

# PYTHON FOR EXCEL USERS

A portrait of George Mount, a man with dark, curly hair, smiling. He is wearing a light blue button-down shirt under a dark grey textured blazer. The background is a plain, light grey. In the bottom-left corner, there is a decorative graphic consisting of overlapping dark grey and red geometric shapes.

# George Mount

Data Analyst & Educator at Stringfest Analytics

George works as an independent analyst and data analytics educator with the goal to help clients manage their data so they think more creatively. He serves as a technical expert and lead curriculum developer for Thinkful's data analytics program and is the instructor of the DataCamp course "Survey and Measure Development in R."

George blogs about data, innovation, and career development at [georgemount.com](http://georgemount.com). He holds a master's degree in information systems with a certificate of achievement in quantitative methods from Case Western Reserve University

# WELCOME

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- Where are you from?
- What interests you about Python?
- What have you coded before?



# COURSE OBJECTIVES

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- Load, view and write spreadsheet files from Python
- Perform common data wrangling tasks such as sorting, filtering, and aggregation
- Navigate and execute code in Jupyter notebooks
- Identify, install and implement useful packages for your needs
- Not panicking



# FOLLOWING ALONG

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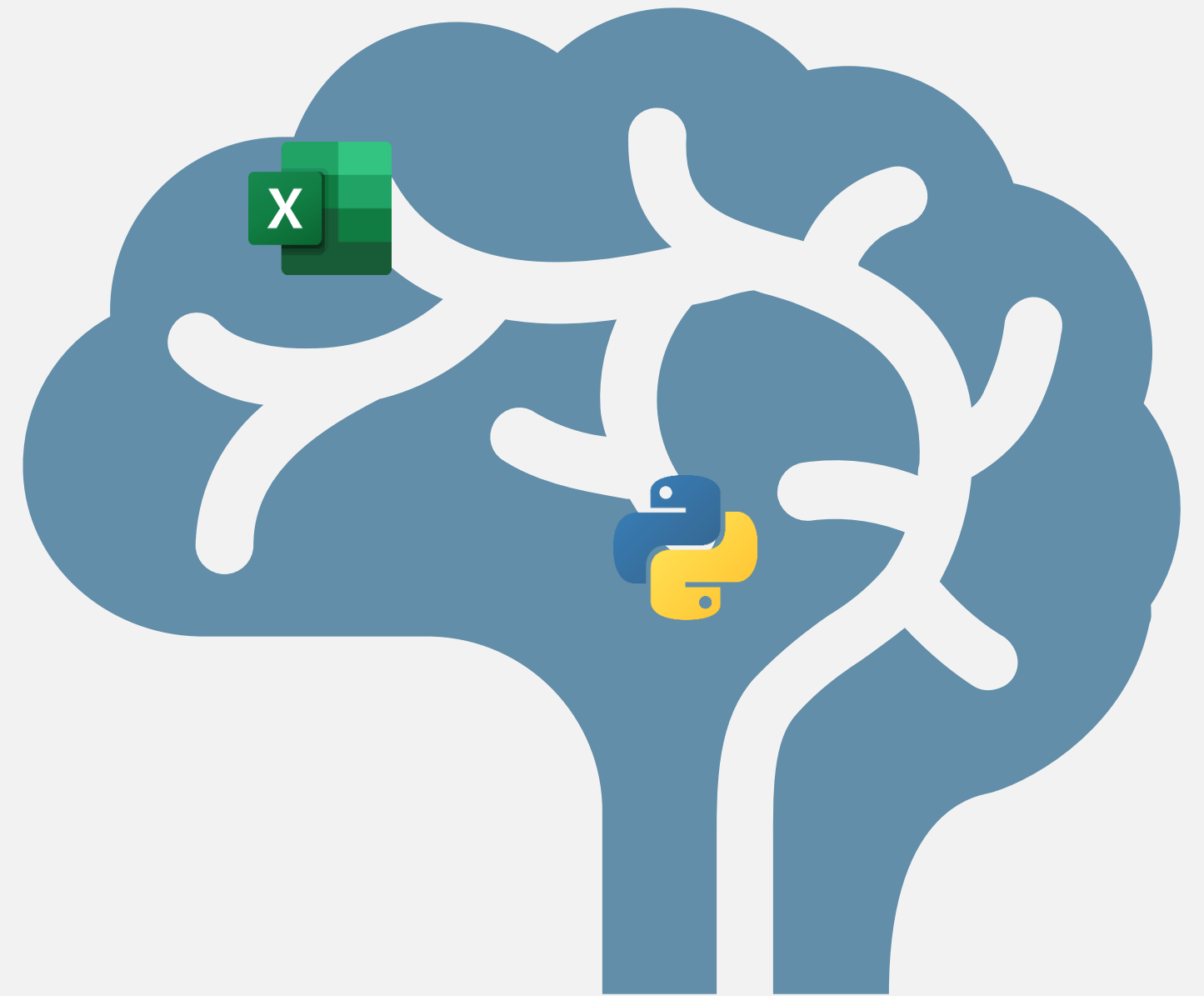
- Each section is a sub-folder
- Demos = follow along with me
- Drills = try it yourself
  - Jupyter notebooks: fill-in-the-blanks, compare to solutions



# WHY LEARN THIS WAY?

“Students learn new ideas by relating them to what they already know, and then transferring them into their long-term memory.”

-- Paul Bruno, “How People Learn: An Evidence-Based Approach”



# 1. UP AND RUNNING FROM SPREADSHEETS TO PYTHON





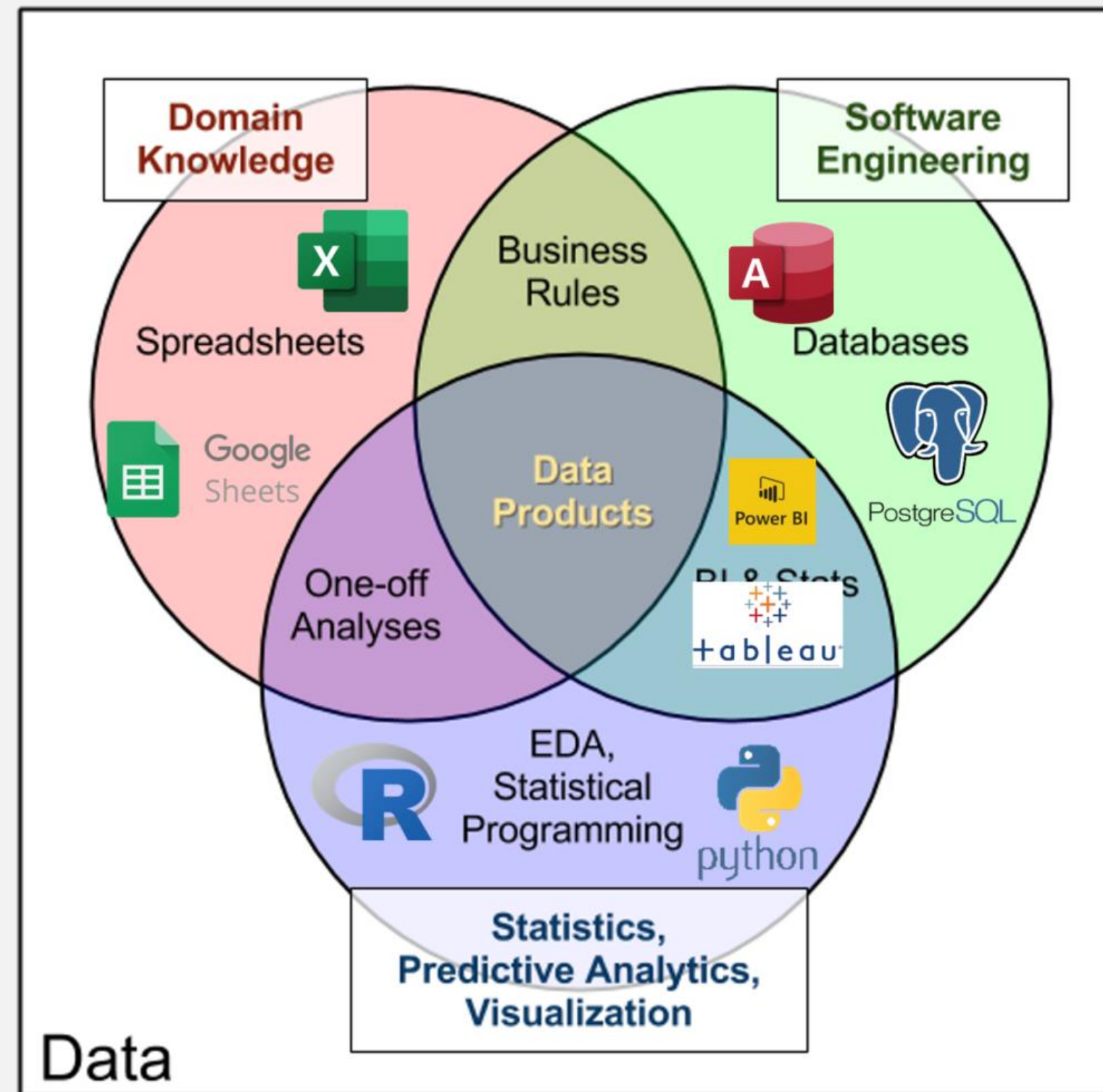


# **PYTHON & EXCEL: “YES, AND” DATA ANALYSIS**





# THE DATA ANALYTICS STACK





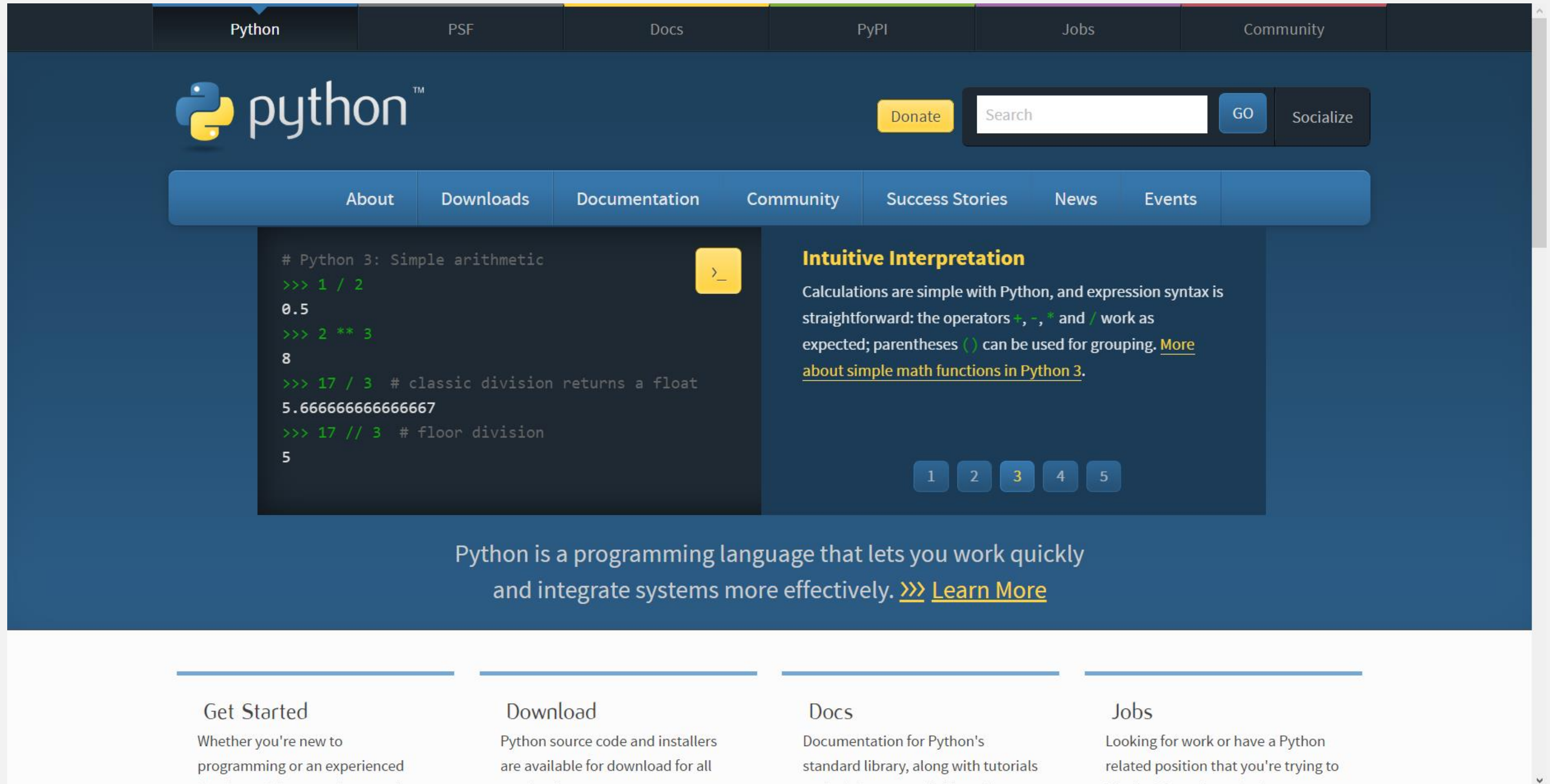
# PYTHON IS:

- A programming language
- Open-source

# PYTHON IS NOT:

- A spreadsheet
- A database
- Commercially supported

# WHERE DOES PYTHON COME FROM?



The image is a screenshot of the Python.org homepage. At the top, there is a navigation bar with links for Python, PSF, Docs, PyPI, Jobs, and Community. Below this is the Python logo and a search bar with a 'GO' button and a 'Socialize' link. A secondary navigation bar contains links for About, Downloads, Documentation, Community, Success Stories, News, and Events. The main content area features a code snippet on the left demonstrating simple arithmetic in Python 3, and a text block on the right titled 'Intuitive Interpretation' explaining the simplicity of Python's expression syntax. Below the code snippet is a pagination bar with numbers 1 through 5. At the bottom of the main content area, a statement reads: 'Python is a programming language that lets you work quickly and integrate systems more effectively. >>> [Learn More](#)'. The footer contains four columns: 'Get Started' (Whether you're new to programming or an experienced...), 'Download' (Python source code and installers are available for download for all...), 'Docs' (Documentation for Python's standard library, along with tutorials...), and 'Jobs' (Looking for work or have a Python related position that you're trying to...).

Python

PSF

Docs

PyPI

Jobs

Community

python™

Donate

Search

GO

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About

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Documentation

Community

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News

Events

```
# Python 3: Simple arithmetic
>>> 1 / 2
0.5
>>> 2 ** 3
8
>>> 17 / 3 # classic division returns a float
5.666666666666667
>>> 17 // 3 # floor division
5
```

**Intuitive Interpretation**

Calculations are simple with Python, and expression syntax is straightforward: the operators `+`, `-`, `*` and `/` work as expected; parentheses `()` can be used for grouping. [More about simple math functions in Python 3.](#)

1 2 3 4 5

Python is a programming language that lets you work quickly and integrate systems more effectively. [>>> Learn More](#)

**Get Started**  
Whether you're new to programming or an experienced

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Documentation for Python's standard library, along with tutorials

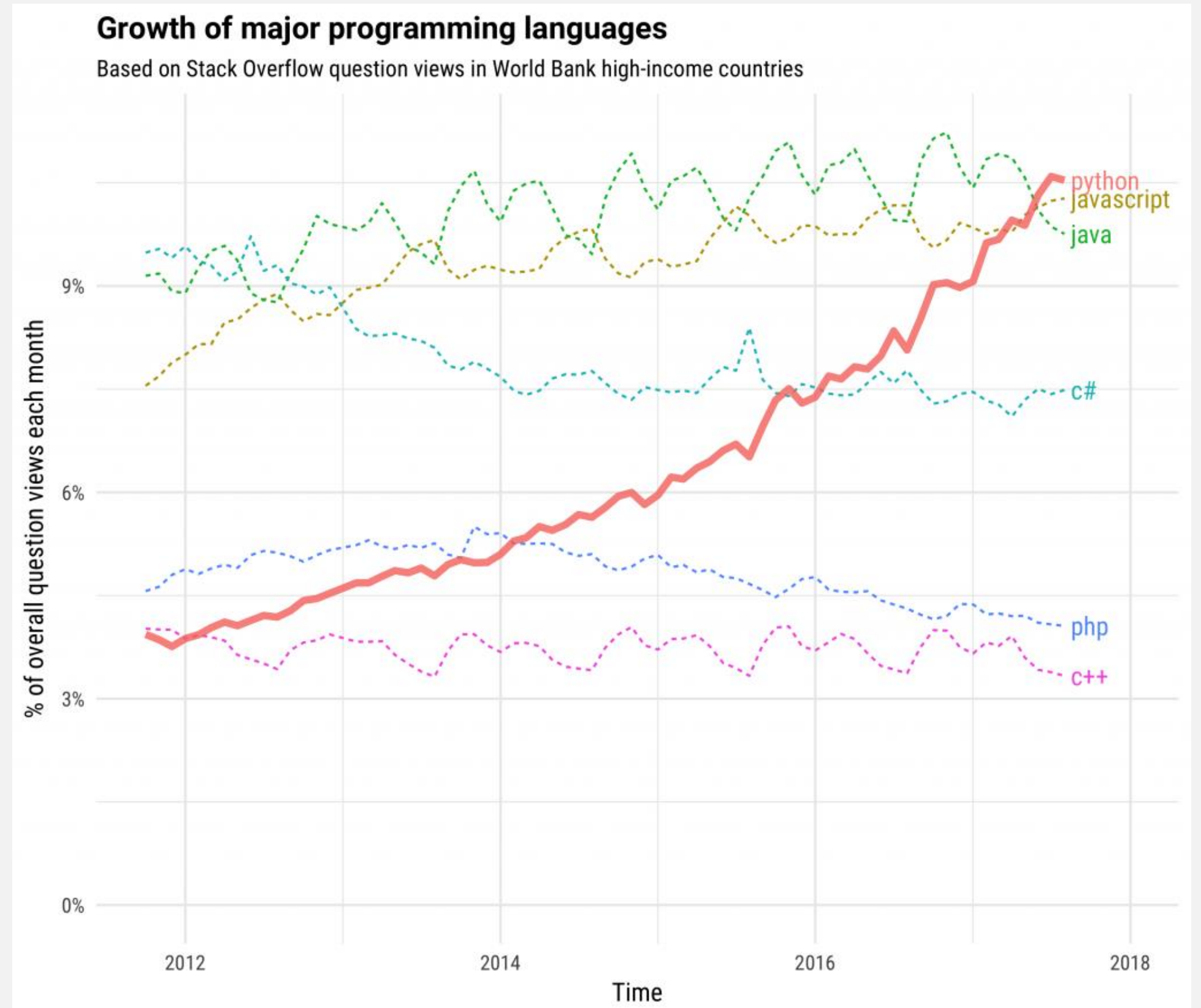
**Jobs**  
Looking for work or have a Python related position that you're trying to

<https://www.python.org>



# ADVANTAGES OF PYTHON:

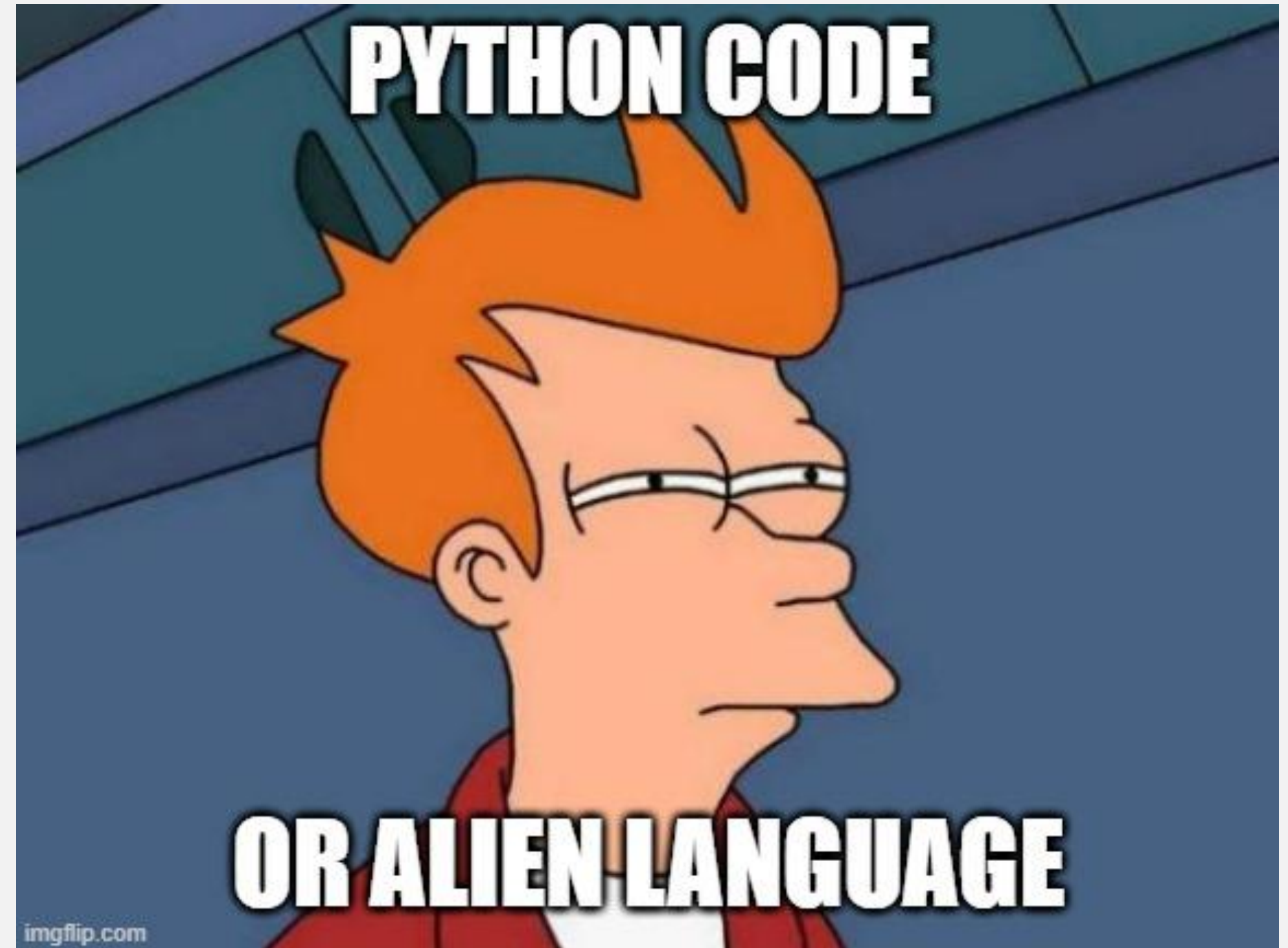
- It's free
- It's powerful
- It's popular





# DISADVANTAGES OF PYTHON:

- It can be frustrating.





# Warm-up

- File: `calculations-in-excel.xlsx`
  - What are the limitations of our spreadsheet-based analysis?
    - Follow along with demo notes



# QUESTIONS?



# ACCESSING PYTHON FROM JUPYTER



[Install](#) [About Us](#) [Community](#) [Documentation](#) [NBViewer](#) [JupyterHub](#) [Widgets](#) [Blog](#)



Project Jupyter exists to develop open-source software, open-standards, and services for interactive computing across dozens of programming languages.





# DEMO

- `hello-from-jupyter.ipynb`

# 4. CONCLUSION





# Future learning

- Programming
  - Conditional statements
  - User-defined functions
  - Loops
- Remote data sources
  - Relational databases
  - APIs
- pandas, matplotlib/seaborn ... oh my!



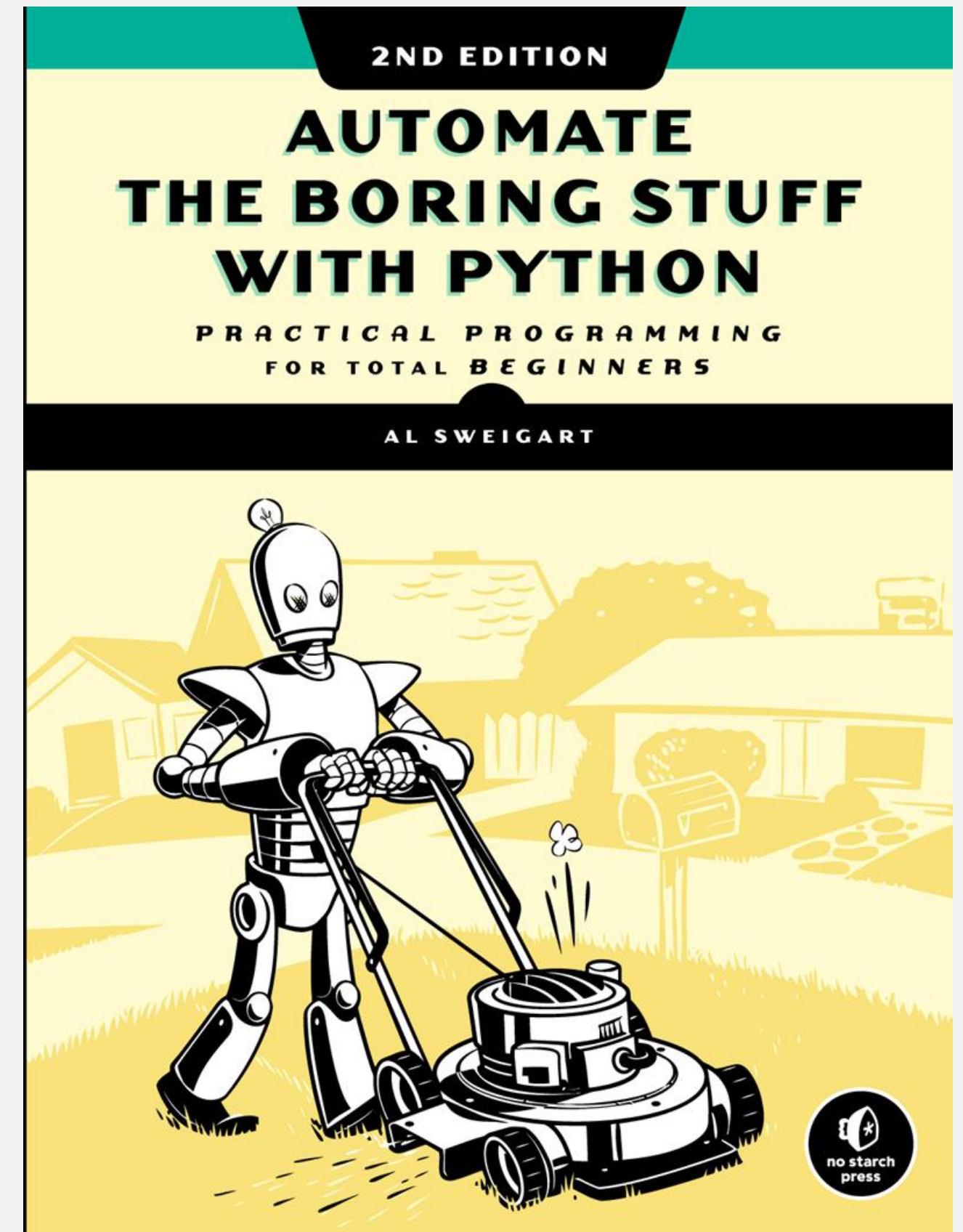
# Download a local Anaconda distribution of Python

- Download for free at <https://www.anaconda.com/products/individual>



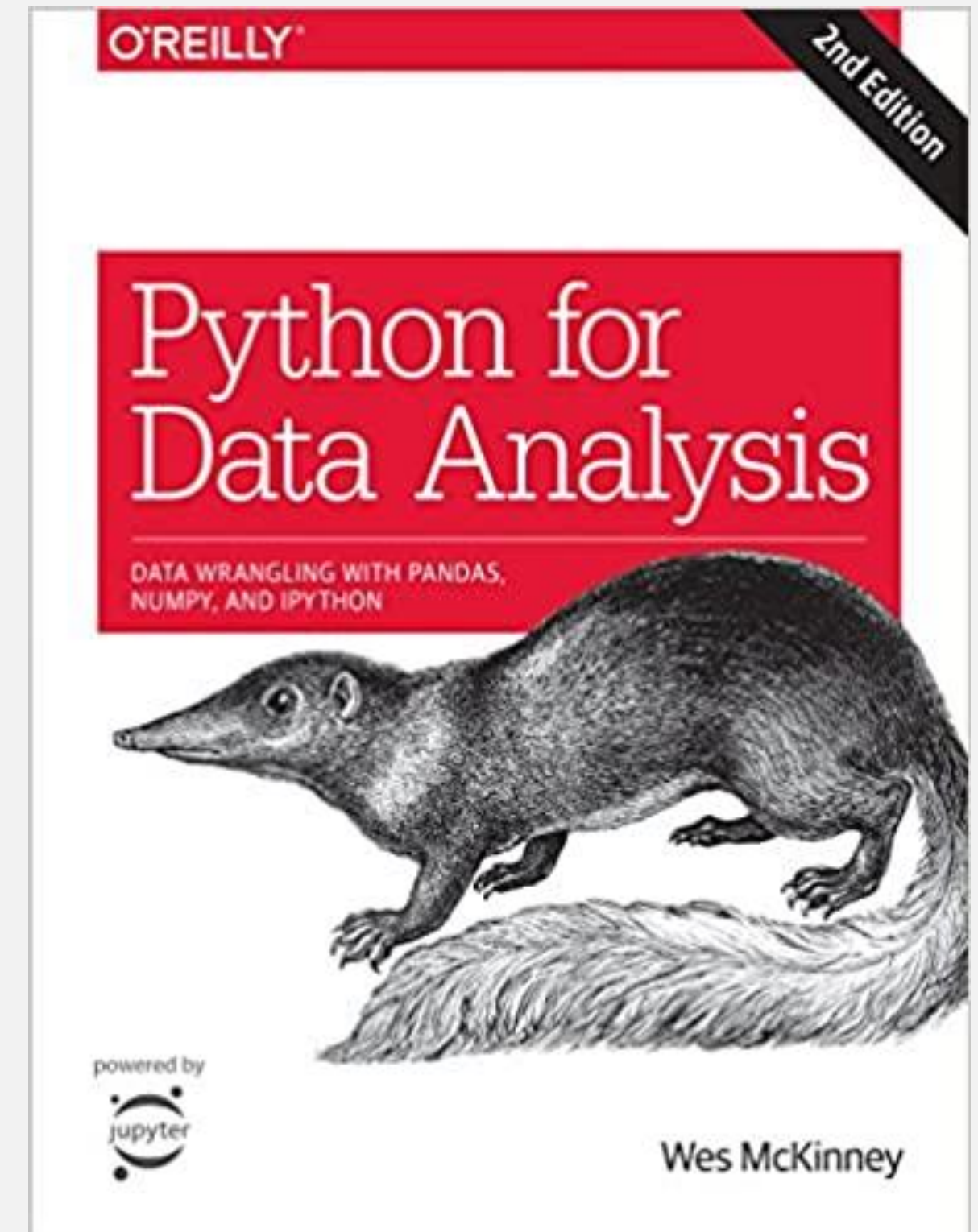
# ***Automate the Boring Stuff with Python, 2<sup>nd</sup> Edition*** **by Al Sweigart**

- On O'Reilly Learning at <https://learning.oreilly.com/library/view/automate-the-boring/9781098122584/>



# *Python for Data Analysis,* 2<sup>nd</sup> Edition by Wes McKinney

- On O'Reilly Learning at <https://learning.oreilly.com/library/view/python-for-data/9781491957653/>



# *Python for Excel* by Felix Zumstein (Early Release)

- On O'Reilly Learning at <https://learning.oreilly.com/library/view/python-for-excel/9781492080992/>





# LET'S TALK

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# QUESTIONS?

