GEOG 4092/5092: Assignment 0
Python and Geoprocessing Basics

Due next class—August 28 (5 points)

Goal: Learn the basics of Python. Gain an introductory understanding of common Python objects and basic operators and structures. Become familiar with the JupyterLab platform.

Parts I and II should be turned in **together in the same jupyter notebook**. Create a new jupyter notebook and name it *astname_lab0* Use this naming convention for the rest of the semester.

Part I:

1. Create a list of hypothetical file names using a *for* loop:
    a) Create a list with the following strings as elements: 'roads', 'cities', 'counties', 'states'
    b) Create an empty list and then populate it by concatenating each of the strings above with '.txt'. This should result in a list of strings ending in .txt (e.g. 'roads.txt', 'cities.txt', etc.).
2. Write a *while* loop that raises the mathematical constant pi (3.14159…) to its powers until the result is greater than 10,000 (i.e. pi^0, pi^1, pi^2,…).
   HINT: You will need to import the math module. Examine the *while* loop examples in *code_examples/python_basics.py* (on Canvas) to figure out how to set up the loop structure. What condition are you testing?

By the start of next class upload your notebook (*lastname_lab0.ipynb*) to Canvas.

Grading: You will be evaluated on the following: your notebook runs without errors (1), attempts to complete all tasks (1), and completes all tasks correctly (2), clean and concise code (1).

Optional Challenge: Open the file *lab0.txt* from the data folder and read the lines of the file. Then convert each element into a float type using a list comprehension (i.e. the result will be a list of floating point numbers).