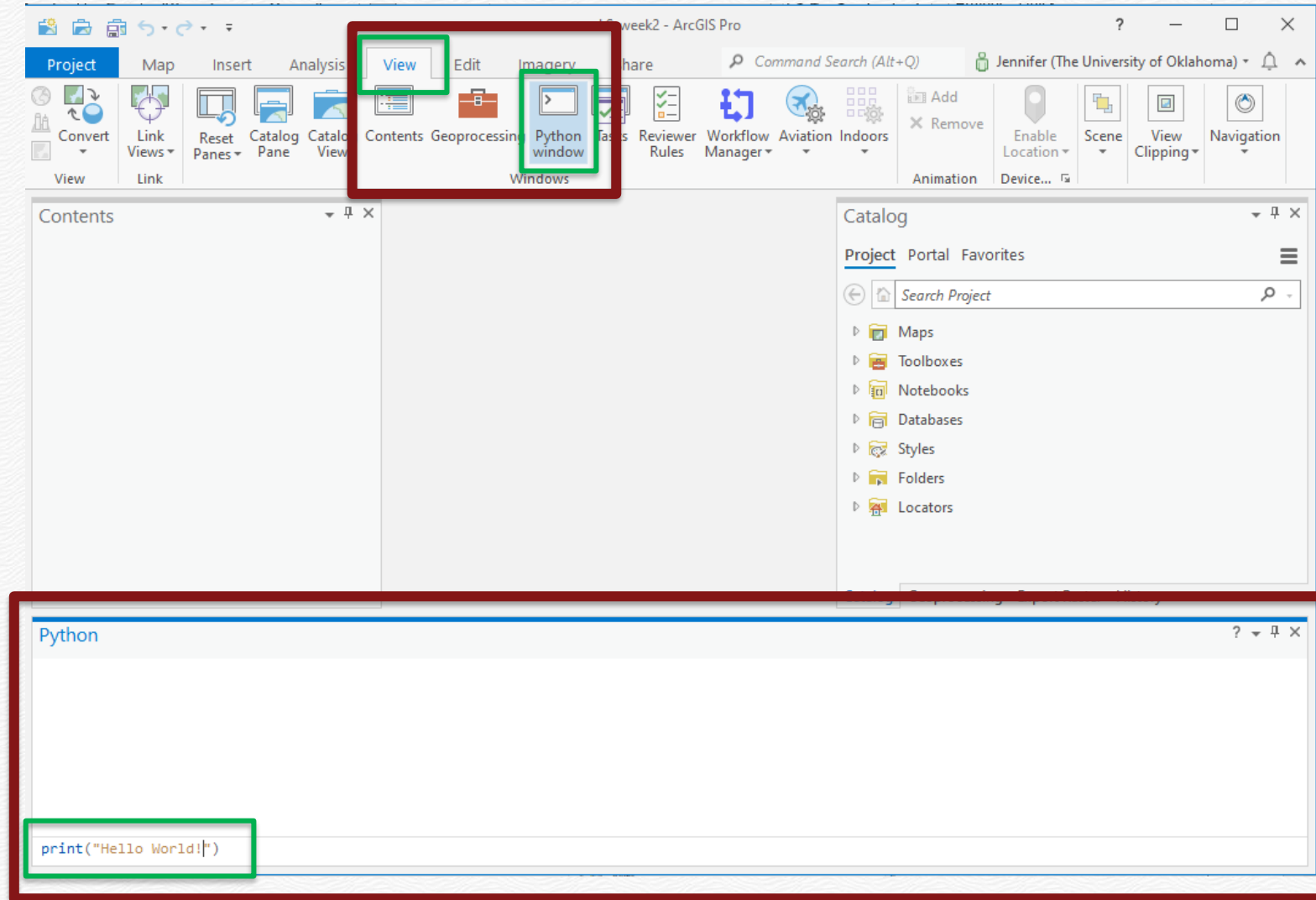


Working with Rasters and Units

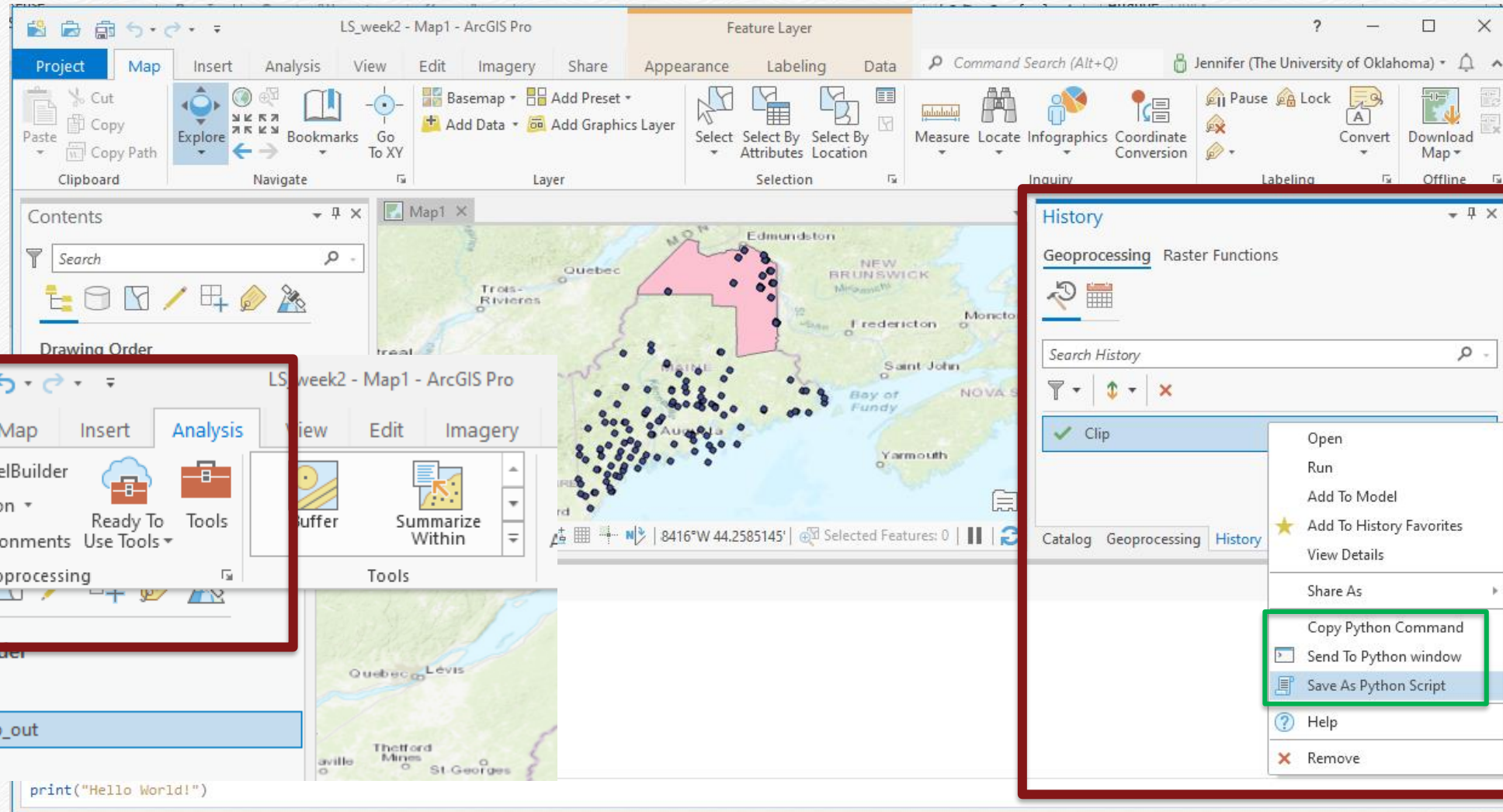
GIS 5653 – Spatial Programming and GIS



Python Window



Python from History Window



Python from Model Builder

The screenshot displays the ArcGIS Pro Model Builder interface. The main window shows a model diagram with a 'Clip' tool connected to an 'Output Features or Dataset'. The 'Project' menu is open, and the 'Export' option is selected, leading to a submenu with 'Export To Python File', 'Send To Python Window', and 'Export To Graphic'. The 'Analysis' menu is also visible, with 'ModelBuilder' and 'Python' options highlighted. A 'Catalog' pane on the right shows the project structure. A 'Python' window at the bottom contains the code `print("Hello World!")`.

LS_week2 - Model 1 - ArcGIS Pro

ModelBuilder

Project | ModelBuilder | Insert | Analysis | View | Share

Clipboard | New | Save | Export | Properties | Environments | Report | Auto Layout | Fit to Window | View

Export To Python File
Send To Python Window
Export To Graphic

Contents

Model 1

Diagram

Command Search (Alt+Q) | Jennifer (The University of Oklahoma)

Mode | Run | Intermediate

Variable | Label | Iterators | Utilities | Logical | Group | UnGroup

Project | Portal | Favorites

Search Project

Maps | Toolboxes | Databases | Styles | Folders | Locators

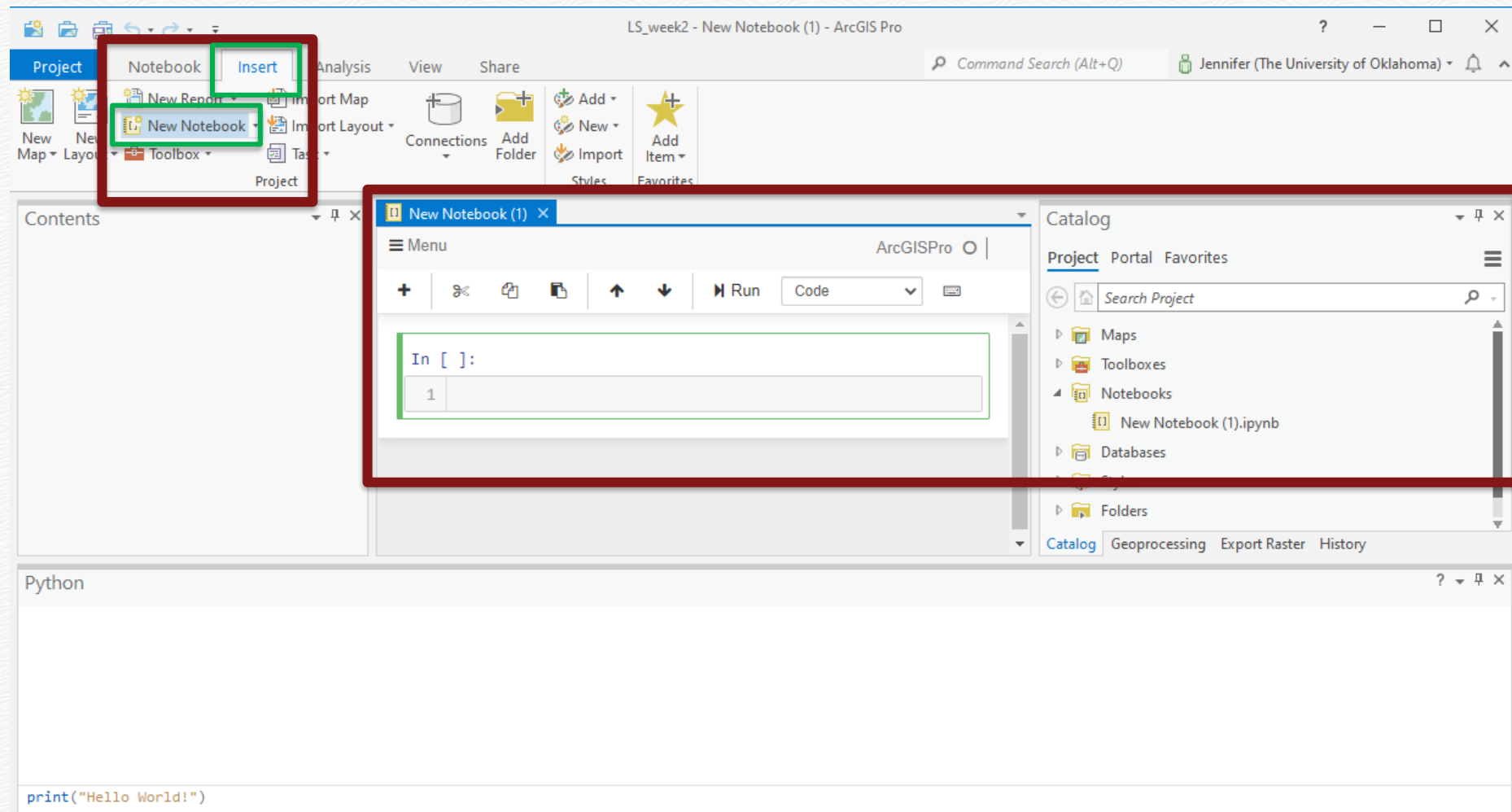
Clip → Output Features or Dataset

ArcGIS Pro | 100%

Python

```
print("Hello World!")
```

Python in Notebook



Import and Environmental Settings

Example:

```
import arcpy  
arcpy.env.workspace = "C:/data"  
arcpy.env.overwriteOutput = True  
arcpy.CheckOutExtension( 'Spatial' )
```

List of Extension Aliases:

<https://pro.arcgis.com/en/pro-app/latest/arcpy/functions/checkoutextension.htm>

Linear Units

- Specification of Euclidean distance
- `arcpy` expects **a string** with number and unit separated by space
 - `'5 miles'`
- Linear units are not case sensitive!
- Recognized units:

centimeters	decimal degrees	decimeters	feet	inches	kilometers	meters	miles
millimeters	nautical miles	points	unknown	yards			

Optional Parameters

- Optional parameters indicated by `{ }`

```
PolygonNeighbors_analysis (in_features, out_table, {in_fields},  
{area_overlap}, {both_sides}, {cluster_tolerance}, {out_linear_units},  
{out_area_units})
```

- Optional parameters can be omitted
- “” empty string: can be used as placeholder
- Parameters must be used in the exact order listed in the code signature
- What would be the correct code for using only `out_linear_units`?

Polygon Neighbors (Analysis)

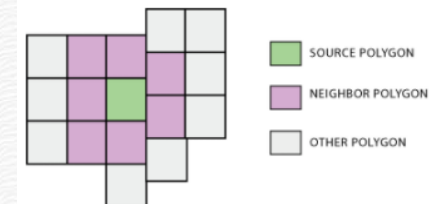
ArcGIS Pro 2.8 | [Other versions](#) ▾

Summary

Creates a table with statistics based on polygon contiguity (overlaps, coincident edges, or nodes).

[Learn more about how Polygon Neighbors works](#)

Illustration



A diagram of a source polygon and its neighbor polygons is shown.

Saving Rasters

Returns a Raster object instead of a Result object

Raster is only temporary

→ save it, otherwise not stored

Example:

```
in_raster = "measured"  
out_raster = arcpy.sa.SquareRoot(in_raster)  
out_raster.save() # saves under default name  
out_raster.save('maine_sqrt') # saves under specified name
```

→ Remember, raster names limited to 13 characters

Esri Grid format

The name of an Esri Grid format raster has more specific restrictions:

- The maximum number of characters is 13.
- It cannot have spaces.
- It cannot use special characters other than underscore ("_").
- For tools that output an Esri [Grid Stack](#), the stack name cannot have more than 9 characters.
- The total length of the name for a Grid and its path cannot be more than 128 characters.



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