Jupyter_quick_tour

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[1]:
```
from IPython.core.interactiveshell import InteractiveShell
InteractiveShell.ast_node_interactivity = "all"

# Reload all modules imported with %aimport
%load_ext autoreload
%autoreload 1

%matplotlib inline
```

1 Jupyter

- Notebooks
  - a vehicle to communicate your thoughts to others
  - a container for code, text, graphics
  - a Web-based IDE
- Jupyter is a notebook server
  - Server either local or in cloud
  - client usually on local machine
  - Multi-language
    - Jupyter is short for: **Ju**lia, **Pyt**hon, **R**

2 Jupyter: a vehicle for communication (NOT just coding)

- Code and "mark-down"
- Lectures via Notebooks !
- Assignments
  - Your notebooks are your "lab notebook"
    - The final result is not always the most interesting part !
      - Process and what you learned on the journey is important
    - Define the problem you are working on
    - Describe and explore the data
      - what were the challenges ? Cleaning ? Transformation ?
    - Overview of your methodology/research method
    - Experiments conducted/results, both success and failure

        * Describe your steps in English, followed by code
- Code-only: limited credit !

Tip: It's a movie not a photograph !

2.1 Jupyter tour

- Jupyter dashboard
- Header and body
- Command mode/edit mode
  - Keyboard shortcuts
- Types of Cells
  - Cells can contain either code or markdown (e.g., text)
    * Code shows your solution
    * Markdown used to tell the story of your journey

2.2 Jupyter markdown

- Markdown
  - Markdown cheat sheet
  - Equations, categorized

A couple of great tools - Detexify - hand-drawn symbols convert to TeX ! - Mathpix - Screen-shot to markdown !

2.3 Introspection

- TAB completion
  - Data properties
- `?`
  - Function help
- `??`
  - Code inspection

Sample notebook

2.4 Checkpoints

- Jupyter will save a snapshot ("checkpoint") each time you save your notebook
- Jupyter will auto-save your notebook as you change it
  - You can discard the auto-saved changes by reverting back to a checkpoint