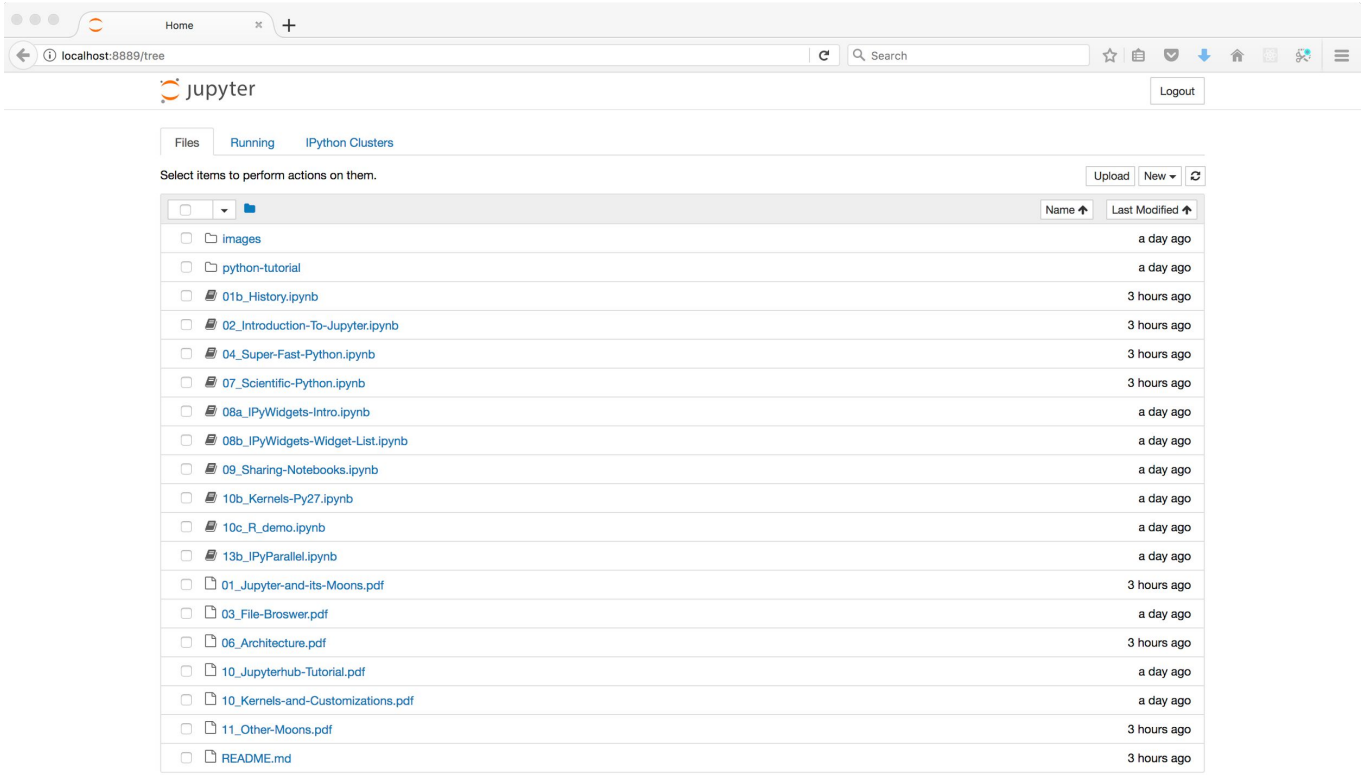
Jupyter Apps and Jupyter Lab

Getting more out of Jupyter

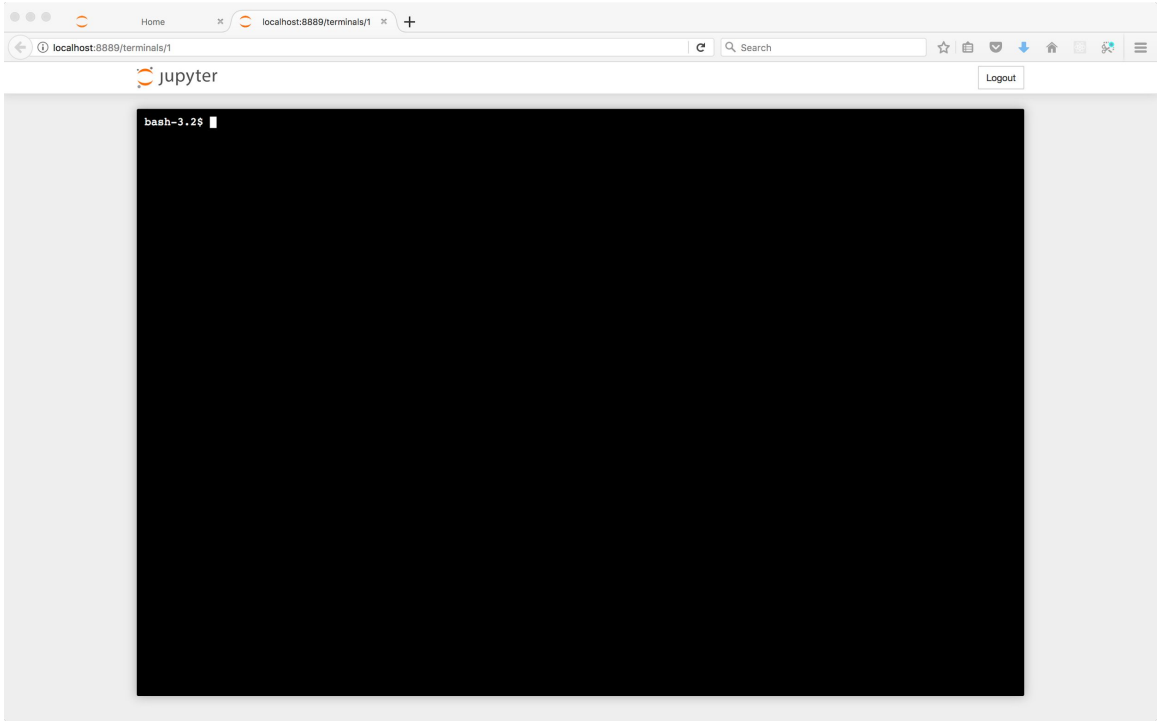
Doing more with the Notebook interface

- Other interfaces often used in conjunction with notebooks
  - Terminal
  - Text editor
  - File browser
  - Custom dashboards
- Some available from the regular Jupyter Interface

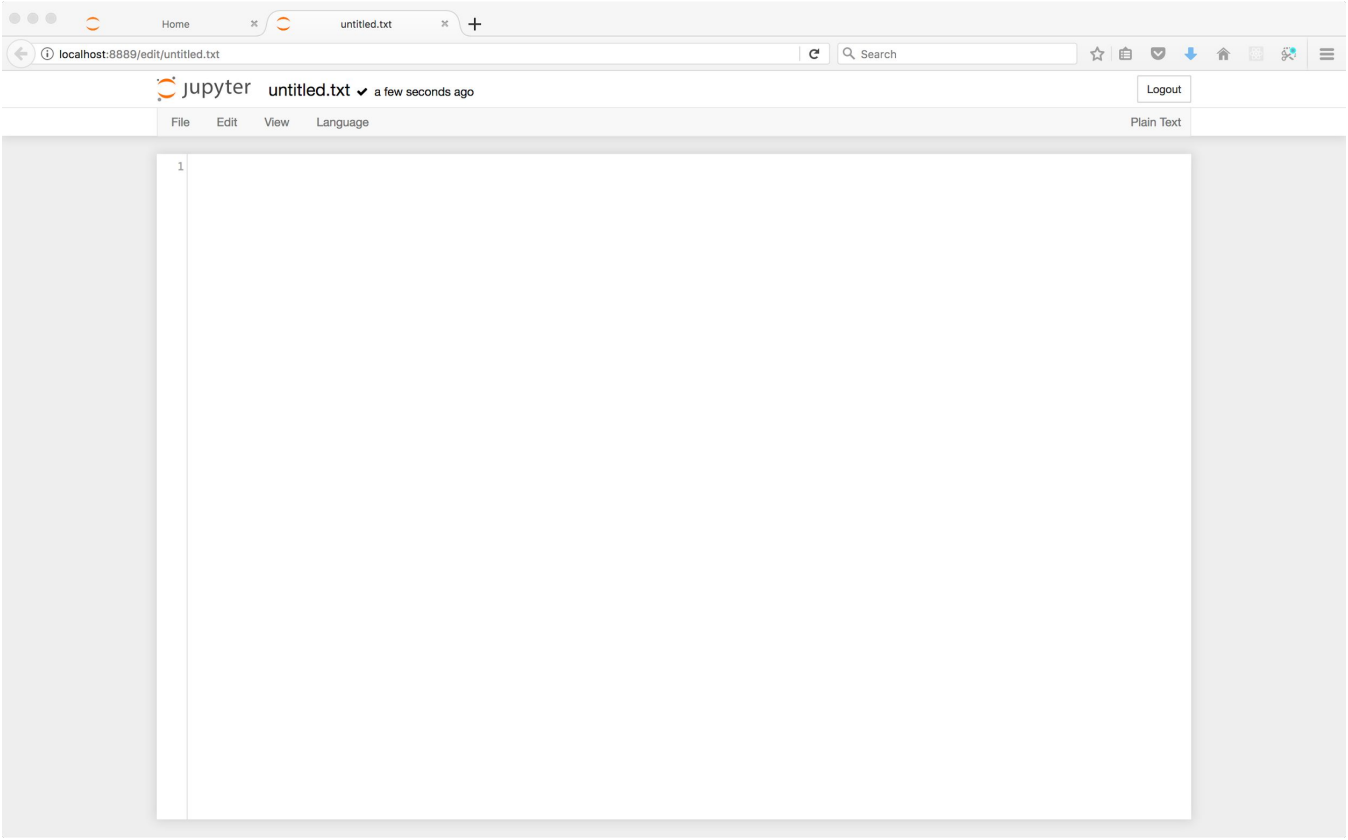
Notebook file browser



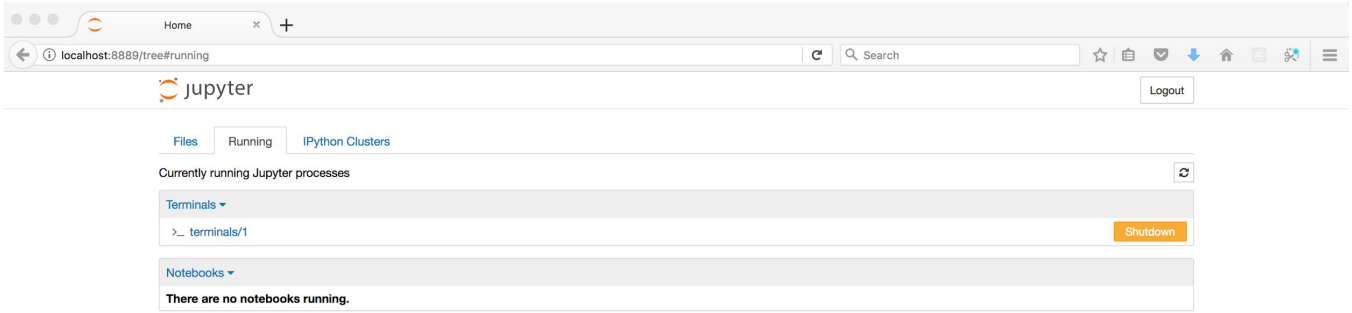
Terminal


Home
localhost:8889/terminals/1
localhost:8889/terminals/1
Search
jupyter
Logout
bash-3.2$

Text Editor


Home
untitled.txt
localhost:8889/edit/untitled.txt
Search
jupyter
untitled.txt
a few seconds ago
Logout
File
Edit
View
Language
Plain Text
1

Running processes



Jupyter Notebook limitations (some)

- Built in 2011 using jquery, bootstrap, require.js
- Implementing some new features hard
  - Realtime collaboration (model and view were coupled)
  - Collapsing input/output (developers relied on DOM/CSS, changes would break)
- No private APIs
- Extending can be painful
  - Adding new panels or custom areas/overlays outside of code cells
  - No dashboards!

Custom Notebook environments

- GenePattern
  - http://genepattern-notebook.org/
- KBase
  - http://kbase.us/

2015 user survey

- Top needs
  - Integration with version control systems
  - Improved code/text editing
  - Flexible layout and integration between the building blocks
  - Debugger, profiler, variable inspector

Jupyter Lab

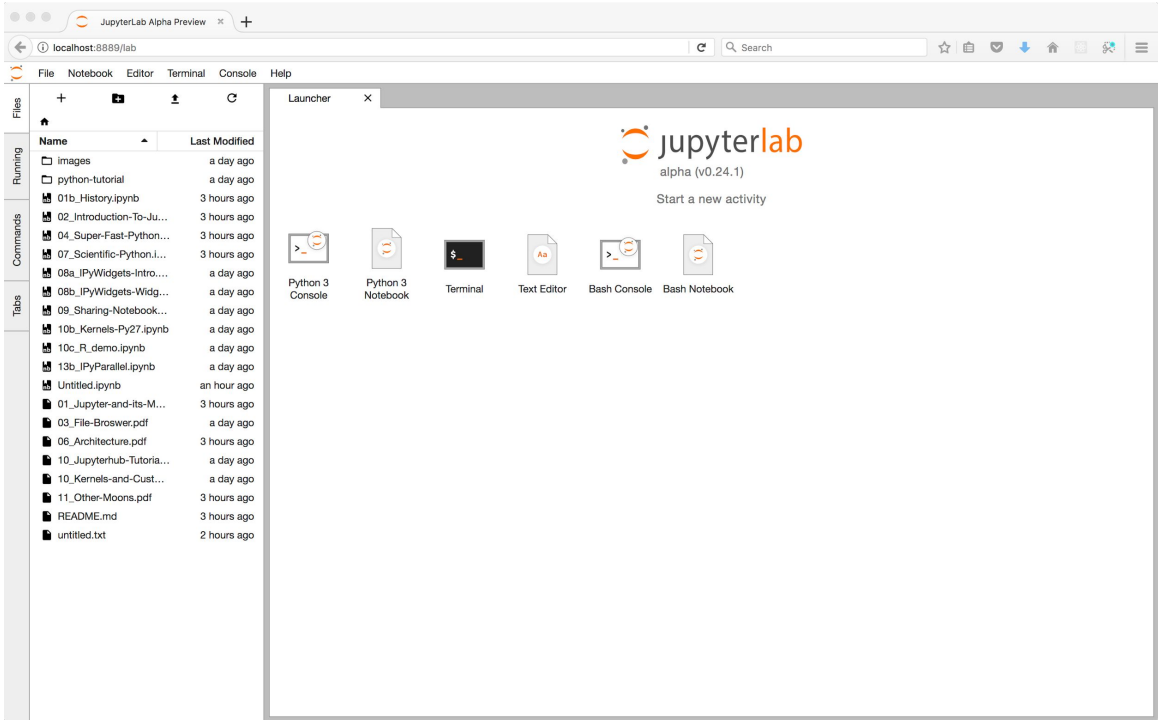
- Next generation Jupyter UI
- Not just notebooks
- Extensions for Terminal, Text Editor, File Browser, Notebook built in
- Introduces tabs and windows
- Closer to a desktop app

Jupyter Lab

- Customizable by adding javascript extensions
- All the built-ins are implemented as extensions
- Goal is a customizable custom interface

Running Jupyter Lab

Run “jupyter lab” instead of “jupyter notebook”



Other interfaces

- Hydrogen
  - https://atom.io/packages/hydrogen
- Nteract (atom editor + Hydrogen)
  - https://nteract.io/atom
- Qt console
  - https://github.com/jupyter/qtconsole
- Spyder IDE
  - https://github.com/spyder-ide/spyder