Iterations & Conditionals

Site: TMT Bangladesh
Course: Introduction to Scientific Programming
Book: Iterations & Conditionals

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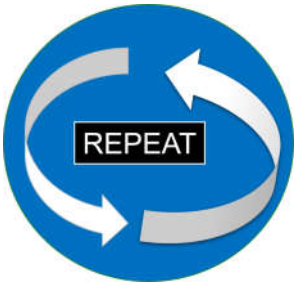

Most often you encounter problems that require repetition of the same task multiple numbers of times. For instance:

- Reading all lines of a CSV file and operating on them
- Intersecting a collection of polygons
- Calculating the buffer area around a set of points
- Determining a regression line using the least-squares method
- Connecting to a database to retrieve data records from a table
- Checking whether polygons in a shapefile are geometrically valid
- Retrieving data from a citizen science portal
- Operating on a raster data set with a 3x3 kernel window

To perform such tasks without having to copy-paste your code block n-times, you may need to use iteration to loop over the same block of code n-times.

In Python, you can use two types of loops:

- The for loop
- The while loop

Normally, the task at hand will determine which of the two is the more appropriate.

Conditionals

Just like in life where we are forced to make some decisions whether to go "left" or "right", a program also needs to make a decision at some point. Conditionals are key tools for making decisions inside the code.

Presentations & Exercises

Recorded Lectures

- Iterations
- Conditionals

Presentations

- Slides: SL_ISC_03_Conditionals
- Slides: SL_ISC_07_Iterations

Exercises

- Conditionals
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