Jupyter_quick_tour

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```python
[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, **Py**thon, **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