_for_overlay, Report_location)

Parameter	Explanation	Data Type
Root_working_directory_for_data_and_tools	Dialog Reference	Folder

The form should resemble the metadata editing form.

Item Description - Overlay Tool

Description

Save Exit

Summary (Abstract)

B I U A* A* Takes in a polygon shapefile and returns a csv report that contains species name and vulnerability index

Usage

B I U A* A* Provide a root directory and path to the input shapefile to be used for overlaying

Syntax

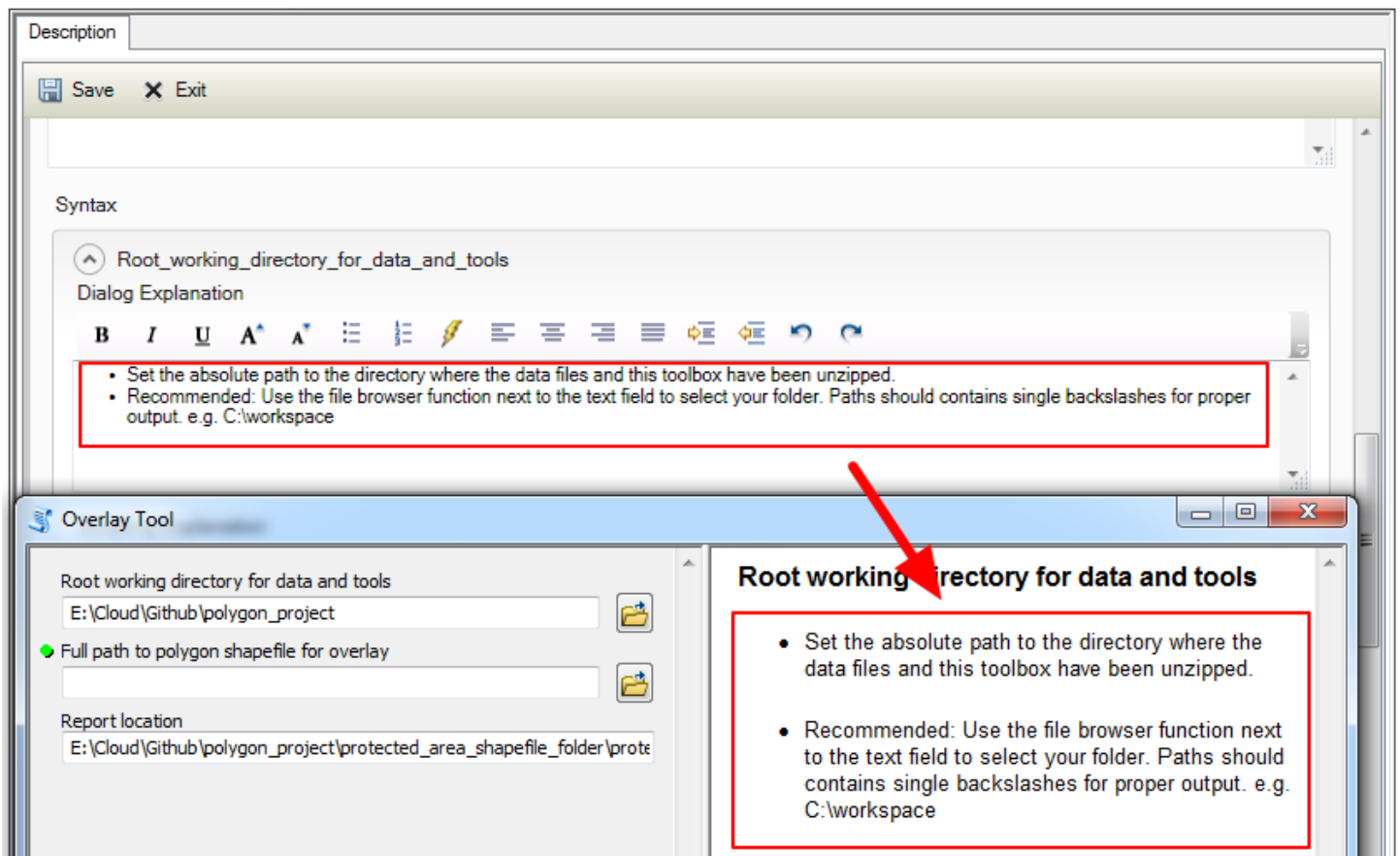
Root_working_directory_for_data_and_tools

Dialog Explanation

B I U A* A*

- Set the absolute path to the directory where the data files and this toolbox have been unzipped.
- Recommended: Use the file browser function next to the text field to select your folder. Paths should contains single backslashes for proper output. e.g. C:\workspace

Edit the Dialog Explanation to add information to the Help menu for the tool's parameters.



That's likely the most useful of the fields for a user.

Remember to click the Save button to commit the changes.