

Geography 378: Introduction to Geocomputing

Lab 7: ArcPy

Assigned: 11/22

Due: 12/6

20 points

Hand-in

- Please collect your answers in separate .py files. Compress and name the zip file **lab7_yourname.zip**.
- Submit the files to the assignment folder called “Lab 7”.
- Include appropriate comments to explain what each line or block of code accomplishes.
You must comment your code for full credit.

Background

Lab 5&6 provided experience using GDAL/OGR with Python. Now we turn to the ArcPy library, which exposes methods for both raster and vector (feature) processing.

Lab Tasks

1. (10 pts) Assume that electromagnetic fields generated by power lines are a health hazard and people don't want to live within 250 feet of a power line. Write a Python program using ArcPy to construct a shapefile consisting of every parcel (extracted from the polygon data: *Parcels.shp*) entirely within a 250-foot buffer of the proposed power line (*PowerLine.shp*). Open your newly created file and the power line shape file in ArcGIS or QGIS. Create a 250-foot buffer of the power line using the GIS program. Display all three layers and make a screen shot or print the map to a PDF file. Turn in the image or PDF file along with your Python program.
2. (10 pts) Using Arcpy, write a Python script to create a RGB composite color-shaded choropleth **slope** map using the input digital elevation model (DEM) raster data: *elevation.tif* (<https://canvas.wisc.edu/courses/65139/modules/items/760513>) . Hint: This task is different from Lecture 9--example 9.7 in which the choropleth was directly created from the DEM layer. You need to think about the geoprocessing workflow. Open your newly created file in ArcGIS or QGIS and make a screen shot or print the map to a PDF file. Turn in the image or PDF file along with your Python program.