

Computing Tools: Introduction to Jupyter

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Jupyter

- Acronym for **Julia**, **Python** and **R** programming languages
- Free, open-source, online platform to “support interactive data science and scientific computing across all programming languages” (from “About Us” page below)
- Main document interface is a “notebook” that combines
- These notebooks enhance transparent, reproducible research practices, and can also be used for assignments, papers, presentations, and publications
- See
 - Jupyter home: <http://jupyter.org/>
 - Jupyter “About Us”: <http://jupyter.org/about>

JupyterHub

- Server-based version of Jupyter
- Advantages
 - Remote, shared access to resources
 - Can set up for multi-user environment and groups (e.g., students in a class)
 - Can set up so that users can sign in with NetID and password
 - Can pre-install languages and other computing tools
 - Multiple notebook extensions facilitate collaboration, presentations, and teaching

JupyterLab

- Integrated Development Environment (IDE) of JupyterHub
- Can access multiple tools from same interface
- Can organize output, files, and directories while also working with tools
- Note:
 - This is the Jupyter equivalent of Rstudio for R, Spyder for Python, or the common Stata interface for Stata