

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 different **.py** files.
- *Example:* check out the **pandas** codebase again.
- 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), auto-complete, 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

- 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 ❌
 - 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 and extra exercises.
 - 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. [\[hint\]](#)