# From Jupyter to VSCode

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# Jupyter notebooks (.ipynb)

Google Colab runs a Jupyter Notebook

#### ■ Pros:

- Minimal set-up
- Interactive coding

#### Cons:

- Difficult to re-use code
- Insufficient for larger projects
- Hard to integrate with other programming tools

# Python files (.py)

- In the **scripting** vs. **programming** dichotomy:
  - Jupyter Notebooks are better for scripting.
- In practice, Python programs are usually composed of **Functions** and **Classes** in . py files.
- Example: check out the pandas codebase.
- Writing Python like this requires a different development environment.

## **Advanced Python development**

- Enter: Visual Studio Code (VSCode).
  - VSCode is an Integrated Development Environment (IDE).
  - Another (probably familiar) IDE: RStudio!
- IDEs offer an integrated terminal (for running code), autocomplete, debugging, extensions.
- Why VSCode?
  - The best open source IDE (my opinion) with lots of Python extensions.
  - Other Python IDE options: Spyder, PyCharm, Sublime.

# Python files (.py)

Programming in a text editor (not a Notebook):

#### ■ Pros:

- Easy to write re-usable code
- Can scale to larger projects
- Easier to collaborate

#### ■ Cons:

- More difficult setup
- No interactivity by default

### Combined workflow

- Can't we have our cake and eat it to?
- We want:
  - Minimal set-up
  - Interactive coding
  - Easy to write re-usable code
  - Can scale to larger projects
  - Easier to collaborate

### Combined workflow

- Combining VsCode with Python plugins, we get:
  - Minimal set-up X
  - Interactive coding
  - Easy to write re-usable code
  - Can scale to larger projects
  - Easier to collaborate

### Aims: this afternoon

- Unfortunately, VSCode requires a bit more set up (and can cause installation headaches).
  - That's why I'm here!
- Aims:
  - 1. Download VSCode
  - 2. Download VSCode plugins: Python and Jupyter.
  - 3. Get Python code to run interactively in code cells: # %%.
    - See: Python Interactive window.

### **Extra**

- If you breeze through the VSCode setup process:
  - Finish this morning's tutorials.
  - Then, try to import functions between . py files. [hint]
  - Then, try running your . py file from the command line.
    [hint]
  - Then, try to use if \_\_\_name\_\_ == "\_\_main\_\_": in your .py file. [hint]