

INTRODUCTION TO JUPYTER NOTEBOOK AND JUPYTERLAB

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PROJECT JUPYTER

- Project Jupyter is a project and community whose goal is to "develop open-source software, open-standards, and services for interactive computing across dozens of programming languages"
- This project was born out of the IPython Project in 2014.
- The name “Jupyter” is a combination of Julia, Python, and R. However, it is possible now to run over 70 different languages.

- Project Jupyter has developed and supported the interactive computing products Jupyter Notebook, JupyterHub, and JupyterLab.



PROJECT JUPYTER

- **Jupyter Notebook:** A browser-based application that allows you to create and share documents (i.e. Jupyter Notebook files) that contain live code, equations, visualizations and narrative text. The Jupyter Notebook file format is “.ipynb”, which is short for “interactive python notebook”.
- **JupyterLab:** A browser-based application that allows you to access multiple Jupyter Notebook files as well as other code and data files. It is a new version of Jupyter Notebook that includes Notebook, text editor, console and a file explorer.
- **JupyterHub:** A multi-person version of Jupyter Notebook and Lab that can be run on a server. It is an encapsulated environment for multiple users.



WHY NOTEBOOK?

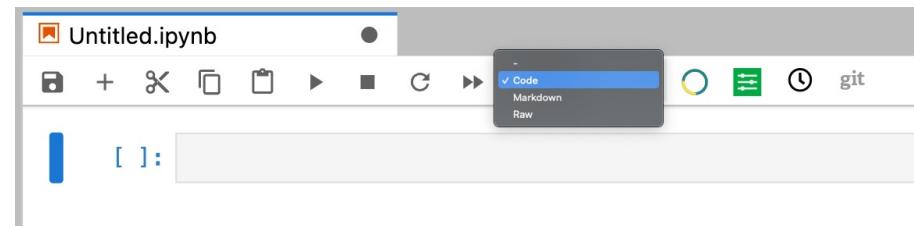
- It is a single document that combines explanations with executable code and its output
- It is easy to share
- It allows to write and run code interactively

- An ideal tool to provide:
 - reproducible research results
 - documentation of processes
 - instructions
 - tutorials and training materials



JUPYTER NOTEBOOK CELLS

- A Jupyter notebook consists of cells. The two main types of cells are code cells and markdown cells
- You can specify a cell as a code cell or markdown cell using the pulldown menu in the toolbar of your Jupyter notebook.
- For changing the cell type, you can also use keyboard shortcuts: hit “Esc” and then “y” (for code) and “Esc” and then “m” (for markdown) while a cell is selected. Then you should hit “Enter” to go to the edit mode.
- Running a cell means that you will execute the cell’s contents. To execute a cell (or several cells sequentially), you can use the the toolbar that is located on the top of the Notebook tab.
- “Shift”-“Enter” is the keyboard shortcut for running the current cell.



JUPYTER NOTEBOOK CELLS

- These figures show some Code Cells before and after running.
- If the code returns output, it appears after the code cell in the same cell (if there are several outputs the last line will be shown)
- The order of running cells is important. If you did not run a cell earlier in the document, its results are not known to the later cells. The numbers in the brackets show the order of execution. The other two statuses are:
 - []: when the cell has not been run yet.
 - [*]: when the cell is currently running.

The image displays two side-by-side screenshots of a Jupyter Notebook interface. Both screenshots show the same notebook file, "Intro-demos-1.ipynb".

Screenshot 1 (Left): This shows four code cells in the order they were run. Cell [1] contains the code `print('Hello Africa!')`. Cell [2] contains the code `2+3`. Cell [3] contains the code `a = 2`, `b = a+3`, and `print(b)`. Cell [4] contains the code `b+1` and `b+2`.

Screenshot 2 (Right): This shows the same four cells, but with their outputs displayed below them. Cell [1] has the output `Hello Africa!`. Cell [2] has the output `5`. Cell [3] has the output `5`. Cell [4] has the output `7`. The status bar at the bottom of each screenshot indicates the current cell being run, which is cell [4] in both cases.

JUPYTER NOTEBOOK CELLS

- Markdown cells are used to add text in the Notebook.
- The text is written in markdown (a lightweight markup language).
- You can also insert HTML into markdown cells.
- You can always combine code and markdown cells.
- Check out the following website to know more about Markdown's formatting syntax:

<https://daringfireball.net/projects/markdown/>

<https://www.markdownguide.org/basic-syntax/>

```
# This is an H1
## This is an H2
### This is an H3
```

This is my list:
1. This is the first item.
2. This is the second item.

```
This is an H1
This is an H2
This is an H3
```

This is my list:
1. This is the first item.
2. This is the second item.

WHY JUPYTERLAB?

- JupyterLab is the next generation of the Jupyter Notebook. It has a user interface with more features and capabilities.
- Using JupyterLab, you can open several notebooks or files (e.g., HTML, Text, Markdowns, etc.) as tabs in the same window.
- JupyterLab brings within the same interface a file browser, consoles, terminals, text editors, Markdown editors, CSV editors, JSON editors, interactive maps, widgets, and so on.
- It uses the same server and file format as the classic Jupyter Notebook.
So it is fully compatible with the existing notebooks and kernels.



THE JUPYTER NOTEBOOK INTERFACE

- Jupyter Notebook is very easy to use (it only consists of a file browser and an editor view).
- If you are a beginner and you do not need the following features, you can simply install, and use Jupyter Notebook.

Jupyter Notebook Dashboard

Jupyter Notebook Editor

localhost

jupyter

localhost

jupyter Welcome to Python (unsaved changes)

Rackspace

Welcome to the Temporary Notebook (tmpnb) service!

WARNING

Don't rely on this server for anything you want to last - your server will be deleted after 10 minutes of inactivity.

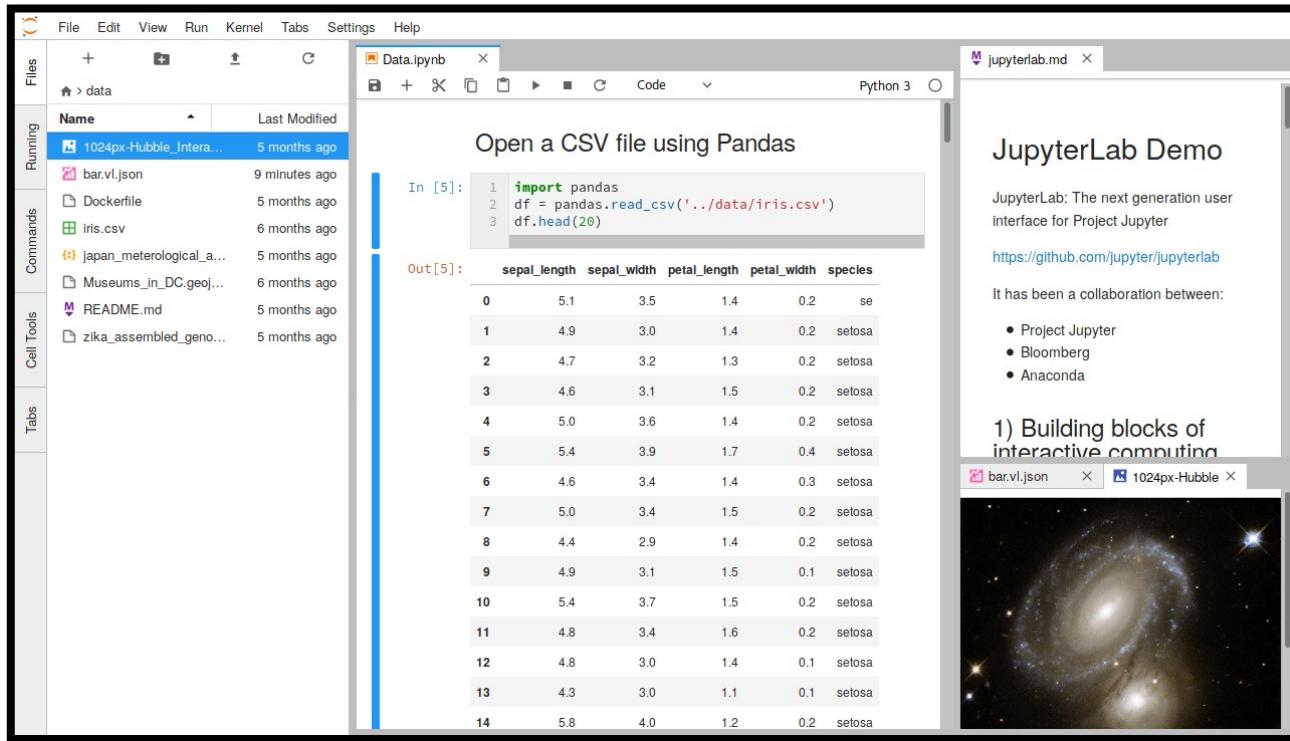
Your server is hosted thanks to Rackspace, on their on-demand bare metal servers, OnMetal.

Cell In Command Mode

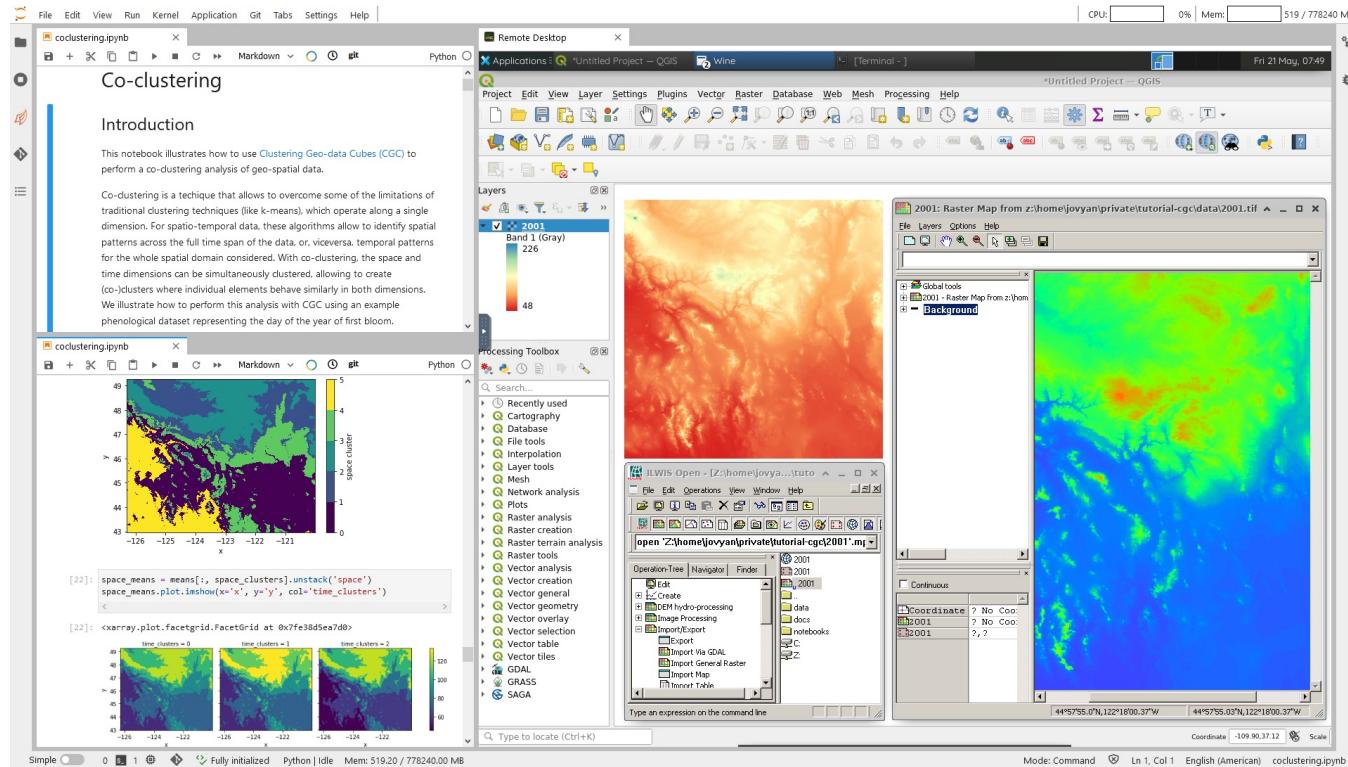
In []:

```
#matplotlib inline
import pandas as pd
import numpy as np
import matplotlib
```

THE JUPYTERLAB INTERFACE



THE JUPYTERLAB INTERFACE



JUPYTER NOTEBOOK INSTALLATION

- You can follow these steps to setup Jupyter Notebook for Python and R on Windows:
 - 1) [Skip this step if you would like to install Python only] Install R: from the Comprehensive R Archive Network [CRAN] (<https://cloud.r-project.org/index.html>), download R for Windows and then install it on the machine.

The screenshot shows the official CRAN website at <https://cloud.r-project.org/>. The main navigation bar includes links for "CRAN", "Mirrors", "What's new?", "Task Views", "Search", "About R", "R Homepage", "The R Journal", "Software", "R Sources", "R Binaries", "Packages", "Other", "Documentation", "Manuals", "FAQs", and "Contributed". The central content area is titled "The Comprehensive R Archive Network" and features a large "R" logo. Below the logo, there are sections for "Download and Install R" (with links for Linux, macOS, and Windows), "Source Code for all Platforms" (with links for Linux, macOS, and Windows), and "Questions About R" (with a link to frequently asked questions). At the bottom, there is information about what R is, how to submit to CRAN, and a note about binary distributions.

The "Download and Install R" section contains the following text:

Precompiled binary distributions of the base system and contributed packages. Windows and Mac users most likely want one of these versions of R:

- Download R for Linux (Debian, Fedora, Redhat, Ubuntu)
- Download R for macOS
- Download R for Windows

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

The "Source Code for all Platforms" section contains the following text:

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the source code. The sources have to be compiled before you can use them. If you do not know what this means, you probably do not want to do it!

- The latest release (2021-11-01, Bird Hippo) [R-4.1.2.tar.gz](#), read [what's new](#) in the latest version.
- Sources of [R alpha and beta releases](#) (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are [available here](#). Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Source code of older versions of R is [available here](#).
- Contributed extension [packages](#)

The "Questions About R" section contains the following text:

- If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

What are R and CRAN?

R is "GNU S", a freely available language and environment for statistical computing and graphics which provides a wide variety of statistical and graphical techniques: linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, etc. Please consult the [R project homepage](#) for further information.

CRAN is a network of ftp and web servers around the world that store identical, up-to-date, versions of code and documentation for R. Please use the CRAN mirror nearest to you to minimize network load.

Submitting to CRAN

To "submit" a package to CRAN, check that your submission meets the [CRAN Repository Policy](#) and then use the [web form](#).

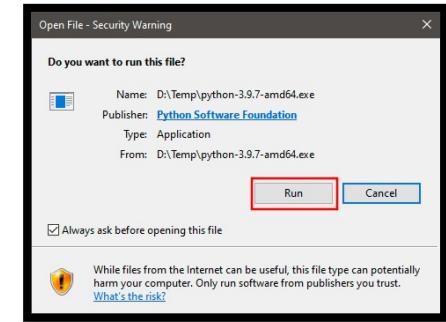
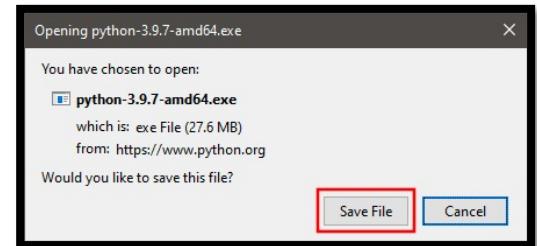
If this fails, send an email to CRAN-submissions@R-project.org following the policy. Please do not attach submissions to emails, because this will clutter up the mailboxes of half a dozen people.

Note that we generally do not accept submissions of precompiled binaries due to security reasons. All binary distribution listed above are compiled by selected maintainers, who are in charge for all binaries of their platform, respectively.

For queries about this web site, please contact the [webmaster](#).

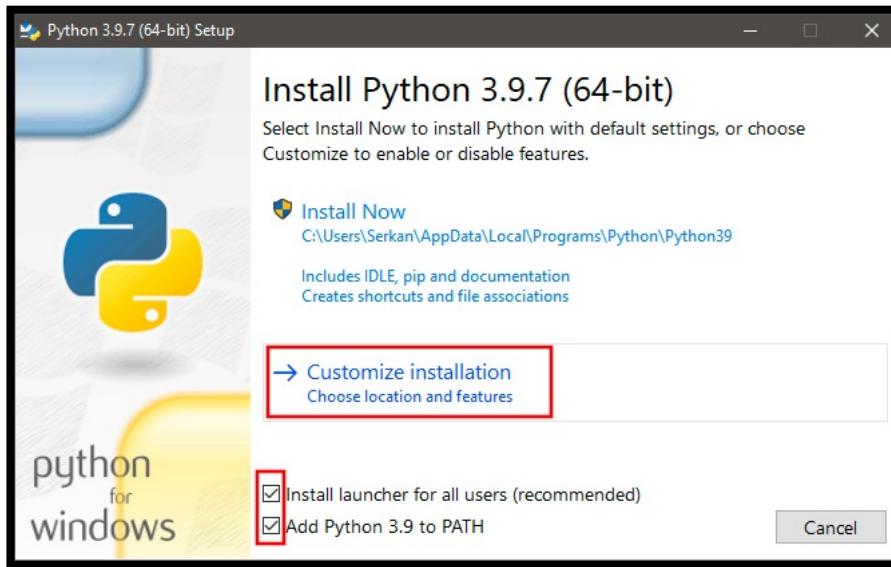
JUPYTER NOTEBOOK INSTALLATION

- 2) Install Python: from the Python website (<https://www.python.org/downloads/>), download Python (e.g., version 3.9.7) for Windows, save the installation file and then run it.



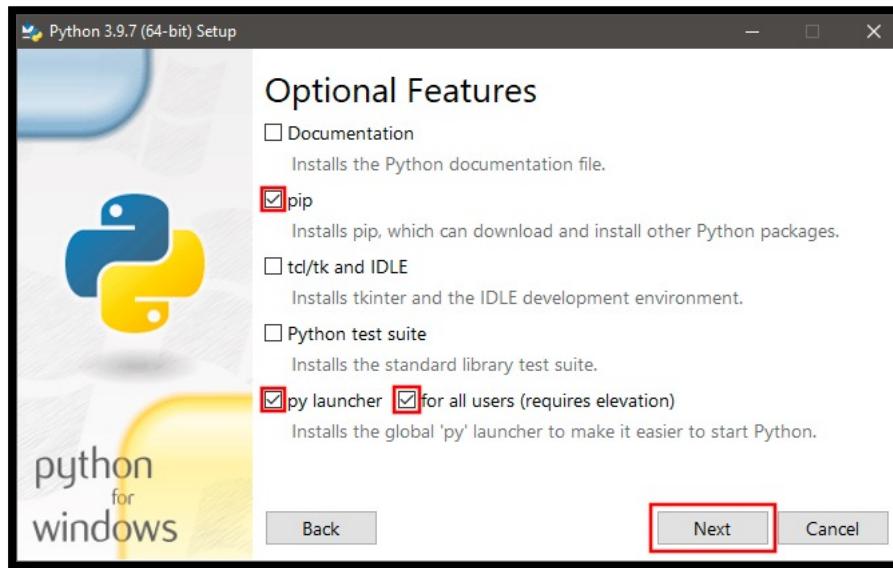
JUPYTER NOTEBOOK INSTALLATION

- Check Install launcher for all users and Add Python 3.9 to PATH boxes (for adding the Python installation path to the PATH environment variable).



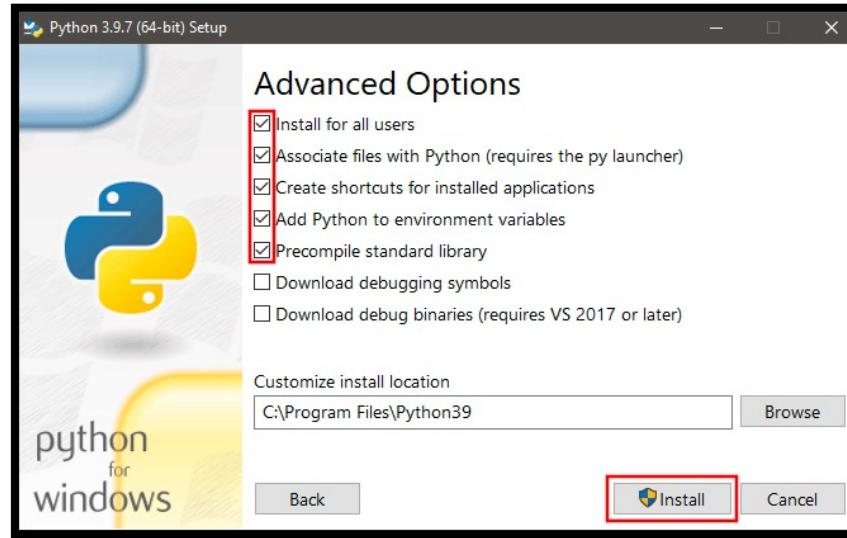
JUPYTER NOTEBOOK INSTALLATION

- Click Customize Installation. Uncheck Documentation, tc/tk and IDLE, and Python test suite options. Check pip, py launcher, and for all users options. Click Next.



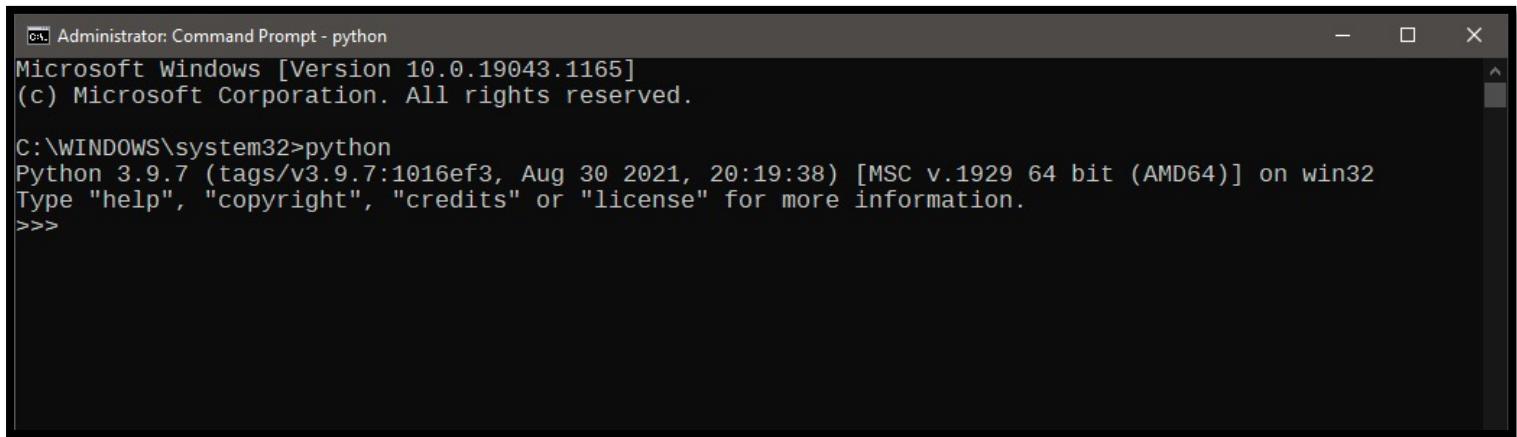
JUPYTER NOTEBOOK INSTALLATION

- Check Install for all users, Associate files with Python, Create shortcuts for installed applications, Add Python to environment variables, and Precompile standard library options. Uncheck Download debugging symbols and Download debug binaries options. Click Install.



JUPYTER NOTEBOOK INSTALLATION

- Once installation is finished, open the Windows Command Prompt and test Python by entering python command. Python command line interface should be available with >>> prompt.



A screenshot of a Windows Command Prompt window titled "Administrator: Command Prompt - python". The window shows the following text:

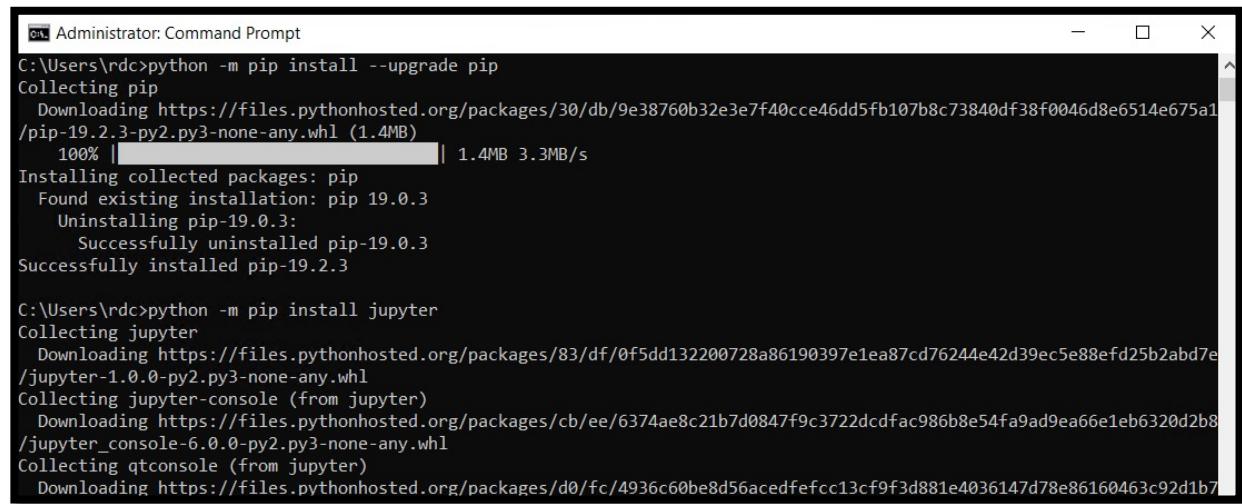
```
Administrator: Command Prompt - python
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>python
Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

JUPYTER NOTEBOOK INSTALLATION

- 3) Install Jupyter Notebook: after installing Python you can use **pip** command to install Jupyter Notebook. Open the Windows Command Prompt and use the following command:

```
python -m pip install --upgrade pip  
python -m pip install jupyter
```



The screenshot shows a Windows Command Prompt window titled "Administrator: Command Prompt". It displays the output of two pip commands. The first command upgrades pip from version 19.0.3 to 19.2.3. The second command installs the Jupyter Notebook package. The terminal window has a black background with white text and a standard Windows title bar.

```
C:\Users\rdc>python -m pip install --upgrade pip  
Collecting pip  
  Downloading https://files.pythonhosted.org/packages/30/db/9e38760b32e3e7f40cce46dd5fb107b8c73840df38f0046d8e6514e675a1  
/pip-19.2.3-py2.py3-none-any.whl (1.4MB)  
    100% |██████████| 1.4MB 3.3MB/s  
Installing collected packages: pip  
  Found existing installation: pip 19.0.3  
  Uninstalling pip-19.0.3:  
    Successfully uninstalled pip-19.0.3  
Successfully installed pip-19.2.3  
  
C:\Users\rdc>python -m pip install jupyter  
Collecting jupyter  
  Downloading https://files.pythonhosted.org/packages/83/df/0f5dd132200728a86190397e1ea87cd76244e42d39ec5e88efd25b2abd7e  
/jupyter-1.0.0-py2.py3-none-any.whl  
Collecting jupyter-console (from jupyter)  
  Downloading https://files.pythonhosted.org/packages/cb/ee/6374ae8c21b7d0847f9c3722dcfac986b8e54fa9ad9ea66e1eb6320d2b8  
/jupyter_console-6.0.0-py2.py3-none-any.whl  
Collecting qtconsole (from jupyter)  
  Downloading https://files.pythonhosted.org/packages/d0/fc/4936c60be8d56acedfefcc13cf9f3d881e4036147d78e86160463c92d1b7
```

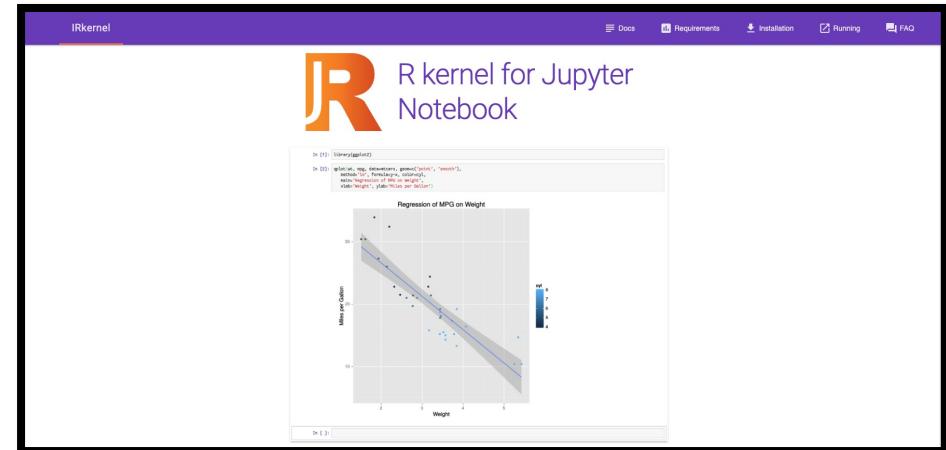
JUPYTER NOTEBOOK INSTALLATION

- 4) [Skip this step if you would like to install Python only] Install R kernel for Jupyter Notebook: IRkernel is an R kernel for Jupyter Notebook. Run the following command in an R console:

```
install.packages('IRkernel')
```

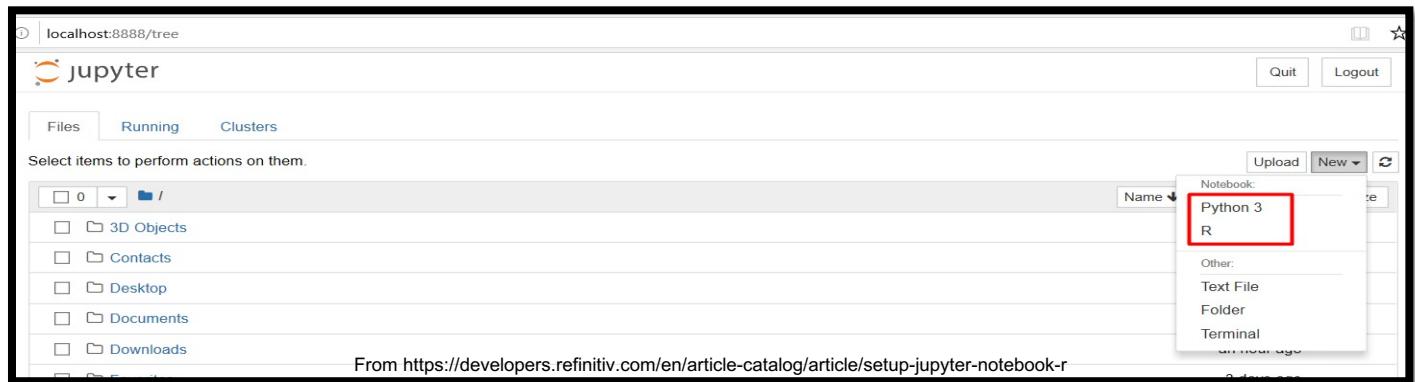
Then, install a kernel spec to make Jupyter see the newly installed R kernel using the following command:

```
IRkernel::installspec(user = FALSE)
```



JUPYTER NOTEBOOK INSTALLATION

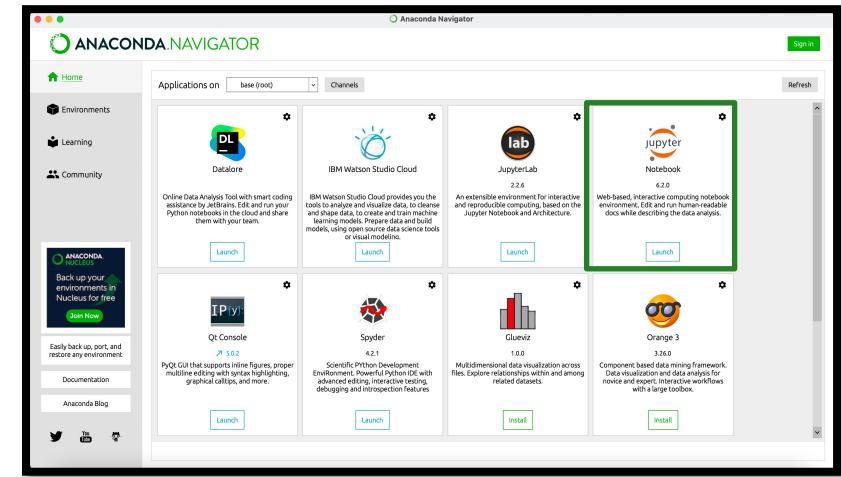
- To start the Jupyter Notebook interface just the Windows Command Prompt and execute the following command: jupyter notebook
- After launching Jupyter Notebook, your default browser will open a webpage (i.e., the figure below) to the following URL: <http://localhost:8888/tree>
- You can navigate through your folders and open a new Notebook or any available Notebooks (with your preferable language, here, R and Python).



From <https://developers.refinitiv.com/en/article-catalog/article/setup-jupyter-notebook-r>

JUPYTER NOTEBOOK INSTALLATION

- Alternatively, you can install Anaconda. Anaconda comes with Python and Jupyter Notebook preinstalled.
- If needed, you can use its installer tool (i.e., conda) to install Jupyter Notebook:
→ `conda install jupyter`
- You can then add R to Jupyter Notebook by typing this command in the Anaconda Prompt:
→ `conda install -c r r-irkernel`
- You can use Anaconda Navigator to open a Jupyter Notebook.



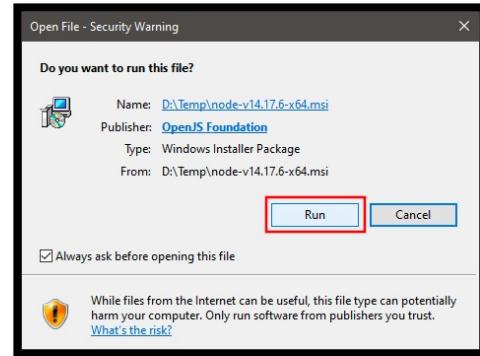
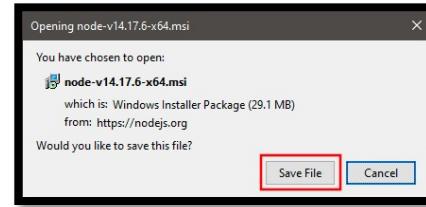
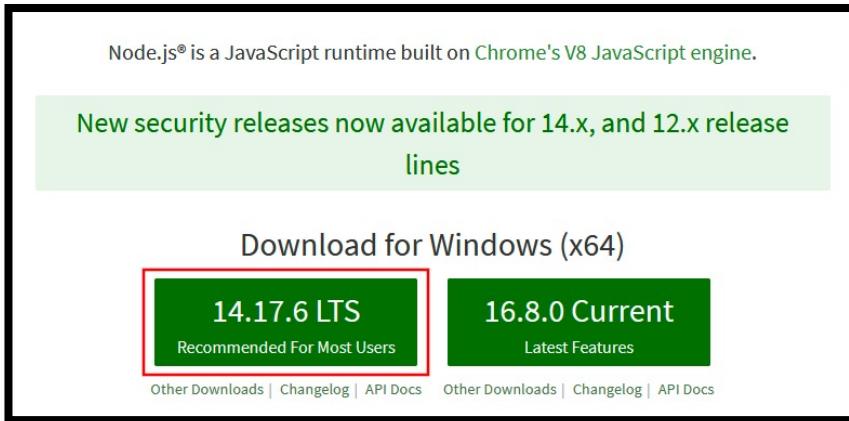
<https://www.anaconda.com/>

JUPYTERLAB INSTALLATION

- This is a guide for the JupyterLab Installation on Windows. Note: Installation steps assume that you have administrator rights on your system. If you don't have administrator rights, follow the steps without selecting "for all users" options and install software packages to your user account only.
- First follow the previously mentioned steps 1) and 2) for Installing R and Python.
- Then, install node.js. Skip this step if you have node.js 14.x or newer already installed on your system. Node.js is not required for the basic JupyterLab installation, but it is required for many extensions. Therefore, it is highly recommended that you install it.

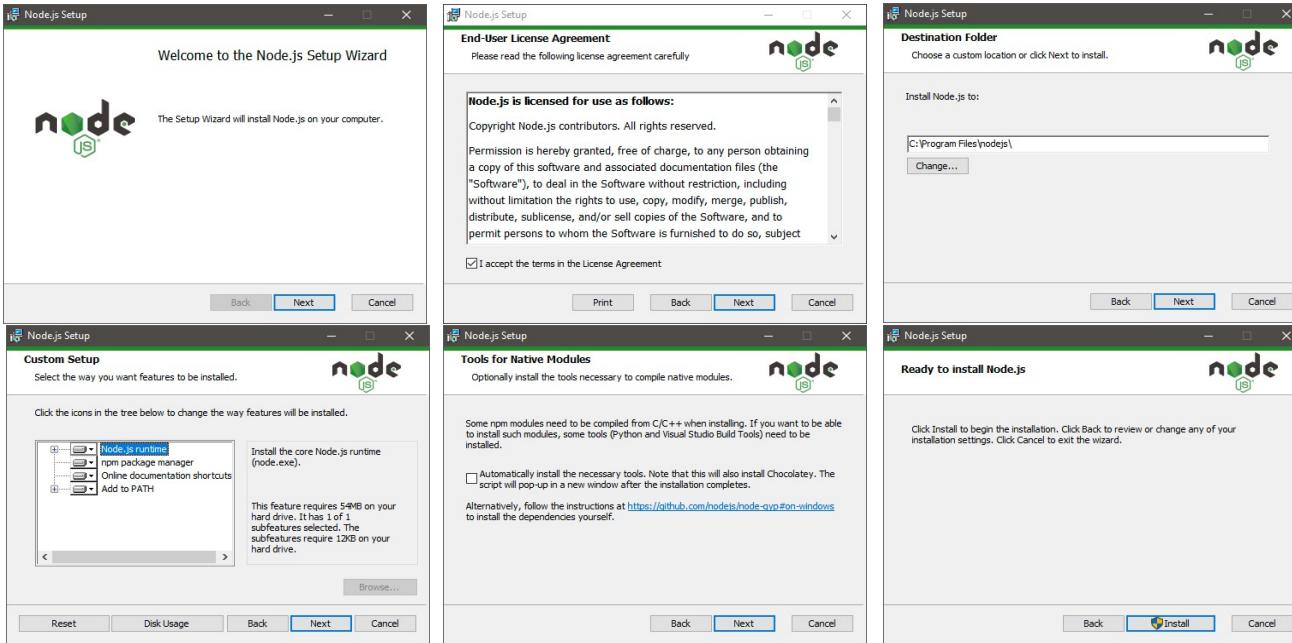
JUPYTERLAB INSTALLATION

- Open your web browser and go to <https://nodejs.org/en/>
- Click LTS (Long Term Support) version download button. Save installation file and then run it.



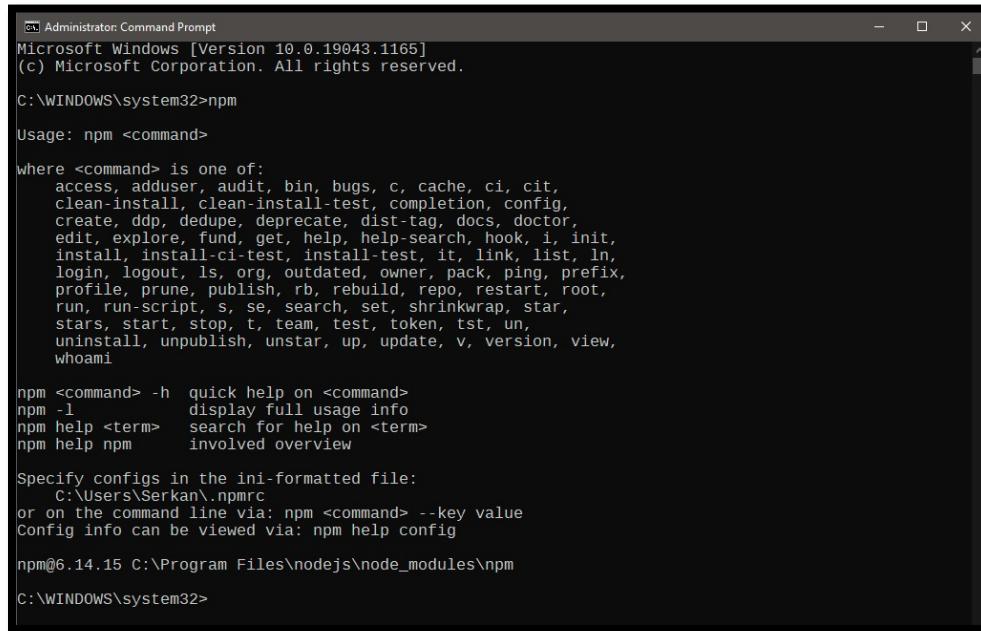
JUPYTERLAB INSTALLATION

- Complete installation by following the wizard accepting the terms and the default options.



JUPYTERLAB INSTALLATION

- Once installation is finished, open a command prompt and test node.js by entering npm command. Help on its usage should be displayed.



The image shows a screenshot of an Administrator Command Prompt window on Microsoft Windows. The title bar reads "Administrator: Command Prompt" and "Microsoft Windows [Version 10.0.19043.1165]". The content of the window is the output of the "npm" command followed by "-h". The output provides detailed information about the npm command-line interface, including a list of available commands like access, adduser, audit, bin, bugs, c, cache, ci, cit, clean-install, clean-install-test, completion, config, create, ddp, dedupe, deprecate, dist-tag, docs, doctor, edit, explore, fund, get, help, help-search, hook, i, init, install, install-ci-test, install-test, it, link, list, ln, login, logout, ls, org, outdated, owner, pack, ping, prefix, profile, prune, publish, rb, rebuild, repo, restart, root, run, run-script, s, se, search, set, shrinkwrap, star, stars, start, stop, t, team, test, token, tst, un, uninstall, unpublish, unstar, up, update, v, version, view, whoami. It also includes options for quick help (-h), displaying full usage info (-l), searching for help on a term, and an involved overview. The prompt at the bottom shows "npm@6.14.15 C:\Program Files\nodejs\node_modules\npm" and "C:\WINDOWS\system32>".

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.19043.1165]
(c) Microsoft Corporation. All rights reserved.

C:\WINDOWS\system32>npm
Usage: npm <command>

where <command> is one of:
  access, adduser, audit, bin, bugs, c, cache, ci, cit,
  clean-install, clean-install-test, completion, config,
  create, ddp, dedupe, deprecate, dist-tag, docs, doctor,
  edit, explore, fund, get, help, help-search, hook, i, init,
  install, install-ci-test, install-test, it, link, list, ln,
  login, logout, ls, org, outdated, owner, pack, ping, prefix,
  profile, prune, publish, rb, rebuild, repo, restart, root,
  run, run-script, s, se, search, set, shrinkwrap, star,
  stars, start, stop, t, team, test, token, tst, un,
  uninstall, unpublish, unstar, up, update, v, version, view,
  whoami

npm <command> -h  quick help on <command>
npm -l          display full usage info
npm help <term>  search for help on <term>
npm help npm    involved overview

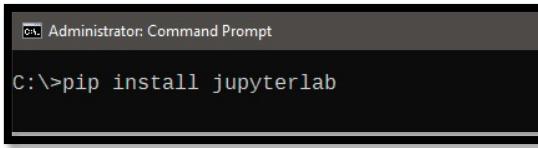
Specify configs in the ini-formatted file:
  C:\Users\Serkan\.npmrc
or on the command line via: npm <command> --key value
Config info can be viewed via: npm help config

npm@6.14.15 C:\Program Files\nodejs\node_modules\npm

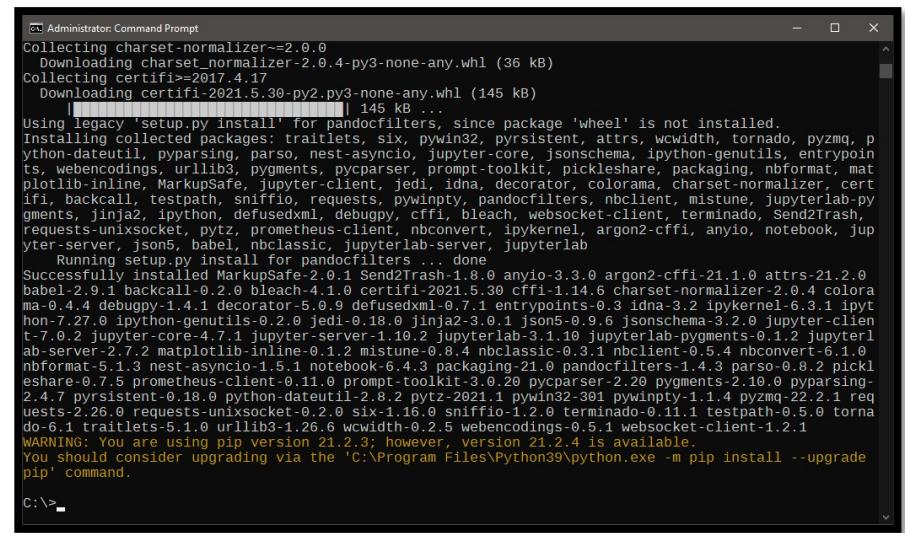
C:\WINDOWS\system32>
```

JUPYTERLAB INSTALLATION

- Now you can install JupyterLab:
 - Open a command prompt and enter pip install jupyterlab command.
 - Python package manager (pip) will install JupyterLab and all other required packages.



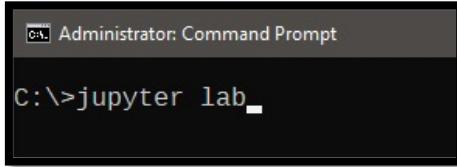
```
C:\>pip install jupyterlab
```



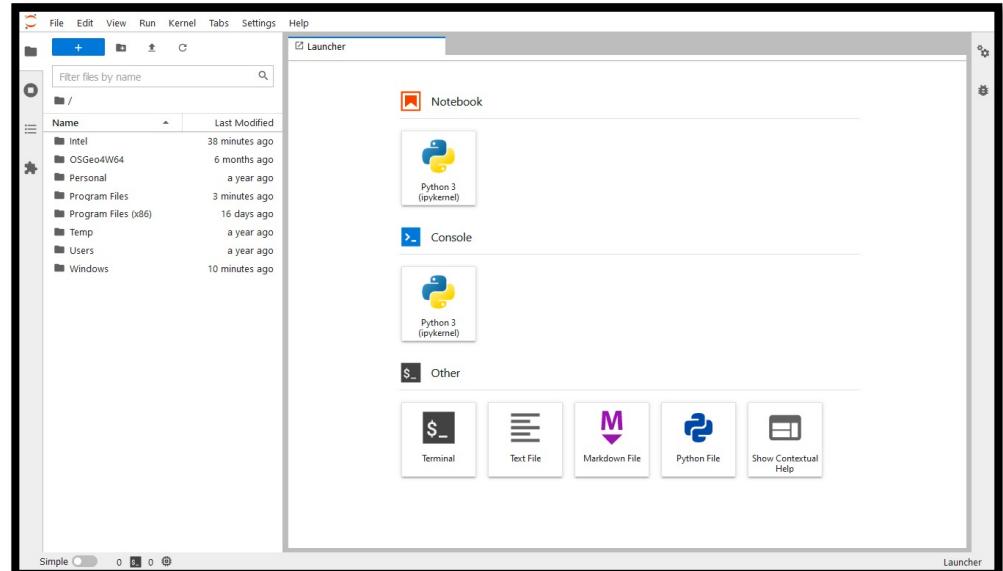
```
Collecting charset-normalizer==2.0.0
  Downloading charset_normalizer-2.0.4-py3-none-any.whl (36 kB)
Collecting certifi>=2017.4.17
  Downloading certifi-2021.5.30-py3-none-any.whl (145 kB)
|██████████| 145 kB ...
Using legacy 'setup.py install' for pandocfilters, since package 'wheel' is not installed.
Installing collected packages: traitlets, six, pywin32, pyrsistent, attrs, wcwidth, tornado, pyzmq, p
ygments, webencodings, urllib3, pygments, pycparser, prompt-toolkit, pickleshare, packaging, nbformat, mat
plotlib-inline, MarkupSafe, jupyter-client, jedi, idna, decorator, colorama, charset-normalizer, cert
ifi, backcall, testpath, sniffio, requests, pywinpty, pandocfilters, nbclient, mistune, jupyterlab-py
gments, jinja2, ipython, defusedxml, debugpy, cffi, bleach, websocket-client, terminado, Send2Trash,
requests-unixsocket, pytz, prometheus-client, nbconvert, ipykernel, argon2-cffi, anyio, notebook, jup
yer-server, json5, babel, nbclassic, jupyterlab-server, jupyterlab
  Running setup.py install for pandocfilters ... done
Successfully installed MarkupSafe-2.0.1 Send2Trash-1.8.0 anyio-3.3.0 argon2-cffi-21.1.0 attrs-21.2.0
babel-2.9.1 backcall-0.2.0 bleach-4.1.0 certifi-2021.5.30 cffi-1.14.6 charset-normalizer-2.0.4 colora
ma-0.4.4 debugpy-1.4.1 decorator-5.0.9 defusedxml-0.7.1 entrypoints-0.3 idna-3.2 ipykernel-6.3.1 ipty
hon-7.27.0 ipython-genutils-0.2.0 jedi-0.18.0 jinja2-3.0.1 json5-0.9.6 jsonschema-3.2.0 jupyter-clien
t-7.0.2 jupyter-core-4.7.1 jupyter-server-1.10.2 jupyterlab-3.1.10 jupyterlab-pygments-0.1.2 jupyterl
ab-server-2.7.2 matplotlib-inline-0.1.2 mistune-0.8.4 nbclassic-0.3.1 nbclient-0.5.4 nbconvert-6.1.0
nbformat-5.1.3 nest-asyncio-1.5.1 notebook-6.4.3 packaging-21.0 pandocfilters-1.4.3 parso-0.8.2 pickl
eshare-0.7.6 prometheus-client-0.11.0 prompt-toolkit-3.0.20 pycparser-2.20 pygments-2.10.0 pyParsing
-2.4.7 pyrsistent-0.18.0 python-dateutil-2.8.2 pytz-2021.1 pywin32-301 pywinpty-1.1.4 pyzmq-22.2.1 req
uests-2.26.0 requests-unixsocket-0.2.0 six-1.16.0 sniffio-1.2.0 terminado-0.11.1 testpath-0.10.5 torna
do-6.1 traitlets-5.1.0 urllib3-1.26.6 wcwidth-0.2.5 webencodings-0.5.1 websocket-client-1.2.1
WARNING: You are using pip version 21.2.3; however, version 21.2.4 is available.
You should consider upgrading via the 'C:\Program Files\Python39\python.exe -m pip install --upgrade
pip' command.
```

JUPYTERLAB INSTALLATION

- c) Once installation is finished, enter jupyter lab command to start JupyterLab.
- d) By default, JupyterLab automatically opens a web browser tab to display the user interface.

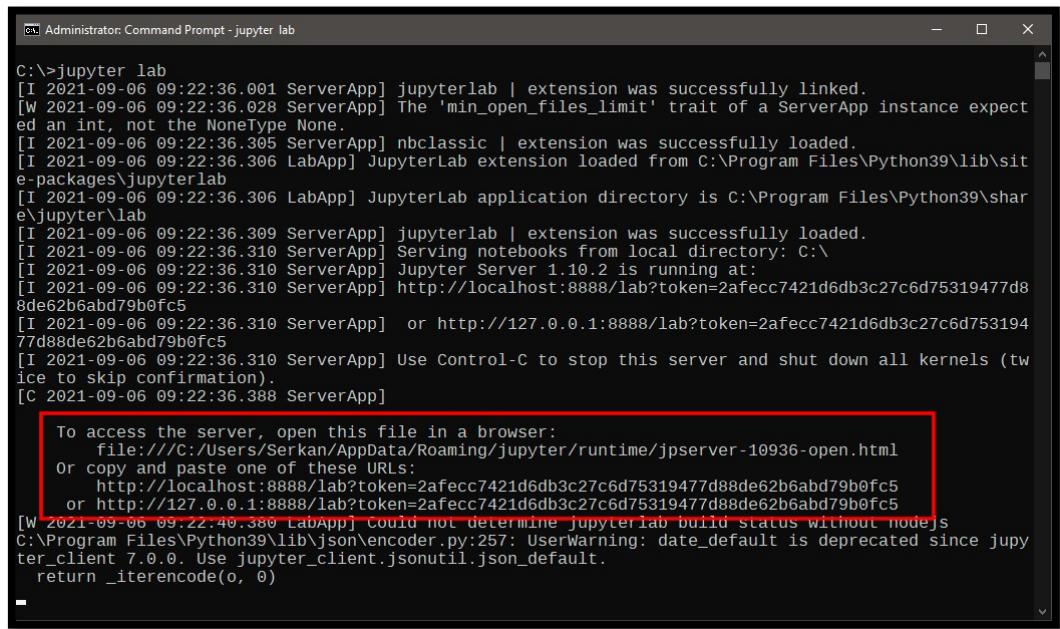


```
Administrator: Command Prompt  
C:\>jupyter lab
```



JUPYTERLAB INSTALLATION

- JupyterLab will also display some information on the terminal, including the URL address to access the user interface. You can copy-paste the URL address to your web browser to access the user interface if it is not displayed automatically.



```
C:\>jupyter lab
[I 2021-09-06 09:22:36.001 ServerApp] jupyterlab | extension was successfully linked.
[W 2021-09-06 09:22:36.028 ServerApp] The 'min_open_files_limit' trait of a ServerApp instance expect
ed an int, not the NoneType None.
[I 2021-09-06 09:22:36.305 ServerApp] nbclassic | extension was successfully loaded.
[I 2021-09-06 09:22:36.306 LabApp] JupyterLab extension loaded from C:\Program Files\Python39\lib\site
-packages\jupyterlab
[I 2021-09-06 09:22:36.306 LabApp] JupyterLab application directory is C:\Program Files\Python39\shar
e\jupyter\lab
[I 2021-09-06 09:22:36.309 ServerApp] jupyterlab | extension was successfully loaded.
[I 2021-09-06 09:22:36.310 ServerApp] Serving notebooks from local directory: C:\
[I 2021-09-06 09:22:36.310 ServerApp] Jupyter Server 1.10.2 is running at:
[I 2021-09-06 09:22:36.310 ServerApp] http://localhost:8888/lab?token=2afecc7421d6db3c27c6d75319477d8
8de62b6abd79b0fc5
[I 2021-09-06 09:22:36.310 ServerApp] or http://127.0.0.1:8888/lab?token=2afecc7421d6db3c27c6d753194
77d88de62b6abd79b0fc5
[I 2021-09-06 09:22:36.310 ServerApp] Use Control-C to stop this server and shut down all kernels (tw
ice to skip confirmation).
[C 2021-09-06 09:22:36.388 ServerApp]

To access the server, open this file in a browser:
  file:///C:/Users/Serkan/AppData/Roaming/jupyter/runtime/jpserver-10936-open.html
Or copy and paste one of these URLs:
  http://localhost:8888/lab?token=2afecc7421d6db3c27c6d75319477d88de62b6abd79b0fc5
  or http://127.0.0.1:8888/lab?token=2afecc7421d6db3c27c6d75319477d88de62b6abd79b0fc5
[W 2021-09-06 09:22:40.380 LabApp] Could not determine jupyterlab build status without nodejs
C:\Program Files\Python39\lib\json\encoder.py:257: UserWarning: date_default is deprecated since jupy
ter_client 7.0.0. Use jupyter_client.jsonutil.json_default.
    return _iterencode(o, 0)
```

JUPYTERLAB INSTALLATION

https://jupyterlab.readthedocs.io/en/stable/getting_started/installation.html

The screenshot shows the 'Installation' section of the JupyterLab documentation. The left sidebar has a dark theme with orange highlights for the 'Installation' section. The main content area has a light background with sections for 'conda', 'mamba', 'pip', 'pipenv', and 'Docker'. Each section contains a command-line example and a note about macOS compatibility.

Installation

JupyterLab can be installed using `conda`, `mamba`, `pip`, `pipenv` or `docker`.

conda

If you use `conda`, you can install it with:

```
conda install -c conda-forge jupyterlab
```

mamba

If you use `mamba`, you can install it with:

```
mamba install -c conda-forge jupyterlab
```

pip

If you use `pip`, you can install it with:

```
pip install jupyterlab
```

If you are using a macOS version that comes with Python 2, run `pip3` instead of `pip`.

If installing using `pip install --user`, you must add the user-level `bin` directory to your `PATH` environment variable in order to launch `jupyter lab`. If you are using a Unix derivative (FreeBSD, GNU/Linux, macOS), you can do this by running `export PATH="$HOME/.local/bin:$PATH"`.

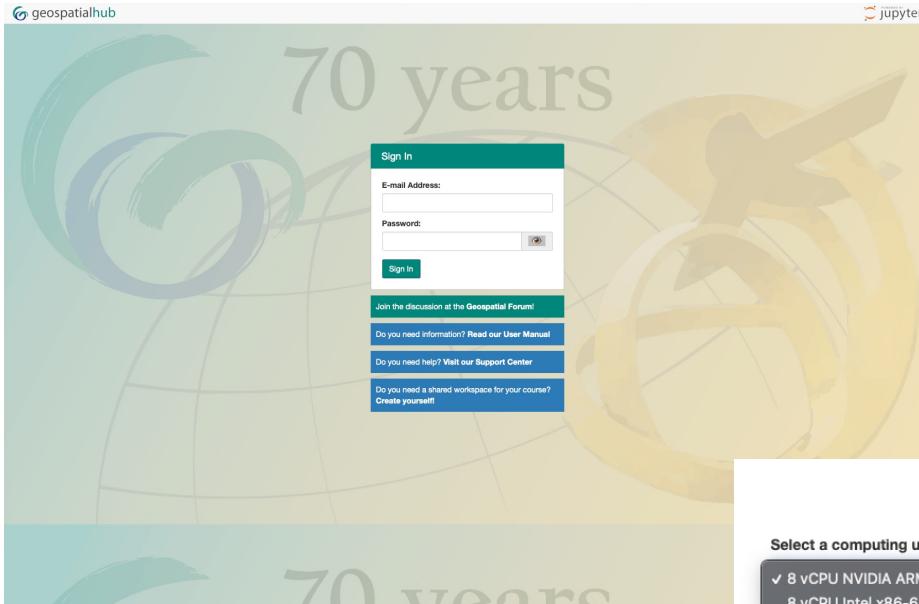
pipenv

If you use `pipenv`, you can install it as:

```
pipenv install jupyterlab  
pipenv shell
```

JUPYTERLAB ON CRIB

You can access to the platform at <https://crib.utwente.nl/geospatialhub> by using your personal University of Twente account (i.e., e-mail address and password).

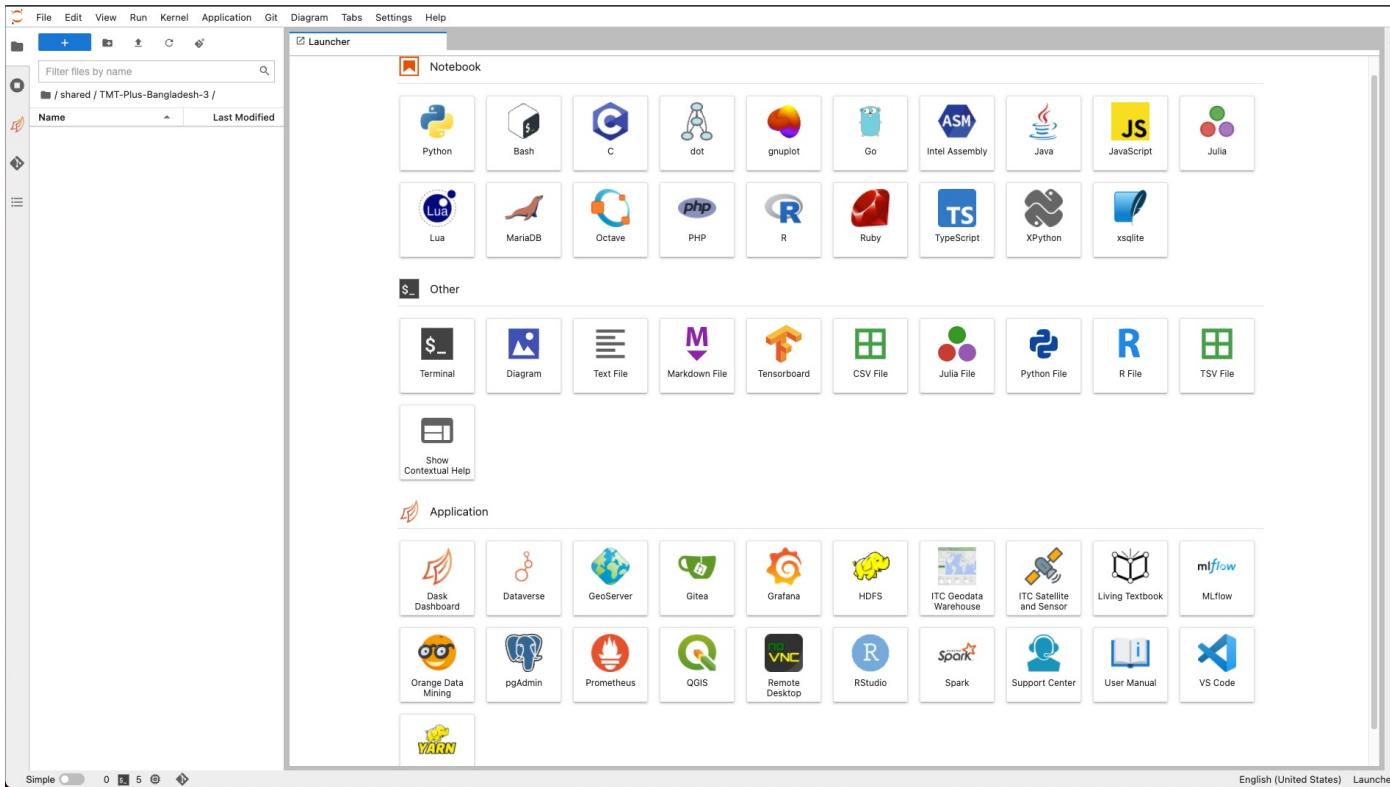


Server Options

Select a computing unit:

- 8 vCPU NVIDIA ARMv8.2, 32 GB RAM, NVIDIA GPU
- 8 vCPU Intel x86-64, 32 GB RAM
- 12 vCPU Intel x86-64, 192 GB RAM
- 32 vCPU Intel x86-64, 768 GB RAM, NVIDIA RTX A4000 GPU
- 72 vCPU Intel x86-64, 768 GB RAM, NVIDIA RTX A4000 GPU

JUPYTERLAB ON CRIB



QUESTIONS?

