GEOG 432/832: Programming, Scripting, and Automation for GIS

Unit 06.02: Cursors, cursors, cursors

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Today's schedule

- Open discussion
- Update cursors
- Introduce lab 3
- For next class

Open discussion

Thoughts on lab 2?

Update cursors

Let's pose a problem:

Given our dataset, how would we calculate the population density (people/unit area) for each county in Nebraska?

To the whiteboard!

What if we wanted to add that calculation to the feature class?

One way of accomplishing our tasks

Break it down - what does the code do and why?

```
arcpy.management.AddField(fc, "pop_den", "Double")

with arcpy.da.UpdateCursor(fc, ["ALAND10", "TOTAL", "pop_den"]) as cursor:
    for row in cursor:
        row[2] = row[0] / row[1]
        cursor.updateRow(row) # You need to tell the cursor to update the row
```

What happened?

We can delete records too

First, let's make a copy we can "play" with

```
arcpy.management.CopyFeatures(fc, "mycopy_to_delete_later.shp")
```

Then, let's selectively delete rows <- what does the below code do?

```
with arcpy.da.UpdateCursor("mycopy_to_delete_later.shp", ["NAME10"]) as cursor:
    for row in cursor:
        if(row[0] == "Lancaster"):
            cursor.deleteRow()
cursor.reset()
```

Did it work? Check it in your map

(if the view didn't update, click the "refresh" button in the bottom-right)

Let's do one more

Breakdown the code:

```
with arcpy.da.UpdateCursor("mycopy_to_delete_later.shp", ["NAME10", "Total"]) as cursor:
    for row in cursor:
        if(row[1] < 20000):
            cursor.deleteRow()
cursor.reset()
```

Paired exercise:

1. Make another copy of our original dataset
2. only *retain* records where there are *more Females in their 50s than Females in their 20s*
3. Print the county names

Lab 3

For next class

- Read Chapter 8 this week
- Read Chapter 9 for next week