JuPyteR Notebook

Anaconda

Anaconda is a platform/navigator to run python

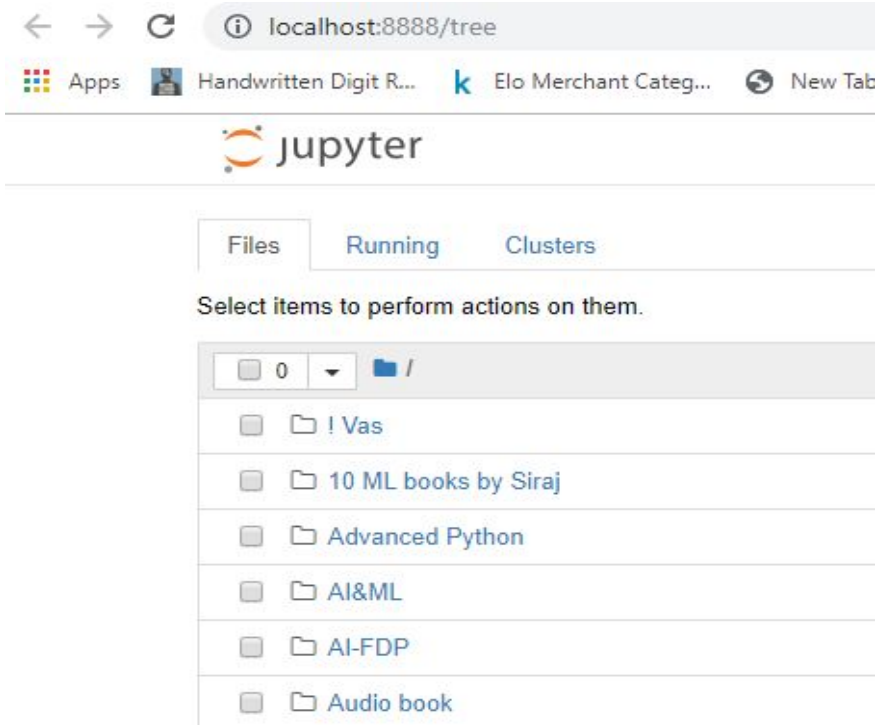
Why should we use Anaconda for Python?

- Anaconda is popular because it brings many of the tools used in data science and machine learning.
- Anaconda contains,popular python libraries that can be used in data science .
- It also comes with the jupyter notebook and Ipython distribution. So, it saves you from importing numerous libraries separately

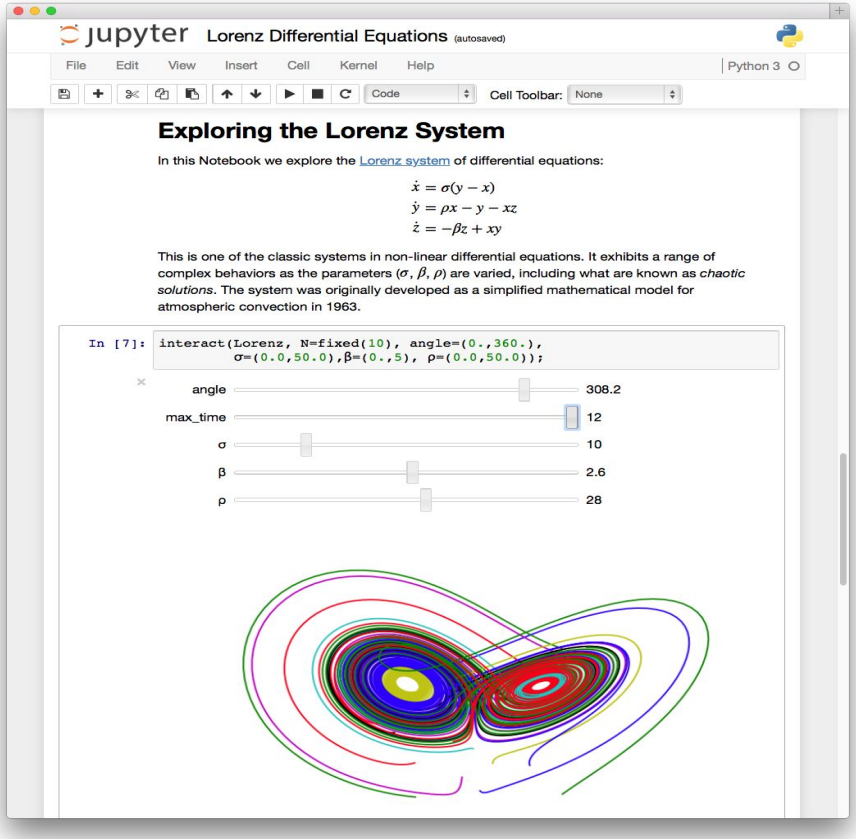
Link for installation: https://www.anaconda.com/distribution/

Jupyter

- Jupyter is a web - application
- Jupyter's name is a reference to the three core programming languages supported by Jupyter, which are Julia, Python and R
- The Jupyter Notebook can be executed on a local desktop requiring no internet access.



Why Jupyter

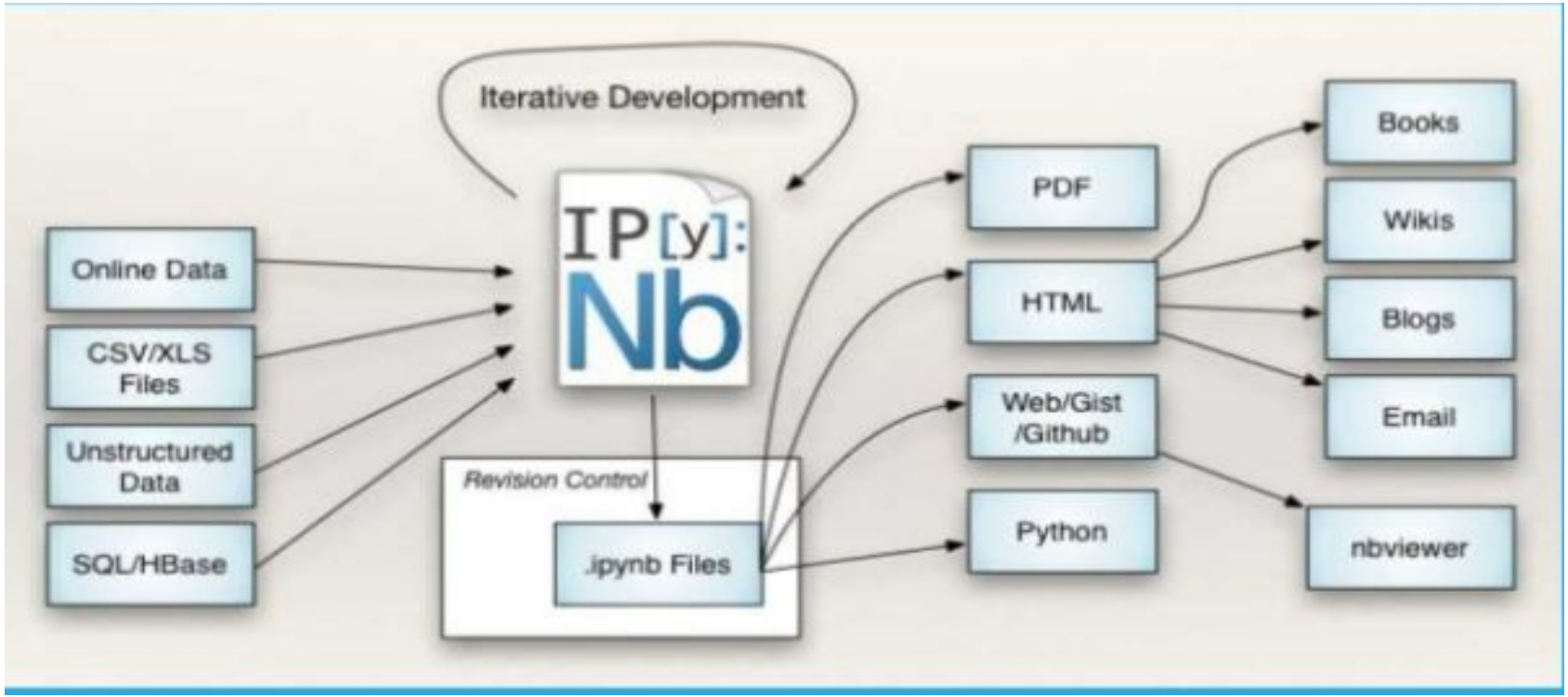


- You can create engaging documents.
- You can combine live code with narrative text, video,images and mathematical equations.
- You can share the jupyter notebook with others through github or Google Drive.

The Notebook - “Literate Programmimg”

- is a programming paradigm introduced by **Donald Knuth**
- Instead of writing code containing documentation, the literate programmer writes documentation containing code.
- The notebook allows to store chunks of code alongside additional comments(Markdown and Latex)
- The notebook can be exported as various file formats

Notebook Workflows



Kernel

- A notebook *kernel* is a “computational engine” that executes the code contained in a Notebook document.
- The *ipython kernel*, referenced in this guide, executes python code.
- Kernels for many other languages exist (official kernels).
- When you open a Notebook document, the associated *kernel* is automatically launched.

Markdown Format for Documentation

- Markdown cell displays text which can be formatted using markdown language.
- In order to enter a text which should not be treated as code by Notebook server, it must be first converted as markdown cell either from cell menu or by using keyboard shortcut M while in command mode.
- The In[ ] prompt before cell disappears.

Reference: https://www.markdownguide.org/cheat-sheet/

Markdown Basics

Element	Markdown Syntax

Heading	`# H1`
	`## H2`
	`### H3`

Bold	`**bold text**`
Italic	`*italicized text*`
Blockquote	`> blockquote`

Ordered List	`1. First item`
	`2. Second item`
	`3. Third item`

Unordered List	`- First item`
	`- Second item`
	`- Third item`

Code	`` `code` ``
Horizontal Rule	`---`
Link	`[title](https://www.example.com)`
Image	`![alt text](image.jpg)`

LaTeX Equation

- Inline expressions can be added by surrounding the latex code with $:
  - $e^{i\pi} + 1 = 0$
  - $e^{i\pi} + 1 = 0$
- Expressions on their own line are surrounded by $$:
  - $$e^x=\sum_{i=0}^\infty \frac{1}{i!}x^i$$
  - $$e^x = \sum_{i=0}^{\infty} \frac{1}{i!}x^i$$
- Reference

HTML tags

- For example, in the images folder, we have the Python logo:
  -
- and a video with the HTML5 video tag:
  - <video controls src="../images/animation.m4v" />
- Check for alerts
  -
    Tip: Use blue boxes (alert-info) for tips and notes.
    If it’s a note, you don’t have to include the word “Note”.

  - Replace the alert-info with alert-success or alert-warning and check