Week 2: Intro to Python

1. Why use a scripting language?
2. How to use a scripting language?
3. Play time with python
4. Assignment 2

Arguments against...

- Folks argue that you have to use FORTRAN since everything else is in FORTRAN. Wrong.
- Scripting languages are too slow. Wrong.
- Scripting languages can't handle scientific computing applications. Wrong.

Arguments for...

- Fast prototyping and development.
- Portable to most any platform.
- Vast and rich libraries already written.
- Code size is smaller.
- Large and diverse user bases.

Python uses in Meteorology

- PyClimate, a rigorous library for climate data operations on NetCDF files
- mtaCDF, a python module for handling multivariate time series in NetCDF
- Many parts of NWS AWIPS contain python
- CDAT, LLNL's python project to do all sorts of scientific stuff

Running Scripts

- Scripts are interpreted at run-time, so this means they must be invoked. Two methods
  - Make the script executable and then execute it
    - chmod +x myscript.py
    - ./myscript.py
  - Run the script with the interpreter
    - python myscript.py
- Your first line of code in the python script needs to contain the invoker “# !/usr/bin/python”

Python Basics

- Uses indentation to identify blocks
- Comments start with “#”
- Dynamic typing
- Variables don't start with '$'
- Lists, Tuples, & Dictionaries

Playing with Python

Assignment #2

- Take the spreadsheet from last week and save it as a comma delimited file
- Parse this file in Python and print out a total of the 'total disk space' and your 'disk space'