OS Python week 4: Reading raster data with GDAL

No psuedocode this week. Hopefully you've learned enough that you can figure it out on your own.

Assignment 4a

Read pixel values from an image. For each point contained in sites.shp, print out the point ID value and the pixel values of all three bands in aster.img at that point.

I would suggest reading the data in one pixel at a time, but you can also read the entire bands in if you'd prefer – just make sure that you don't read each band again every time you get a new point because that will take forever to run.

Turn in your code and your output. You can copy all of the output from Crimson Editor if you right-click in the output window.

Assignment 4b

Calculate the average pixel value for the first band in aster.img. Read in the data one block at a time.

Do the calculation these two ways:

1. Include pixels with a value of 0 in the calculation
2. Ignore pixels with a value of 0 in the calculation

Basically the only difference between these is what you divide by, so you only need to create one total of all pixel values. But while you're totaling pixel values, you should also count the number of non-zero pixels.

Turn in your code and your output.