Using Python

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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 (e.g., mnemonic)
- You might want to share that record with others (e.g., collaboration)
- 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 (including non-programmers) with information about what you have done and 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