Landing on Jupyter

A guided tour of interactive notebooks

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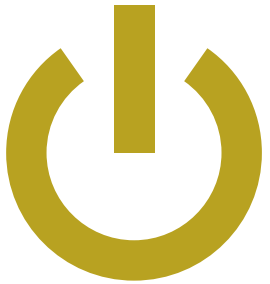
Outline

- What are Jupyter notebooks?
- Explain what Jupyter kernels are.
- Learn how to create and export a notebook.
- Possible use case demonstrations.
- how to install Jupyter?

Time to show your programming work!

Raw source code



A compiled executable.

Yegulalp S., *"What is Jupyter Notebook? Data analysis made easier"*, InfoWorld.com, 2019

Photo by Markus Spiske on Unsplash

What your raw code may look like for programmers who know the language.

Raw source code

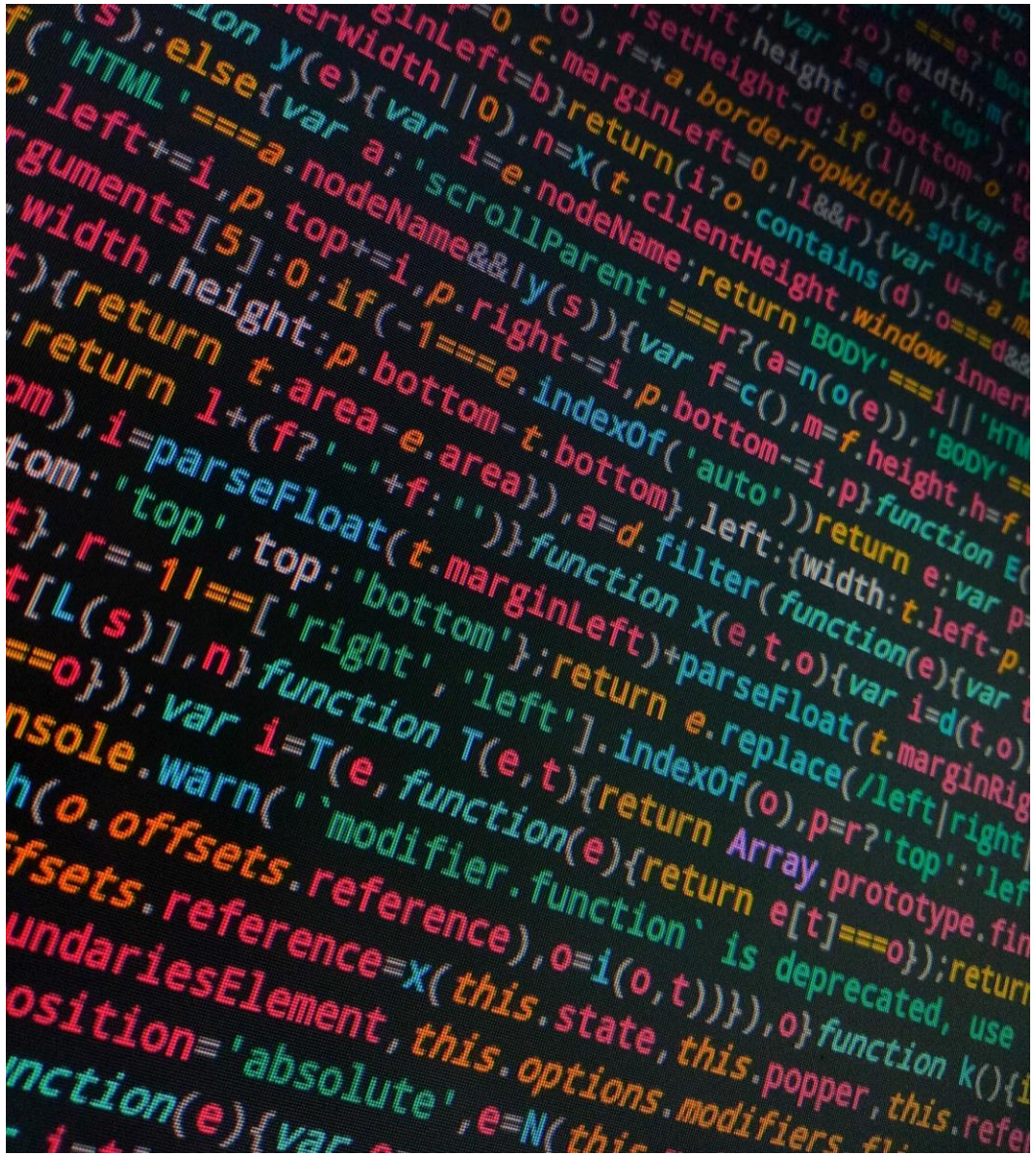


Photo by Walkator on Unsplash

What your raw code may look like for programmers who do not know the language.

Raw source code

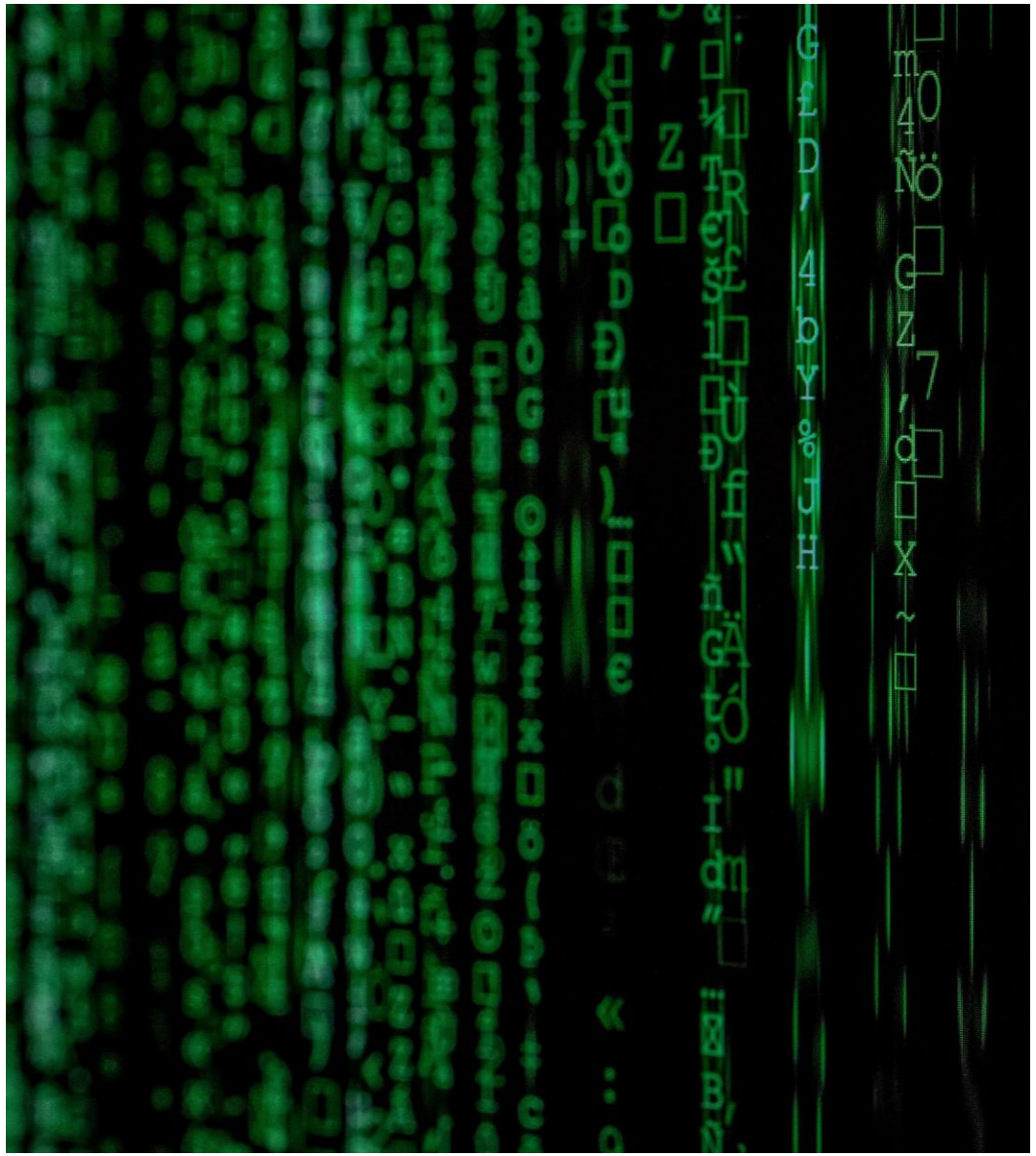
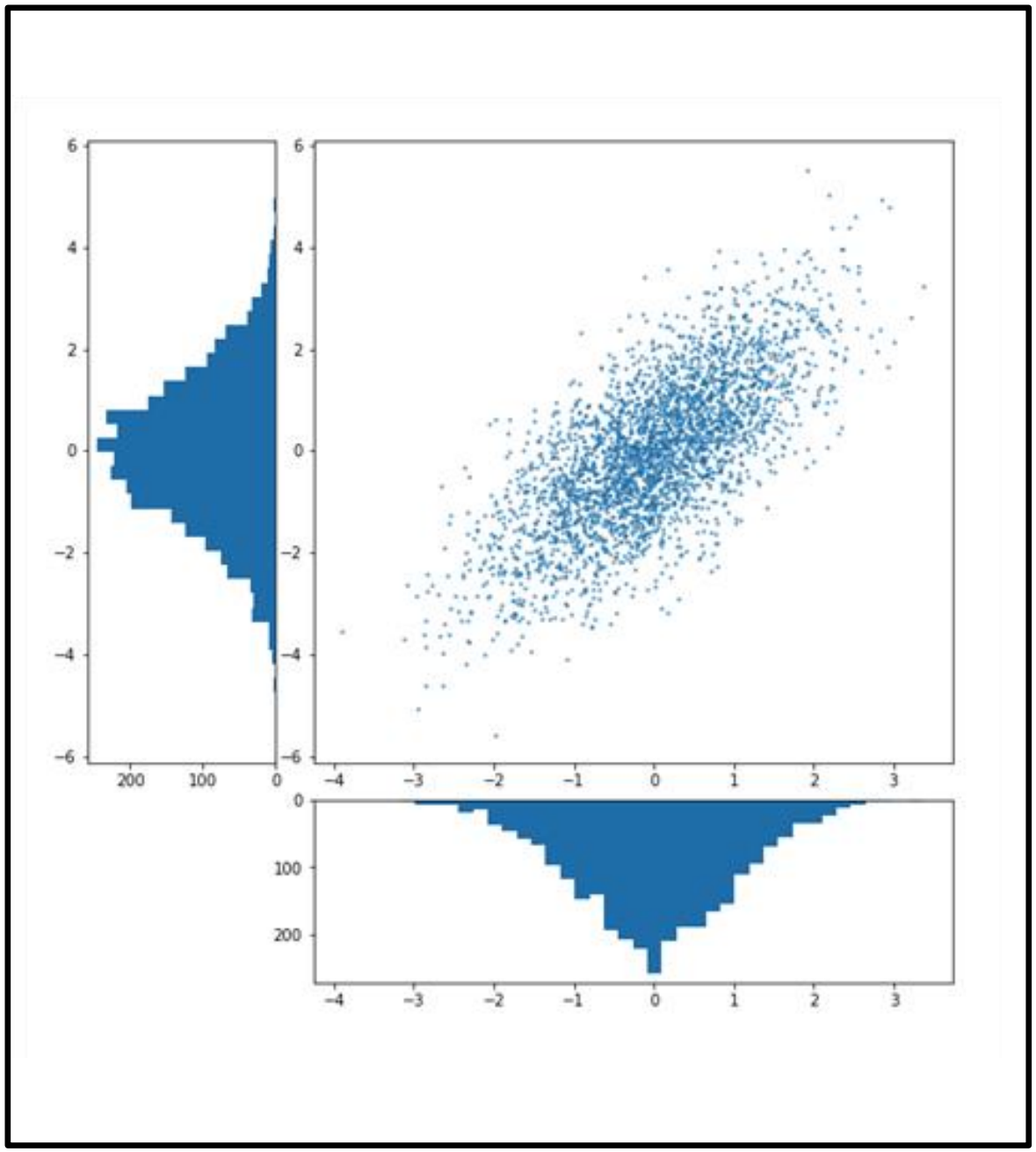


Photo by Markus Spiske on Unsplash

What your raw code may look like for non-programmers.

Raw source code



The executable can show what the program does.

A compiled executable.

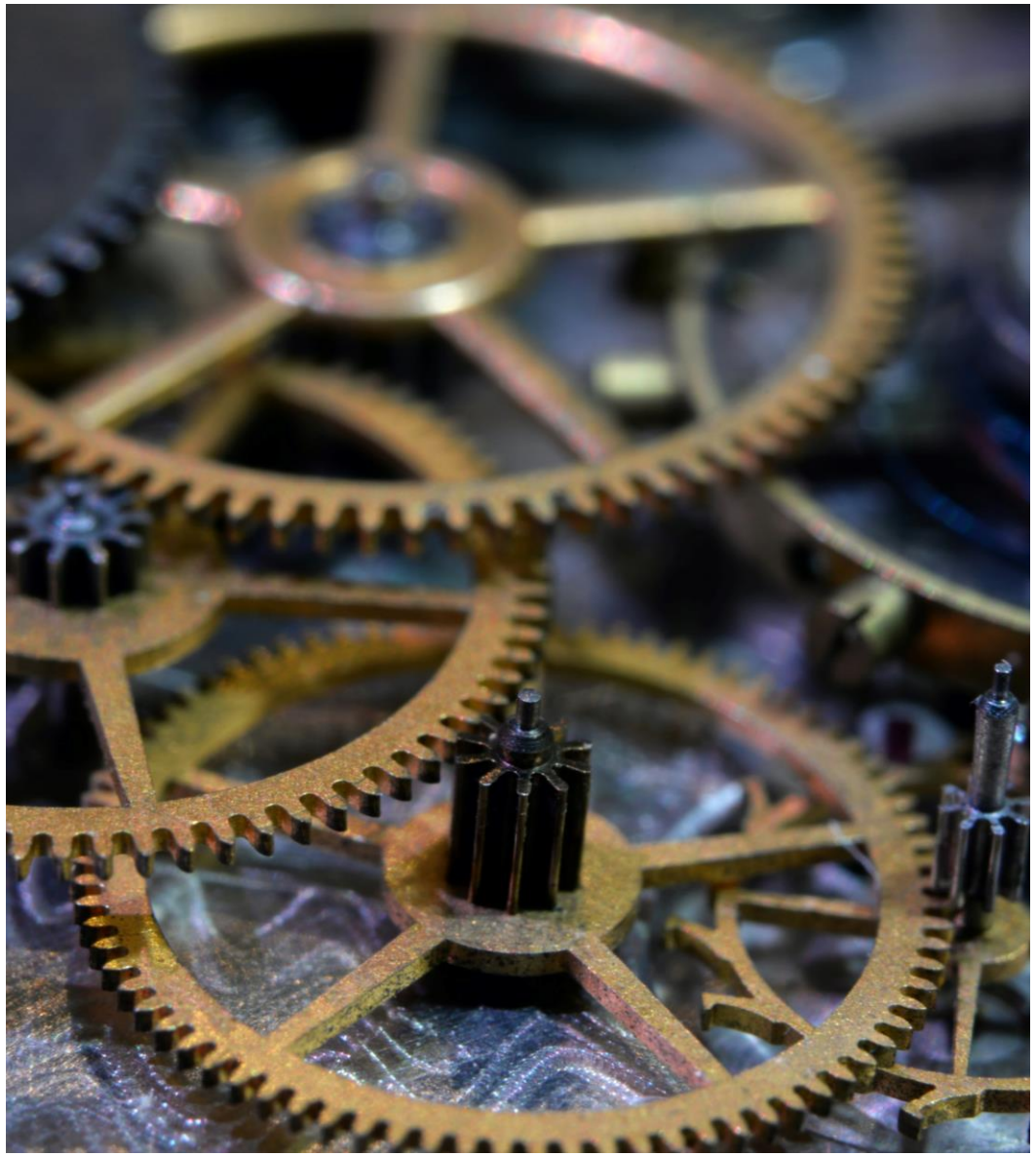


Photo by Laura Ockel on Unsplash

But the executable does not show how it works (no transparency).

Even with the source code it can be difficult to grasp exactly how it works.

A compiled executable.

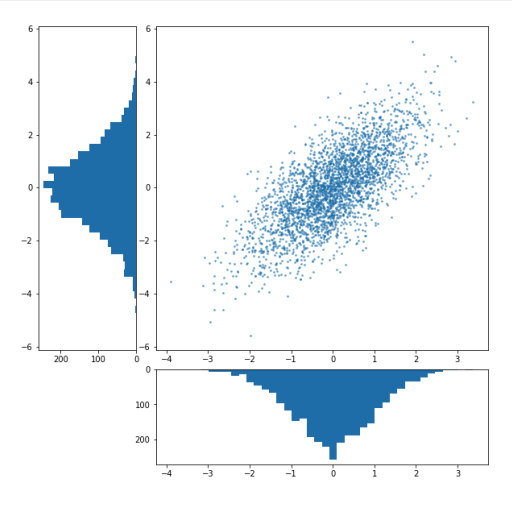


Photo by Aaron Burden on Unsplash

jupyter

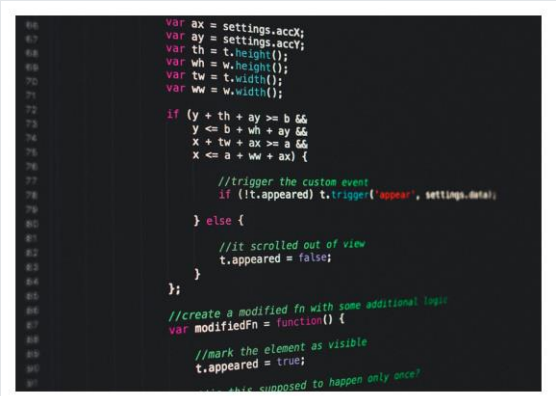


Photo by Markus Spiske on Unsplash

Example

What is a Jupyter notebook?

Open-source web application combining in a single document:

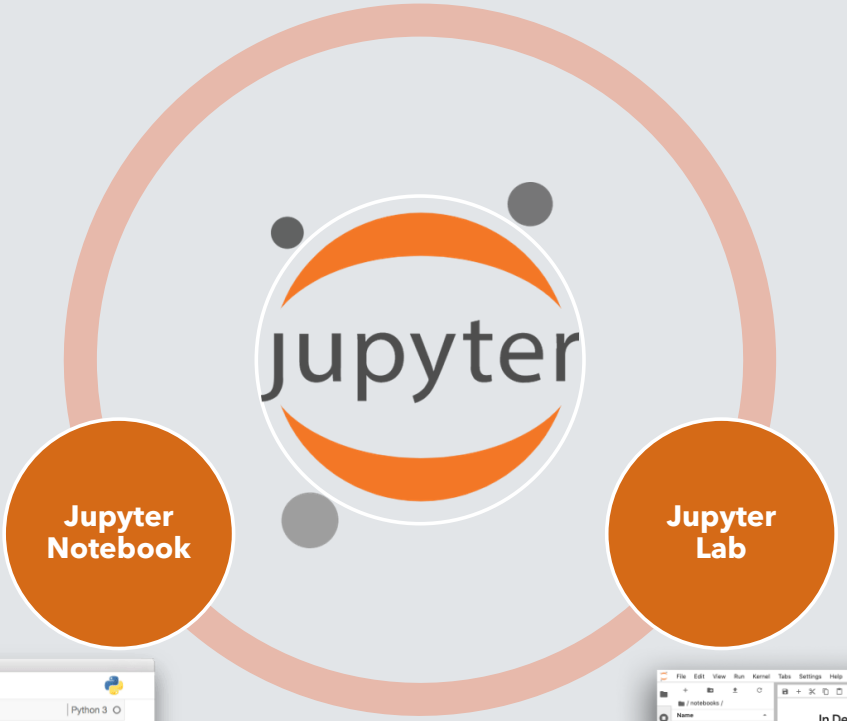
EXPLANATORY (NARRATIVE) TEXT

LIVE PROGRAMMING CODE

VISUALIZATIONS

MULTIMEDIA RESOURCES

Example



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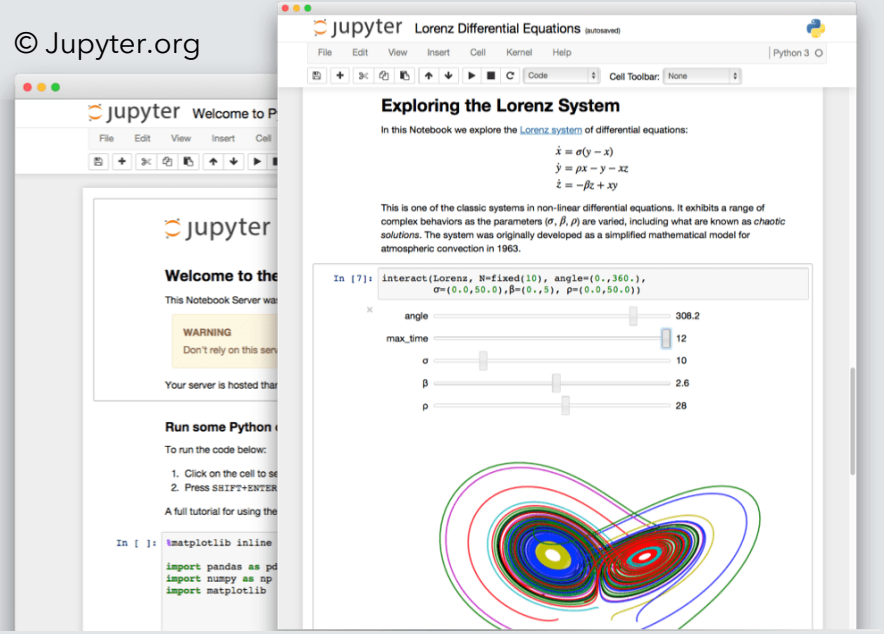

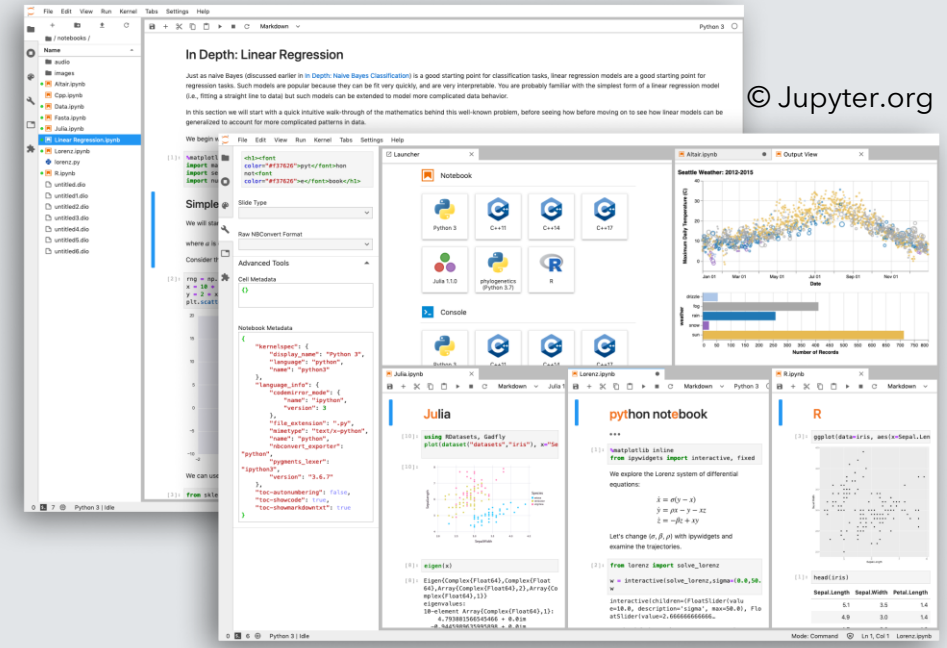

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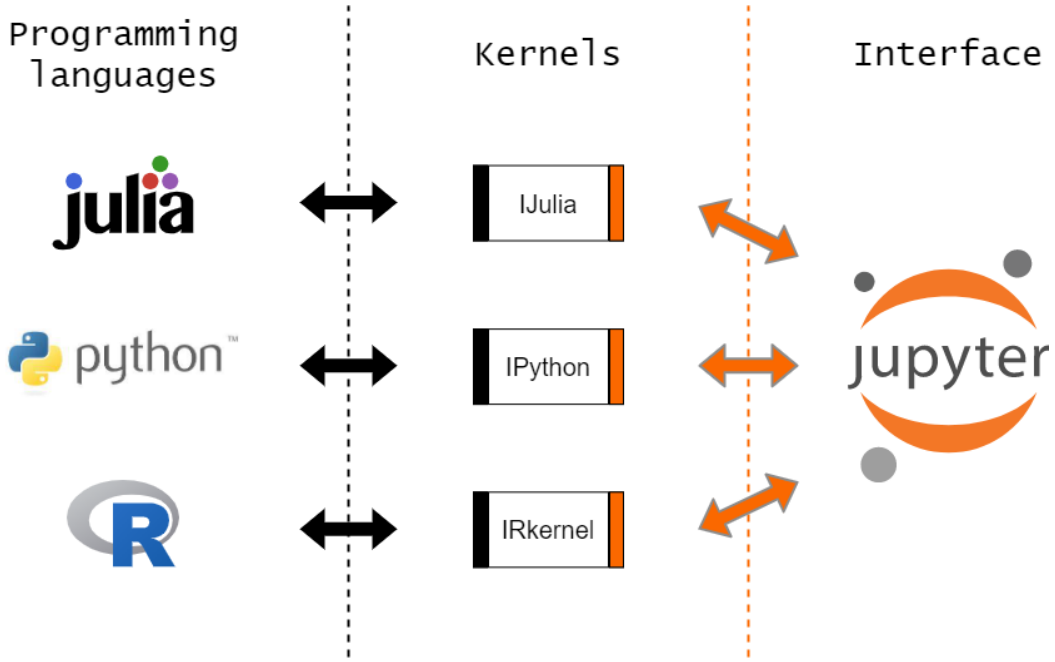


Kernels

"Kernels are programming language specific processes that run independently and interact with the Jupyter Applications and their user interfaces."

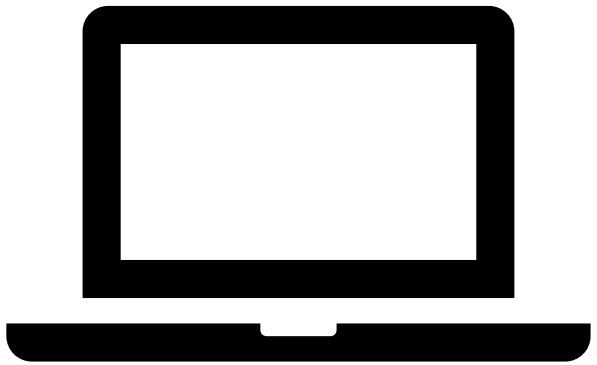
(Jupyter.readthedocs.io)

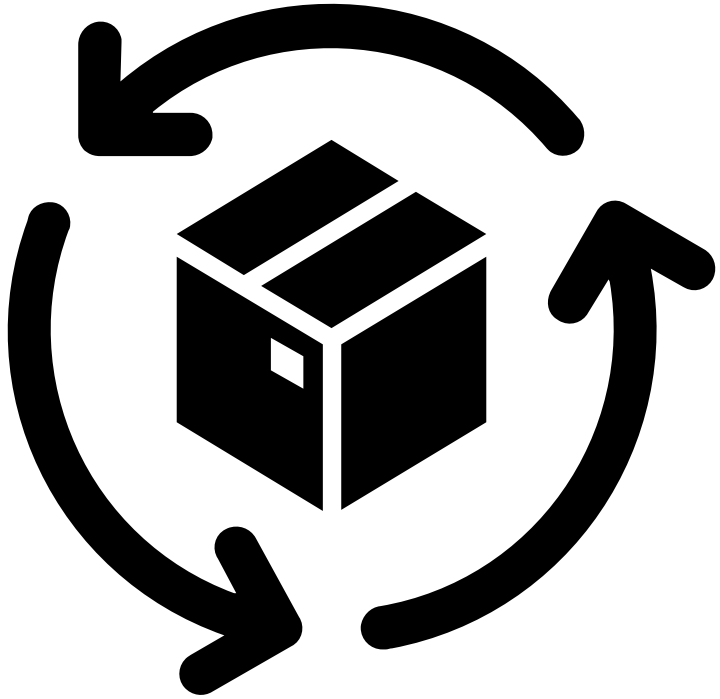
Try it!

https://jupyter.org/try

https://colab.research.google.com

Demo



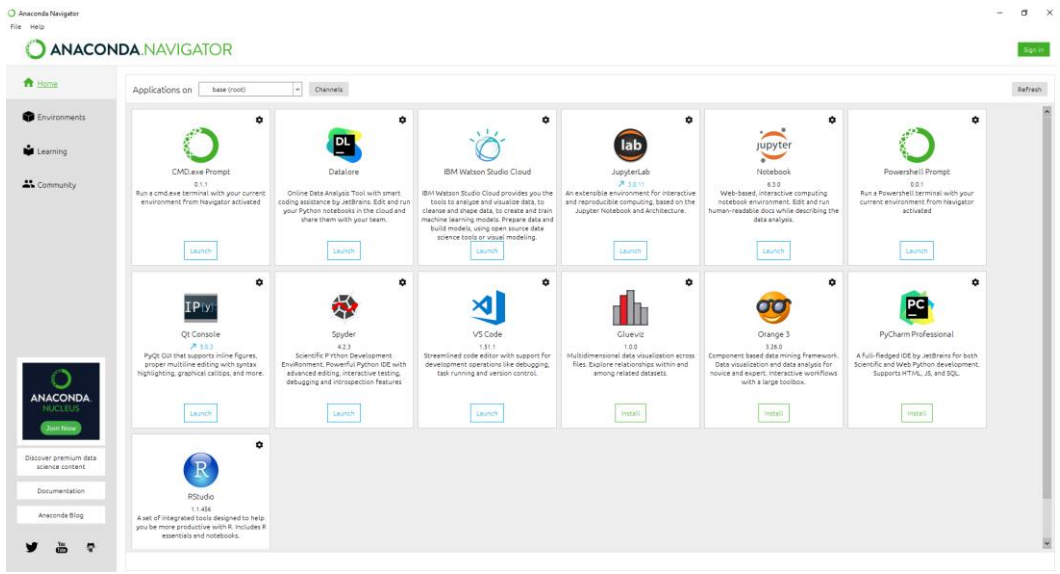


Installation

1. Install Jupyter
   - https://jupyter.org/install
2. Install Kernel
   - Kernel list
   - Example
   - ⌘ https://irkernel.github.io/installation

Installation

- Anaconda



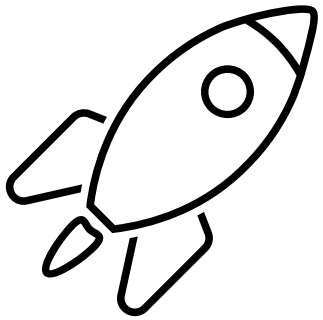
Conclusion

Main benefits:

- Choice of language
- Live interaction with code
- Notebooks sharing
- Interactive output
- Great for prototyping

Main Limitations:

- Sequence of execution matters
- IDE-like but no debugger
- Careful from where it is launched
- Learning curve for maintaining extensions



Thank you and go explore Jupyter!