

# Introduction to the JupyterLab and Jupyter Notebooks

A Jupyter Notebook File from [JupyterLite](#)

[JupyterLite](#)

Dec 12, 2023

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This is a short introduction to two of the flagship tools created by [the Jupyter Community](#).

**Note:** This is an introduction file from [JupyterLite](#), here I use it as an example Jupyter Notebook file for my `ipynb2pdf.py` script. The original version of this file include some Emoji characters, I removed them for converting this file to PDF via LaTeX. Please click [the link here](#) if you want to see the origin version of this file.

## JupyterLab

**JupyterLab** is a next-generation web-based user interface for Project Jupyter. It enables you to work with documents and activities such as Jupyter notebooks, text editors, terminals, and custom components in a flexible, integrated, and extensible manner. It is the interface that you're looking at right now.

**For an overview of the JupyterLab interface**, see the **JupyterLab Welcome Tour** on this page, by going to `Help -> Welcome Tour` and following the prompts.

**See Also:** For a more in-depth tour of JupyterLab with a full environment that runs in the cloud, see [the JupyterLab introduction on Binder](#).

## Jupyter Notebooks

**Jupyter Notebooks** are a community standard for communicating and performing interactive computing. They are a document that blends computations, outputs, explanatory text, mathematics, images, and rich media representations of objects.

JupyterLab is one interface used to create and interact with Jupyter Notebooks.

**For an overview of Jupyter Notebooks**, see the **JupyterLab Welcome Tour** on this page, by going to `Help -> Notebook Tour` and following the prompts.

**See Also:** For a more in-depth tour of Jupyter Notebooks and the Classic Jupyter Notebook interface, see [the Jupyter Notebook IPython tutorial on Binder](#).

## An example: visualizing data in the notebook

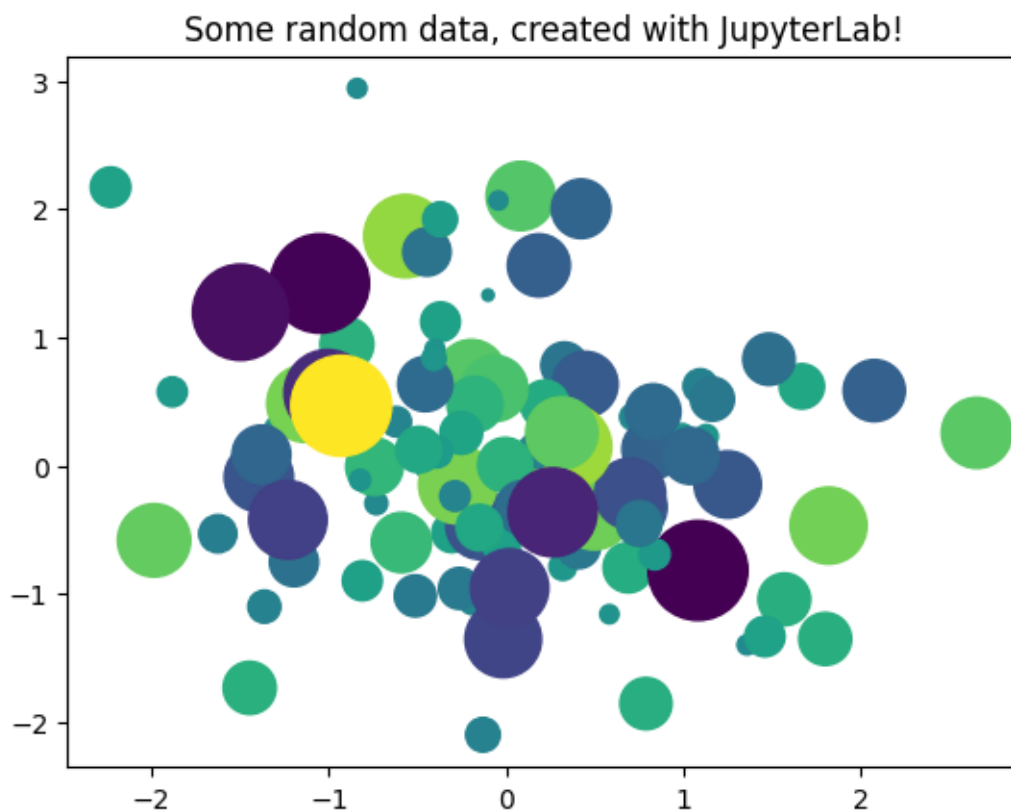
Below is an example of a code cell. We'll visualize some simple data using two popular packages in Python. We'll use [NumPy](#) to create some random data, and [Matplotlib](#) to visualize it.

Note how the code and the results of running the code are bundled together.

```
import numpy as np
from matplotlib import pyplot as plt

# Generate 100 random data points along 3 dimensions
x, y, scale = np.random.randn(3, 100)
fig, ax = plt.subplots()

# Map each onto a scatterplot we'll create with Matplotlib
ax.scatter(x=x, y=y, c=scale, s=np.abs(scale) * 500)
ax.set(title="Some random data, created with JupyterLab!")
plt.show()
```



## Next steps

This is just a short introduction to JupyterLab and Jupyter Notebooks. This demonstration contains a lot more that you can play around with. Here are some pointers to help you take the next step. Each of the items below corresponds to a file or folder in the **file browser to the left**.

- [python.ipynb](#) is a Jupyter Notebook that shows off some basic Python functionality, including more visualizations, data structures, and scientific computing libraries.
- [pyodide/](#) is a folder that contains several Jupyter Notebooks that highlight many more things that you can do in JupyterLab / JupyterLite. Explore them for inspiration about what you'd like to do next.
- [p5.ipynb](#) is a Jupyter Notebook that shows off computing with [the p5 platform](#), which allows you to build visual experiences with Javascript.
- [javascript.ipynb](#) is a Jupyter Notebook that shows off how you can run Javascript code within an ipynb file.