

# Text Editors, Development Environments, and Jupyter

Matthew Cahn

Dept. of Molecular Biology/Research Computing

[mcahn@princeton.edu](mailto:mcahn@princeton.edu)

October 30, 2018

# What's a Text Editor?

- A text editor is a program that allows you to enter text (including program code) and save it to a file.
- An IDE (Integrated Development Environment) includes a text editor, a console, and a debugger.
- Jupyter is a combination of these that runs in a web browser.

# Choosing an Editor

- Ease of use
- Purpose
- Language aware
- Remote editing
- Platform
- Other features – version control, compilation, etc.

# Plain Text

- For entering program code you need to use a “**plain text**” editor.
- Plain text – the ASCII characters (no accents, fancy punctuation, Asian language characters, etc.).
- Don’t use Microsoft Word or Open Office.
- Look at the open/close quotes in the first bullet point. They are not plain text.

# Notepad and Textedit

Notepad (Windows)

Textedit (Mac)

- Pros:
  - Easy to use
  - Always there
- Cons:
  - Not "aware" of languages

Good for: A quick view or edit of text

# Nano

- Linux, Mac
- Pros:
  - Easy to use
  - Usually there
  - Language-aware (set up your `.nanorc` file)
- Cons:
  - Limited capability
- Good for: A quick view or edit of text or code

Note: Mouse support can be turned on

# Atom

- Windows, Mac, and Linux
- Pros:
  - Language-aware
  - Share workspaces
  - Version control with Git and Github
  - Remote editing

# Vi (Pronounced: “Vee eye”)

- Mac and Linux
- vi is vim
- Pros:
  - Always there
  - Language-aware
- Cons:
  - Usage is unobvious (modal)
- Good for: A limited edit of text or code



# Emacs

- Linux, Windows, Mac (Aquamacs)
- Pros:
  - Usually there (Linux)
  - Language-aware
  - Remote editing
  - Python console, code compilation, differences, etc., etc.
- Cons:
  - Complicated for new users
- Good for: Large multi-file programming projects
  - Especially if you know the language well

# Spyder

- Linux, Mac, and Windows
- An IDE (Integrated Development Environment) --Editor, Debugger, Console, Object Explorer
- Pros:
  - Comes with Anaconda
  - Python object-aware
- Cons:
  - Complicated for new users
- Good for: Large multi-file programming projects
  - Especially if you *do not* know the language well

# Jupyter

- Linux, Mac, and Windows
- Pros:
  - Comes with Anaconda
  - Aware of Python and R
  - Ease of use
  - Combine code, graphics, and fancy text in one file
- Cons:
  - Not good for large multi-file projects
- Good for: Learning Python, Iterative Experimentation

# Jupyter Server

<https://jupyter.adroit.princeton.edu> (Requires Princeton netID)

<https://jupyter.rc.princeton.edu> (Requires Tigress account)

- Pros:
  - All the Pros of Jupyter
  - Nothing to install
  - Has Python, Julia, Bash, and R interpreters
- Cons:
  - Princeton only
  - Requires a network connection
- Good for:
  - Programming without install anything

# Jupyter Labs

- Linux, Mac, and Windows
- Pros:
  - All the Pros of Jupyter
  - Like Jupyter with extra capabilities:
    - Terminal, console, file browser