

Part II: Python

Python is one of the most popular general-purpose programming languages

Rank	Language	Ratings
1	Java	20.5%
2	C	14.6%
3	C++	6.7%
4	C#	4.3%
5	Python	4.3%
6	PHP	2.8%
7	Visual Basic.Net	2.6%
8	JavaScript	2.3%
9	Perl	2.3%
10	Ruby	2.2%

Python has many applications

- Web development
- Application development
- Computer graphics
- Scientific computing
 - Bioinformatics
 - Machine learning
 - Simulations

<https://www.python.org/about/quotes/>

We use the Anaconda Python distribution

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IPython QtConsole

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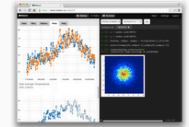
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Simple python console
for small problems



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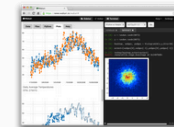
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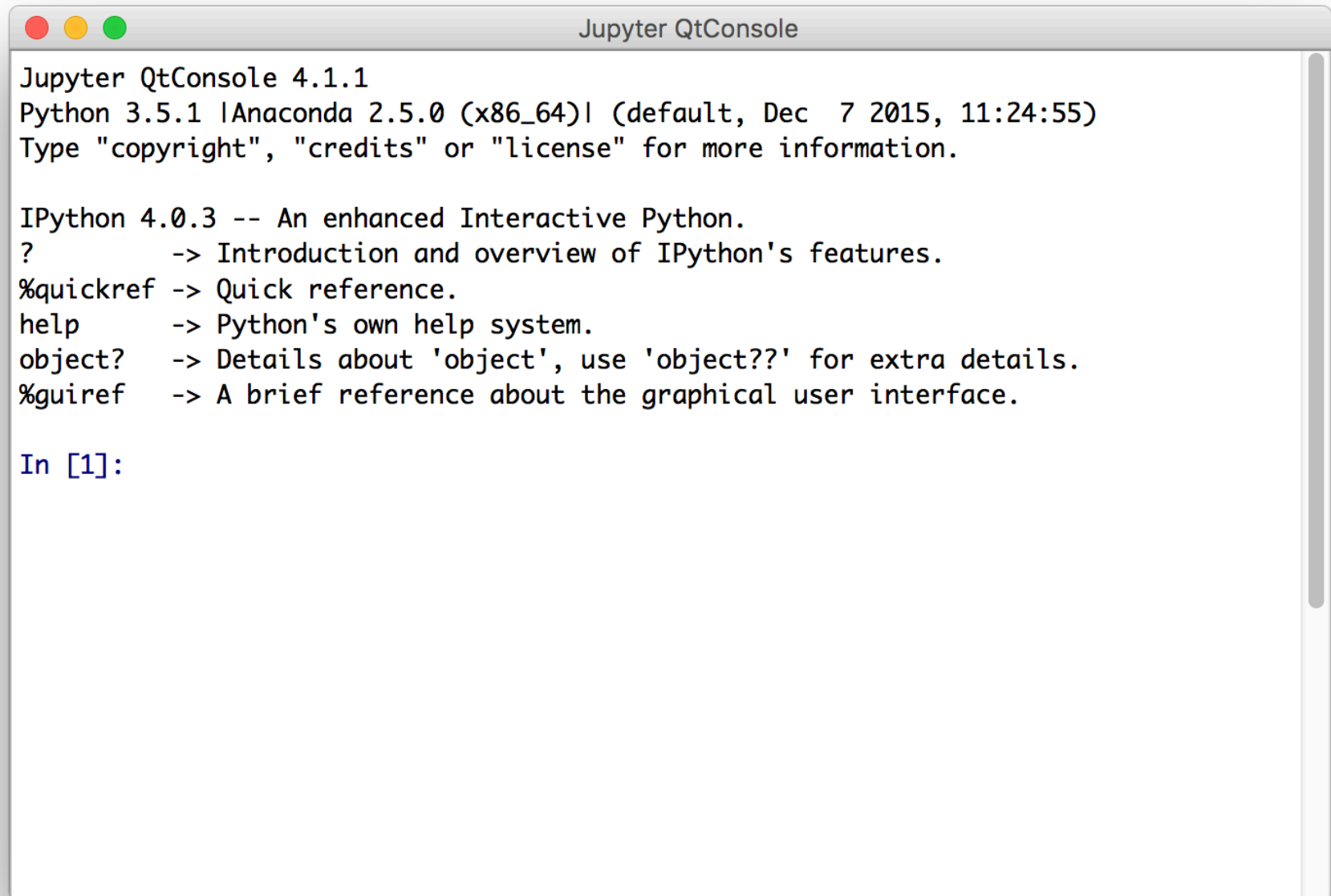
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IPython QtConsole



The screenshot shows a window titled "Jupyter QtConsole" with a standard macOS-style title bar (red, yellow, and green buttons). The window contains the following text:

```
Jupyter QtConsole 4.1.1
Python 3.5.1 |Anaconda 2.5.0 (x86_64)| (default, Dec 7 2015, 11:24:55)
Type "copyright", "credits" or "license" for more information.

IPython 4.0.3 -- An enhanced Interactive Python.
?                -> Introduction and overview of IPython's features.
%quickref        -> Quick reference.
help             -> Python's own help system.
object?         -> Details about 'object', use 'object??' for extra details.
%gui?            -> A brief reference about the graphical user interface.

In [1]:
```



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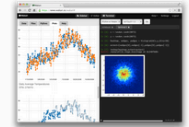
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Similar to R Studio, but not as full featured.

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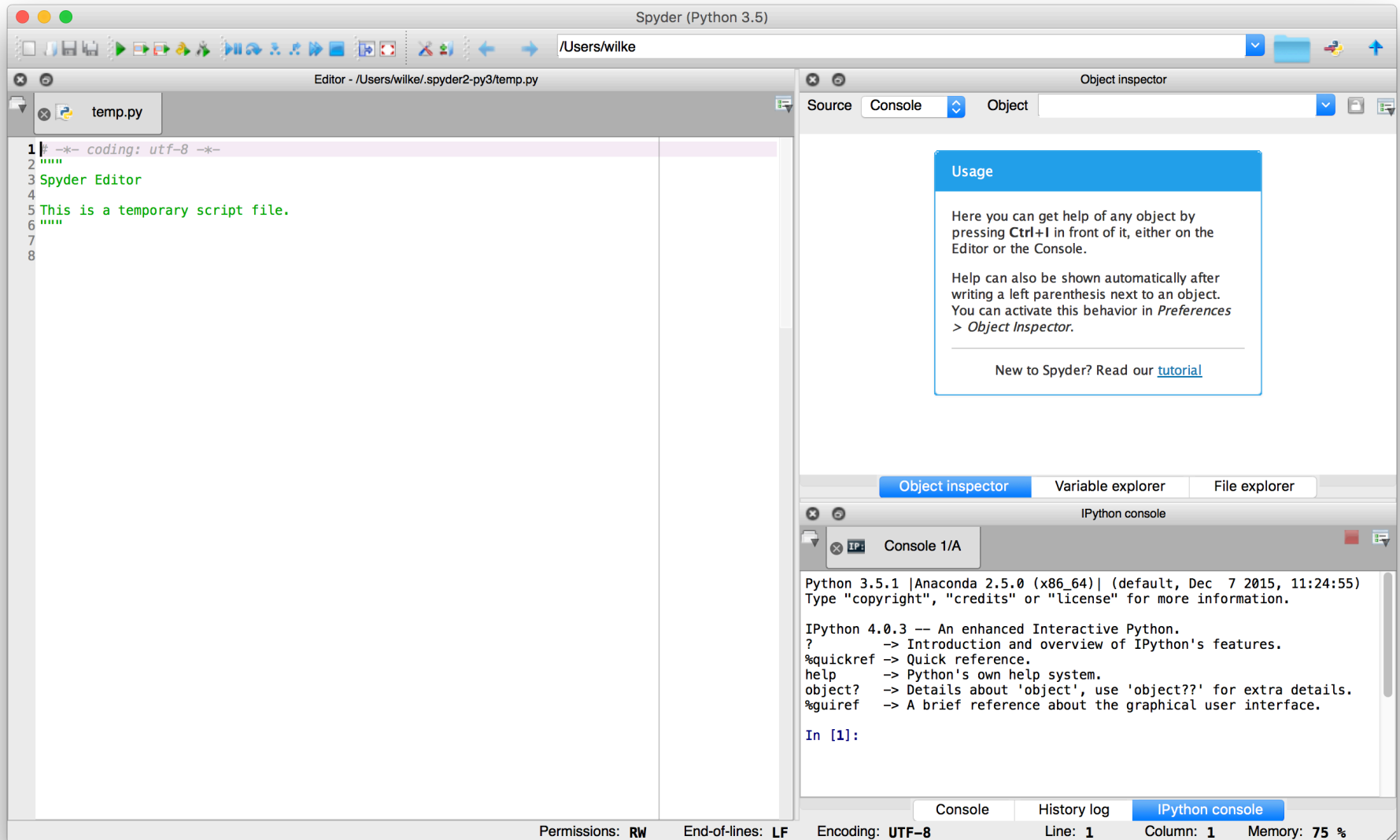
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Spyder





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IPython Notebook

Mix text and python code,
similar to R Markdown

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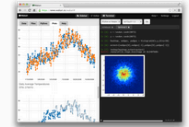
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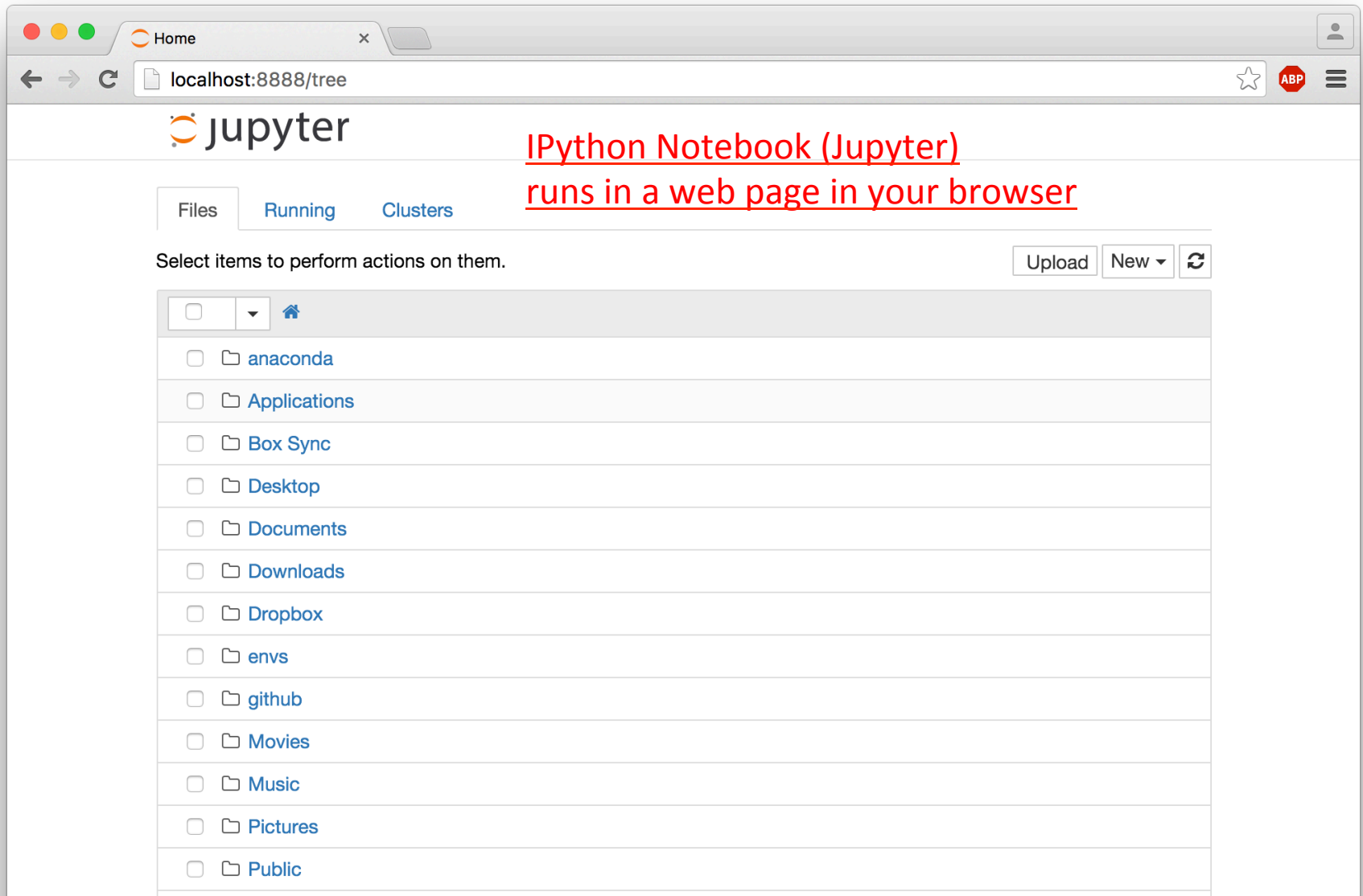
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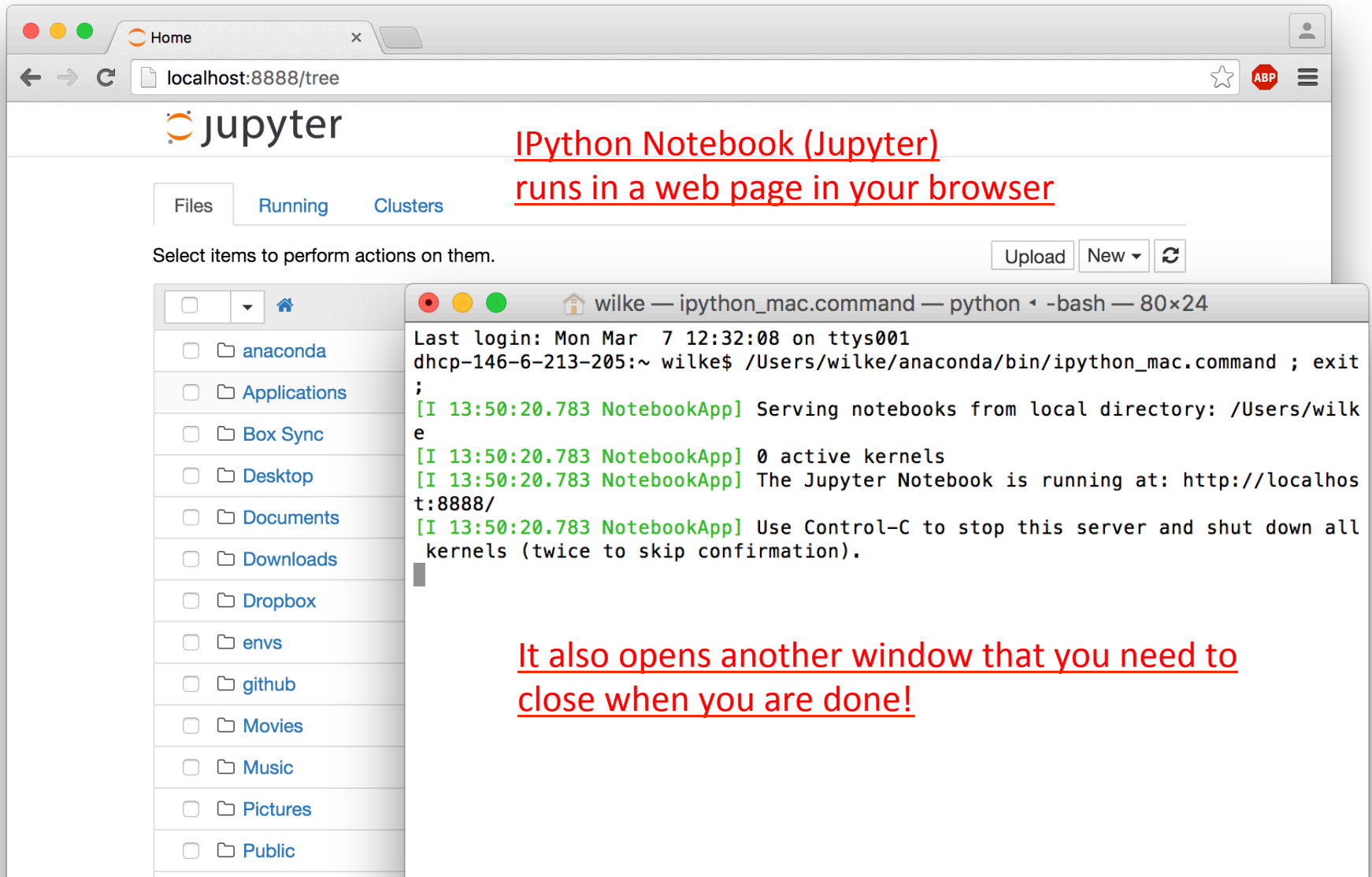
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IPython Notebook



IPython Notebook



The image shows a web browser window displaying the Jupyter Notebook interface. The browser's address bar shows `localhost:8888/tree`. The Jupyter logo is visible, and there are tabs for 'Files', 'Running', and 'Clusters'. Below these, a message says 'Select items to perform actions on them.' with buttons for 'Upload', 'New', and a refresh icon. A sidebar on the left lists various folders like 'anaconda', 'Applications', 'Box Sync', 'Desktop', 'Documents', 'Downloads', 'Dropbox', 'envs', 'github', 'Movies', 'Music', 'Pictures', and 'Public'. Overlaid on the bottom right is a terminal window titled 'wilke — ipython_mac.command — python - bash — 80x24'. The terminal output shows the command `/Users/wilke/anaconda/bin/ipython_mac.command ; exit ;` being executed, followed by several status messages from the NotebookApp, including 'Serving notebooks from local directory: /Users/wilke', '0 active kernels', and 'The Jupyter Notebook is running at: http://localhost:8888/'.

IPython Notebook (Jupyter)
runs in a web page in your browser

It also opens another window that you need to close when you are done!