Using advanced features of code notebooks

Publishing and sharing a code notebook

- Offline publishing
- Online publishing

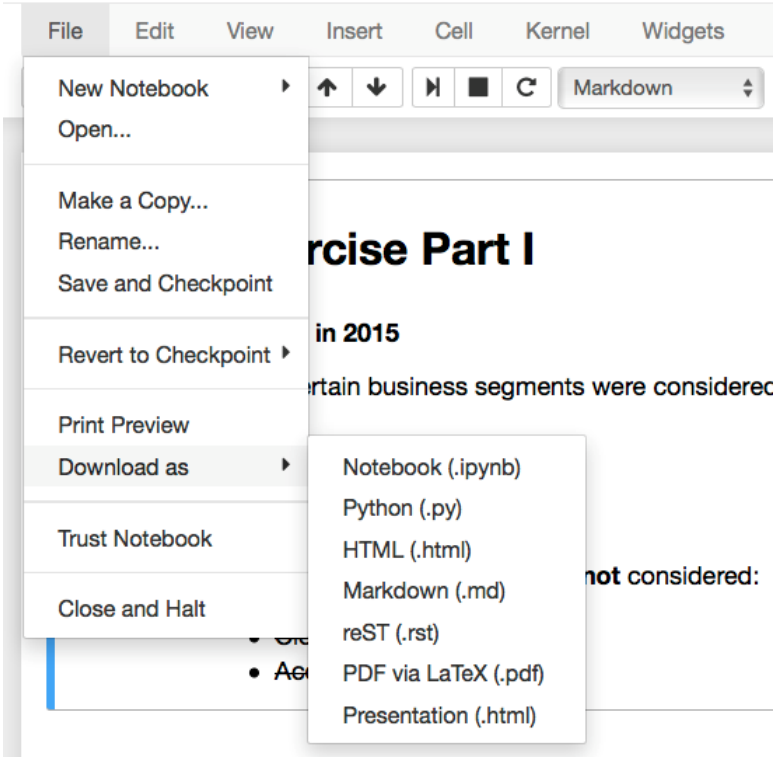
Offline publishing your Jupyter Notebook: Various format options

Remember: **Google Colab is an online service that runs Jupyter Notebook**, not a separate software.

Your Jupyter Notebook may be exported as

- Notebook (.ipynbd)
- HTML (Website)
- PDF (Pandoc and LaTeX required)
- …

This applies to using a local installation of Jupyter Notebooks. Often, if you use an online service for code notebooks such as **Google Colab, all requirements are already installed**.



Offline publishing your Jupyter Notebook: Requirements for PDF export

Windows

1. Pandoc: http://pandoc.org/installing.html
2. MiKTeX: http://miktex.org/2.9/setup

Mac OS

1. Pandoc: http://pandoc.org/installing.html
2. MacTeX: http://tug.org/mactex/

Online publishing your (cloud-based) Jupyter Notebook: Link sharing

Some example for some cloud-hosted code notebook services:

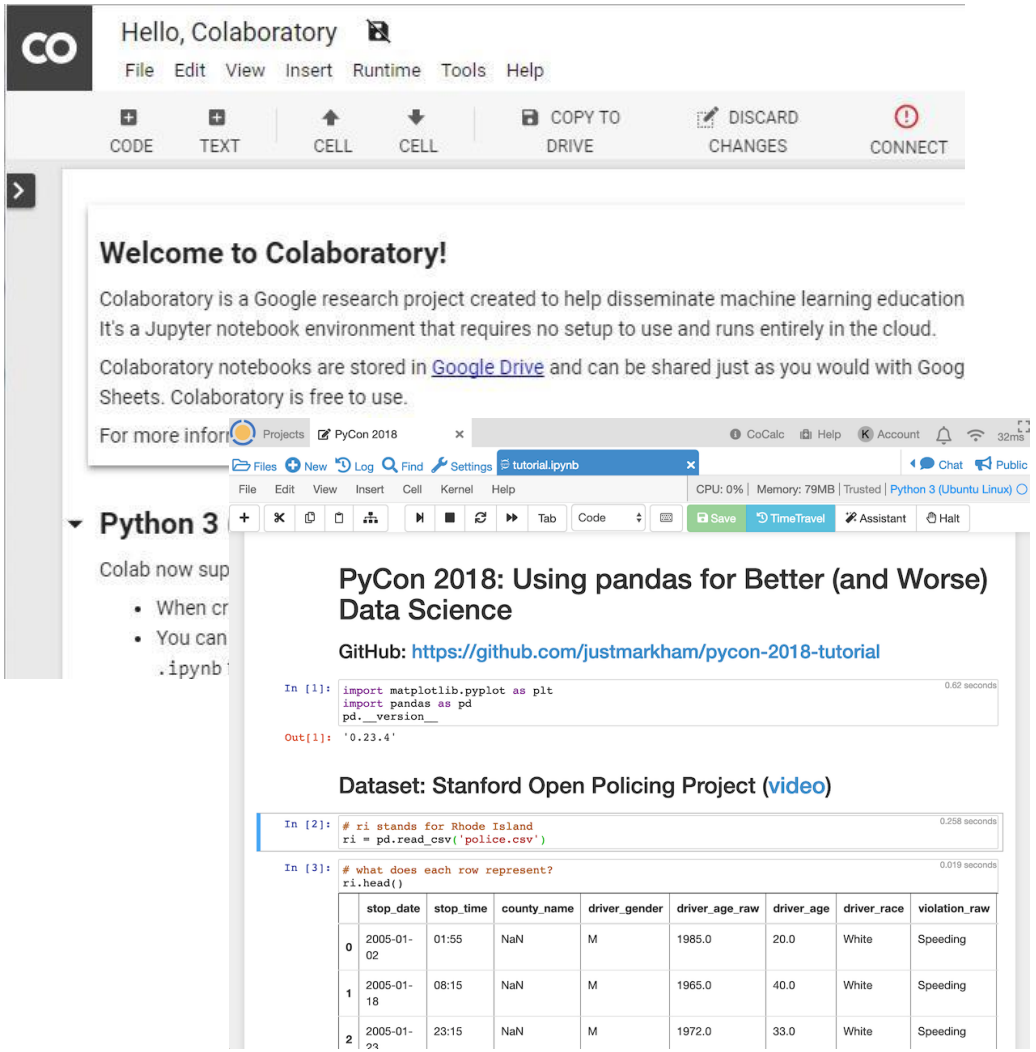
- Google Colab:

  https://colab.research.google.com

- CoCalc:

  https://cocalc.com/

If you use a cloud hosted code notebook for programming anyways, then publishing online is often very straightforward as these services usually provide the **option to share the link to the respective code notebook**.



Online publishing your (local) Jupyter Notebook: Publishing as non-interactive content

Nbviever

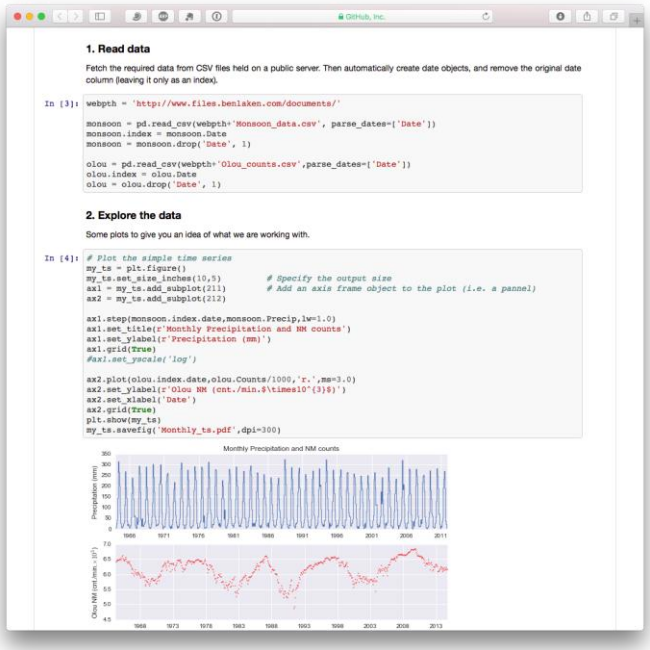
IPython Notebook Viewer is a free webservice that allows you to share **static html** versions of **hosted notebook files**.

You need to provide a **public available URL** for your Notebook.

https://nbviewer.jupyter.org

GitHub

Publish your Jupyter notebook directly on GitHub. It will be rendered automatically.



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GitHub

The `.ipynb` file

Publish your Jupyter notebook directly on GitHub. It will be rendered automatically.

Combining a GitHub hosted Jupyter Notebook file with the free online service www.mybinder.org, you can even publish interactive contents.

Further advanced features of Jupyter Notebooks: Magics

Magics are predefined functions, that can be called with a command line style syntax. There are two kinds of magics:

"%" - one-line magics: Command arguments will all come from that same line

"%%" - cell magics: Entire cell will be used as this command's arguments

Get a first overview

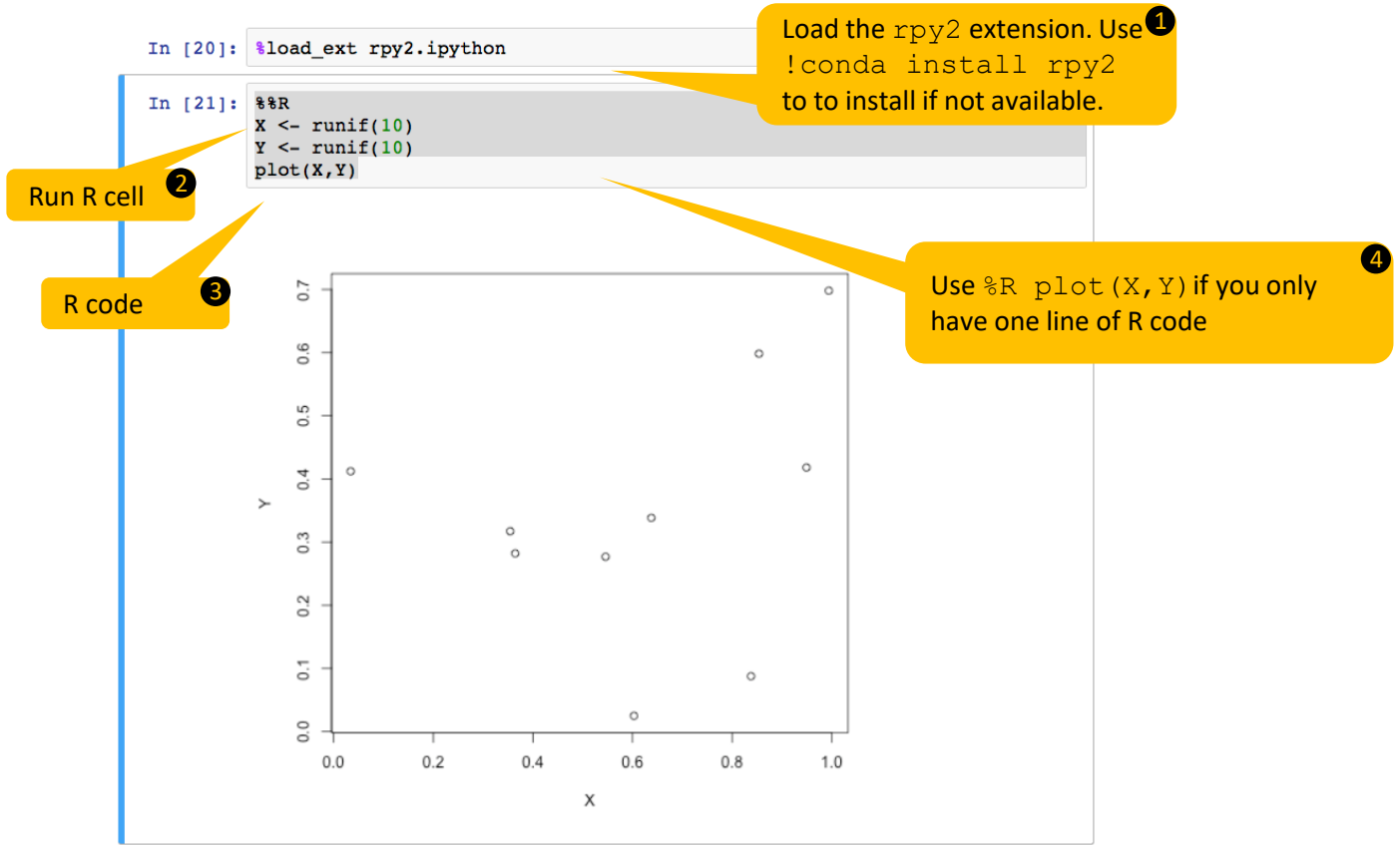
over basic magic commands:

Char	Description
%env	List your environment variables.
%pwd	Show current working directory.
%ls	List files and folders of current working directory.
%time	Times the current line.
%save	Saves the current line.
%load "filename/URL,..."	Loads a file/document.

Further details on magics: https://ipython.org/ipython-doc/3/interactive/magics.html

Further advanced features of Jupyter Notebooks: Magics example: Embed R code

Insert R code as chunks:



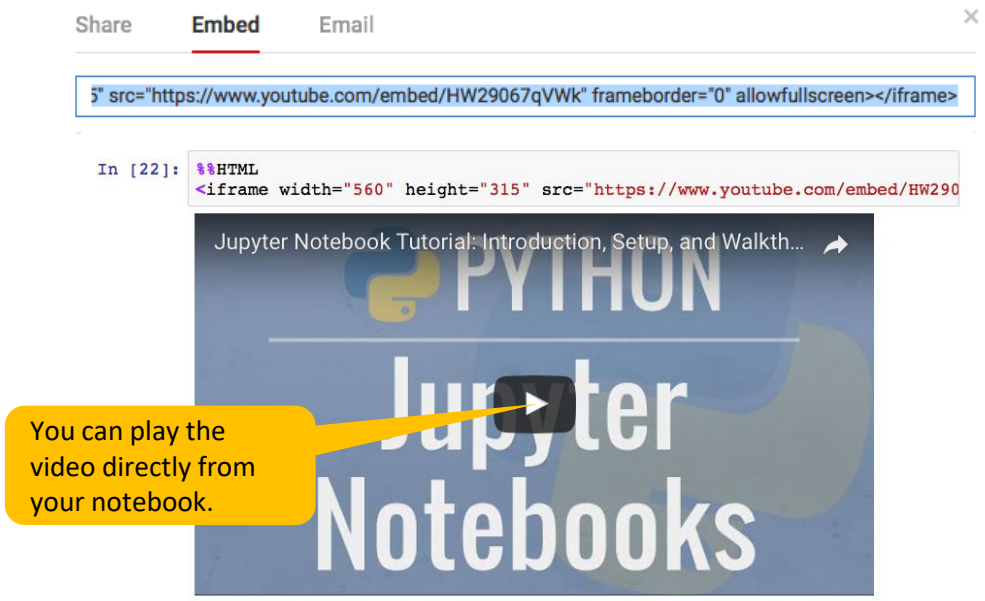
Further advanced features of Jupyter Notebooks: Magics example: Embed a YouTube Video

Goal: Render HTML directly in your notebook and thus embed images and other media.

Example: Include YouTube videos in your website.

Step 1: Go on YouTube, select a video and select "Share">"Embed" and copy the HTML code.

Step 2: use `%%HTML` then add the HTML code in the notebook.



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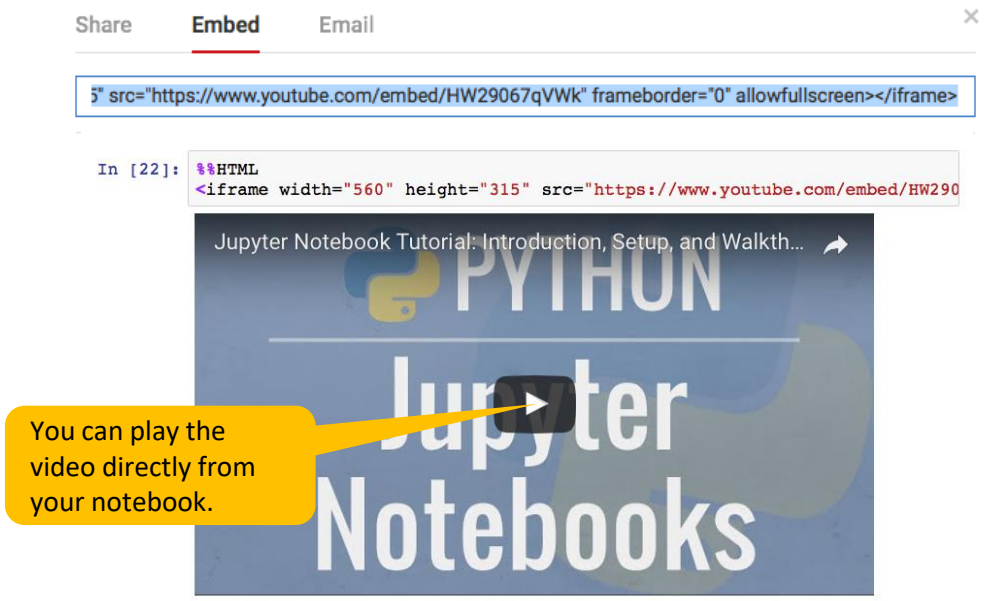
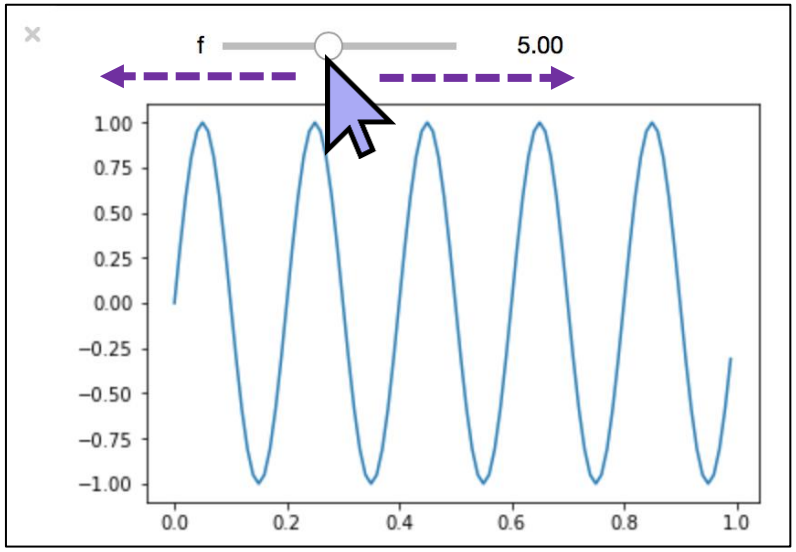


Further advanced features of Jupyter Notebooks: Interactive widgets

- Control parameters of Python Code manually
- Generate interactive visualizations
- Provide "lightweight apps"



https://blog.dominodatalab.com/interactive-dashboards-in-jupyter/

Using advanced features of code notebooks