

Python Workshop #1



What is Python?

- programming / scripting language
- "interpreted" not "compiled" language
- clean syntax, indentation matters(!)
- powerful, convenient, easy to learn
- popular, widely used in science
- many free libraries available

What is Python Good For?

- processing data in files (especially "text" files)
- automating repetitive tasks
- linking existing steps into a pipeline
- creating publication quality figures
- numerical / statistical analysis
- converting manual analysis into a shareable protocol
- rapid prototyping of an idea

What is Python Less Good At?

- compared to C++
 - interpreted programs run more slowly
 - use memory less efficiently
- compared to bash (shell)
 - common file operations faster in bash
- compared to R
 - less libraries available?
 - but python has an interface to R, and often runs faster
- compared to matlab
 - FREE!!!

Learning to Program

- I'm a Biologist: Using Informal Language!
- basic data types - eg 4 (integer), "abc" (string)
- data structures - organise data in memory
- basic programming elements:
 - expressions, statements, arguments, conditionals...
- functions, modules
- objects (data and functions combined)

Best Way To Learn

- By doing!
- Pick a fun problem to solve
- Keep practising
- Discussion about People's Priorities....

Hello World

- install python (eg 2.7)
- launch interpreter from command line
- install suitable text editor
- write program
- run program from command line

Interpreter