The Jupyter Dashboard, Notebook and Terminal Interfaces in nanoHUB

1. Log in to https://nanohub.org/
2. Launch Jupyter Notebooks in nanoHUB https://nanohub.org/tools/jupyter

A Jupyter **Dashboard** will open. The dashboard lists the files and directories (folder icons) that are in your nanoHUB filespace and helps you manage your Jupyter Notebooks. It looks something like this:

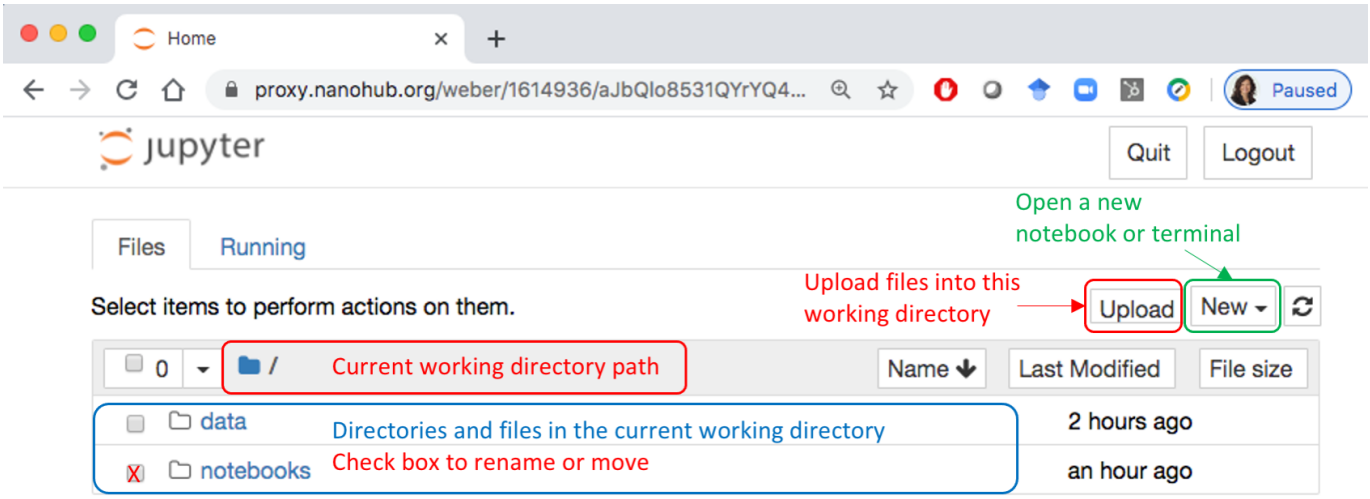
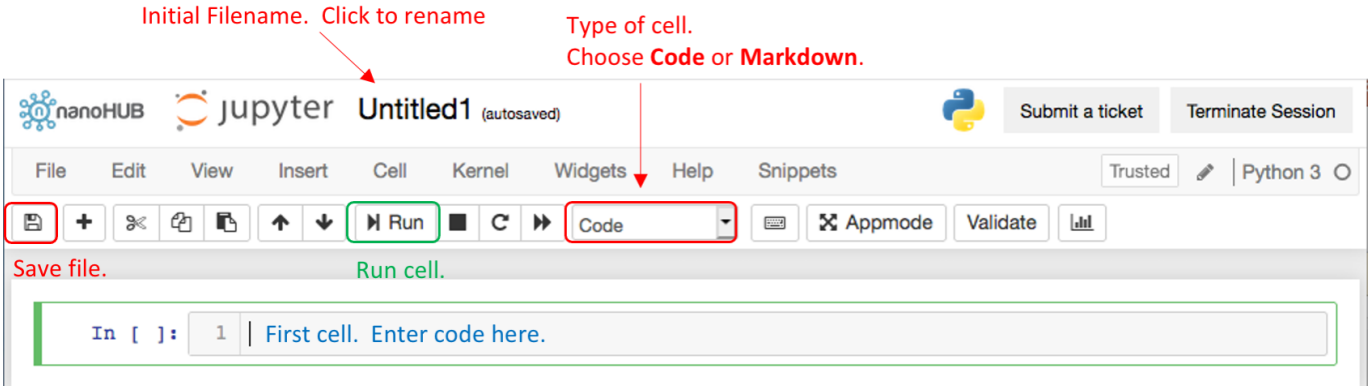


Figure 1: Example Juptyer Dashboard

Things you can do in your Jupyter Dashboard

- See your current working directory - that is the path shown in the grey bar
- See the folders and files in your working directory
- Click on path or folders to navigate to higher- or lower-level directories
- Create new directories and files
- Rename and move folders and files
- Upload files into your working directory
- Export or download files to your computer

3. From the **New** dropdown menu, create a new **Python3** Jupyter notebook.



You can access this resource along with support services in nanoHUB: https://nanohub.org/resources/35218

Figure 2: Example Juptyer Notebook (Python3)

Things you can do in a Jupyter Notebook

- Run the cells in the notebook by clicking on Run or pressing shift-enter
    - Look at the bracket in the left margin to see whether the cell is still running
        - An asterisk [*] means a cell is currently running or will run after the previous cell(s) have run
        - A number in the brackets [1] means that the cell has completed running
- Edit the notebook. Type text in the cells. Create new cells.
- Run selected bash shell commands in code cells
- Save the notebook
- Download the notebook as a .ipynb file or export it in different formats
- Close the notebook
- Terminate the Jupyter session

4. From the **New** dropdown menu, open a Terminal.

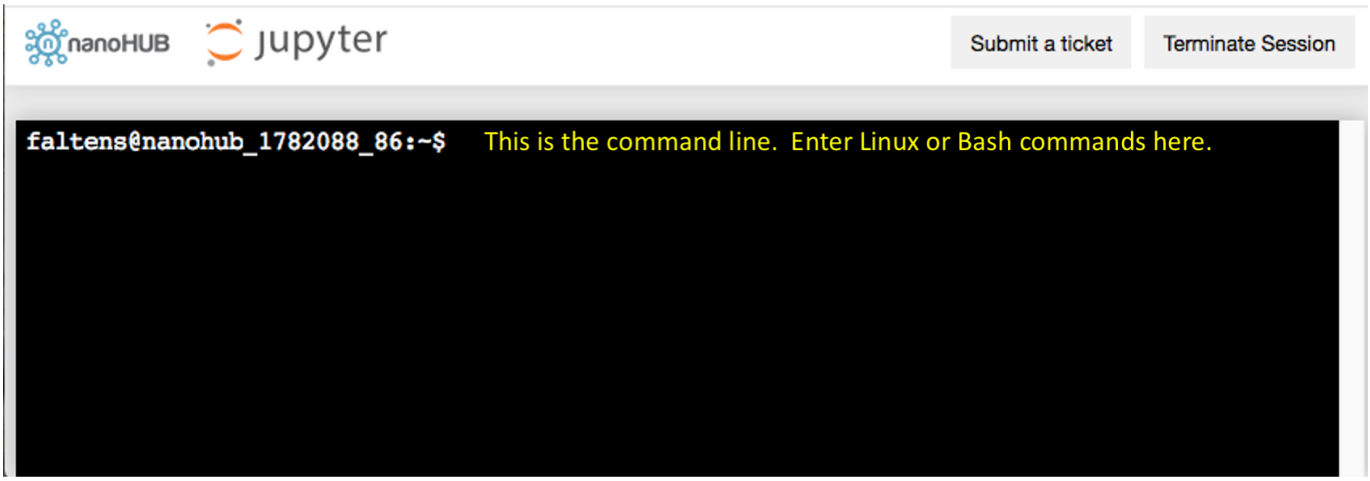


Figure 3: Example Juptyer Terminal

Things you can do in a Jupyter Terminal window

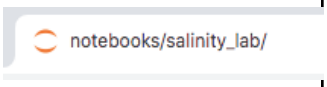
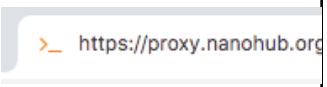
Run selected bash shell commands

- `ls` = list
- `ls -l` = list long- with more information
- `mkdir d_name` = make directory called *d_name*
- `cd d_name` = change directory to a sub-directory called *d_name*
- `cd ..` = change directory to the parent directory (read that as cd dot dot) = go up one level
- `mv file1 d_name` = move *file1* into directory called *d_name*
- `mv d_name1 d_name2` = move directory *d_name1* into directory *d_name2*

Be mindful that there is no undo command, and you are not prevented from inadvertently deleting files forever - unless you use git!

Nifty Tip: After you type the first letter, or first few letters, of an existing filename or directory name, press the **tab key** to **autocomplete** the filename.

Table 1 Summary of how to perform common functions in each type of Jupyter window

	Jupyter Dashboard	**Jupyter notebook**	**Jupyter terminal**
Icon	 "dashboard"	 "notebook"	"terminal"
What the tab in your web browser looks like			
View Files and Folders	The list is shown	ls	ls
Navigate up and down through folders	click on folders or URL	cd folder_name cd ..	cd folder_name cd ..
Create a new folder	Drowdown menu	mkdir folder_name	mkdir folder_name
View pathname - where am I?	breadcrumbs at top of page	pwd	pwd
Move a file or folder	Click the checkbox, click the Move option	mv item1 folder_name	mv item1 folder_name
	--	Run Jupyter notebook	Run shell scripts
		Edit Jupyter notebook	
		Save Jupyter notebook	
Copy files	Click the checkbox, click Duplicate	File: Make a copy (of this file) cp filename1 filename2	cp filename1 filename2

There are more features, with new features being added from time to time. This document should be enough to get you started. Now it is time to explore!