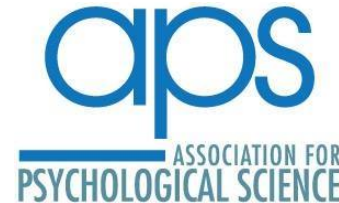




APS Workshop: Introduction to Python
San Francisco, CA, 24 May 2018



Using Python

Christian C. Luhmann
Stony Brook University

Python

- How do I **do** Python?
- There are **three ways** we will cover today...

Console

Useful when...

- Playing with very brief pieces of code (i.e., one line at a time)
- No need to save code (or results) for later
- Trying things out
- Learning Python (exploring, trial & error)

Let's try out the console

Scripts

Useful when...

- Executing large amounts of code
- Confident that your code works the way you want
- No need to “oversee” the code’s operation

Let’s see a script

Notebooks

Useful when...

- You want to play with code
- You want a record of what you do and results (mnemonic)
- You might want to share that record with others
- Teaching

Let's try out a notebook

Notebooks

- Notebooks may be exported in a variety of formats, including...
 - PDF
 - LaTeX
 - HTML
 - Python script
- Useful for supplying others (possibly non-programmers) with information about what you have done/found
 - Students/advisors
 - Collaborators
 - Readers
 - theatlantic.com/science/archive/2018/04/the-scientific-paper-is-obsolete/556676/

Outline

1. Overview
2. Ways of using Python
- 3. Python basics**
4. Data set overview
5. Data wrangling
6. Statistics
7. Plotting
8. Experiment creation