

JuPy Python Tutorial: Installation Instructions

Version: March 24, 2023

Welcome to JuPy, the interactive Python Tutorial!

The JuPy tutorial requires Anaconda and some additional packages. The installation is described in this document.

The installation as described in this document creates a separate environment named "jupyter-course" with all required packages. Of course, you may also perform the installation in Anaconda's "base" environment. In this case you will be informed that some packages are already installed.

This document assumes Windows as operating system. The installation for other operating systems follows similar steps.

Note: Please make sure that the JuPy Python course is extracted inside your home directory, in Windows this is `Users\Username`. The course will be extracted in a folder named `JuPyTutorialV2En`.

Important Note

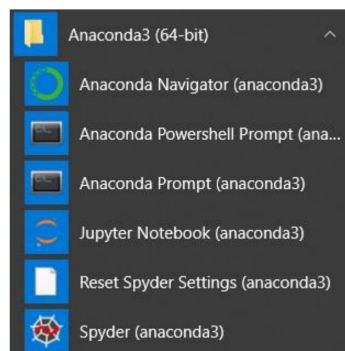
To use the JuPy tutorial, JupyterLab must **always** be started inside the same environment (e.g. "jupytercourse"), in which you installed the packages as described in this document.

Step 1: Installation of Anaconda

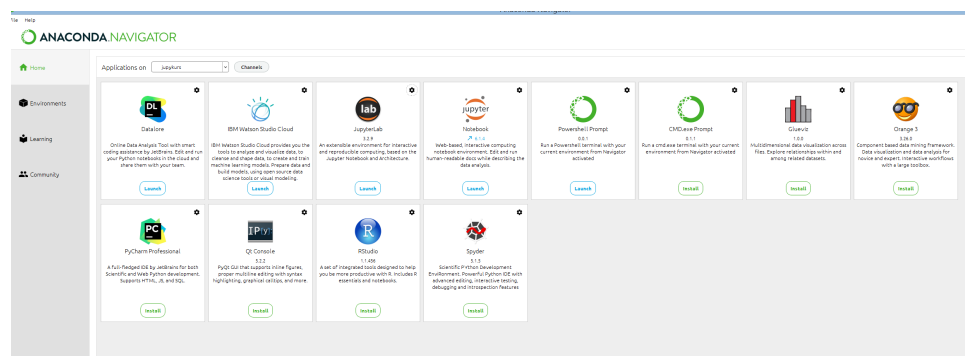
- (a) Visit the site <https://www.anaconda.com/products/individual>
- (b) At the bottom of the page you find the download link
- (c) Choose the installer recommended for your operating system and install Anaconda.



- (d) In the Windows start menu you should now find the Anaconda folder:
- (e) Select Anaconda Navigator and start it.

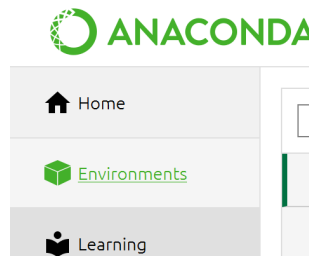


- (f) You will see the navigator screen with the available Apps, e.g. JupyterLab.

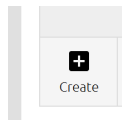


Step 2: Installation of an Environment

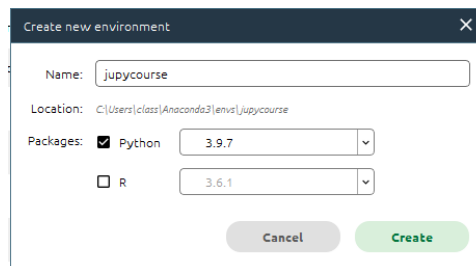
- (a) Start the Anaconda Navigator.
- (b) Go to Environments:



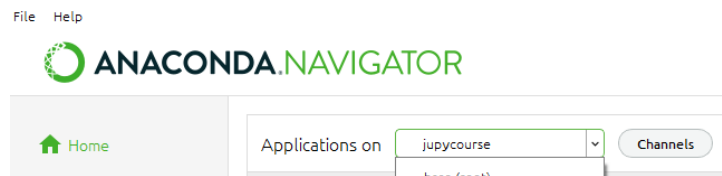
- (c) Click on the "Create" button at the bottom of the page:



- (d) Name the new environment "jupycourse"¹ and select 3.9.7 as Python version²:



- (e) Go to "Home" and select the "jupycourse" environment:



¹Hint: In order to avoid problems make sure that the environment name does not contain uppercase letters, special characters or blanks.

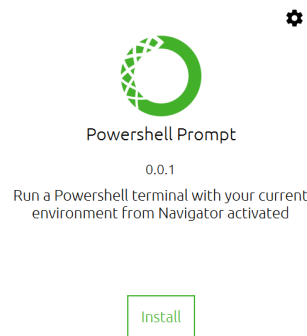
²You may equally select a higher Python 3.9.x version.

Step 3: Configuration of the Environment

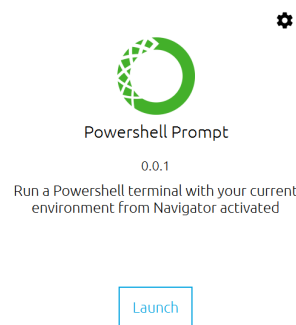
For Windows Systems

- (a) In order to install packages and configure the environment we need to execute some commands. We will use the Powershell that needs to be installed first.

Go to the Powershell Prompt tile and click on "Install":



- (b) Launch the Powershell Prompt:



- (c) Please enter the following commands in the specified order in the prompt. The commands will install the required packages.

You might be asked to confirm the installation with "y".³

```
conda install -c conda-forge nodejs=17.4.0
conda install -c conda-forge numpy=1.21.5
conda install -c conda-forge matplotlib=3.5.1
conda install -c conda-forge scipy=1.7.3
conda install -c conda-forge ipython=7.31.1
conda install -c conda-forge jupyterlab=3.3.0
conda install -c conda-forge ipympl=0.8.8
```

- (d) Now we must install JupyterLab:

```
jupyter lab build
```

- (e) Now the Widgets Extension must be activated with the following command:

```
jupyter nbextension enable --py widgetsnbextension
```

- (f) Close the Powershell Prompt.

- (g) Quit Anaconda.

- (h) Please make sure that Firefox is installed and set as your default browser.

³Please specify the version numbers exactly as stated.

On Mac / Linux

Hint: Please note that these instructions were not tested. Please send feedback to christina.class@eah-jena.de.

- (a) Please close the Anaconda Navigator.
- (b) In the Anaconda Installation on Macintosh and on Linux Operating Systems, the Navigator does not have a "Powershell Prompt" application. The installation commands must therefore be entered in a terminal.
 - On Linux systems: please open a shell.
 - On Mac systems: please open the Terminal. You find it via Applications → Utilities → Terminal
- (c) You need to use **conda** commands. Please type **conda info** in the terminal. Most probably the command will not be found, will not be in the path. Then you need to change to the right folder. On Windows it is named **condabin**, on Mac **conda-bin** (**opt/anaconda3/conda-bin**⁴ Please navigate to the folder using **cd**.
- (d) We need now to change to the "jupytercourse" environment. Please enter the following command:

```
conda activate jupytercourse
```

- (e) Now we need to install the packages.⁵ Please enter the following commands:

```
conda install conda-forge::nodejs==17.4.0
conda install conda-forge::numpy==1.21.5
conda install conda-forge::matplotlib==3.5.1
conda install conda-forge::scipy==1.7.3
conda install conda-forge::ipython==7.31.1
conda install conda-forge::jupyterlab==3.3.0
conda install conda-forge::ipympl==0.8.8
```

- (f) Now we must install JupyterLab:

```
jupyter lab build
```

- (g) Now the Widgets Extension must be activated with the following command:

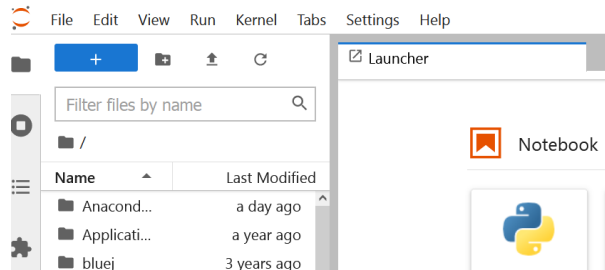
```
jupyter nbextension enable --py widgetsnbextension
```

⁴If I remember correctly.

⁵If you are asked to update conda using **conda update -n base -c defaults conda** please do so.

Step 4: Starting JupyterLab and the JuPy Tutorial

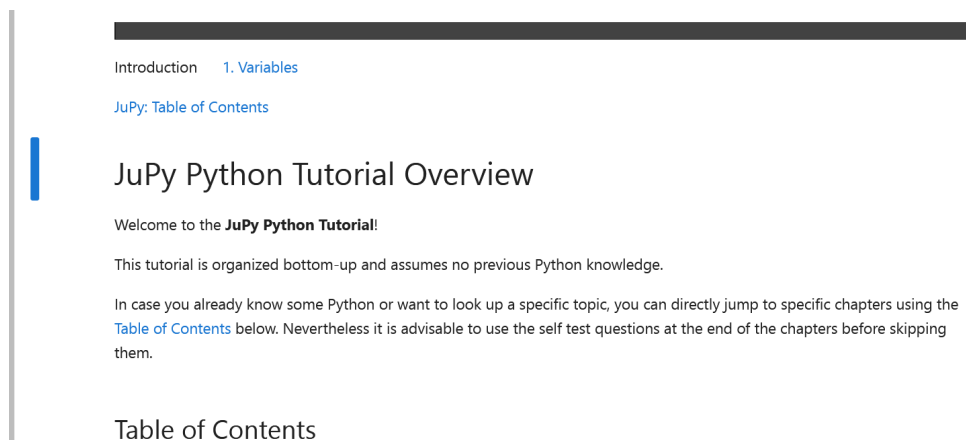
- (a) Start Anaconda and choose the "jupycourse" environment.
- (b) Go to the "JupyterLab" tile and launch it.
- (c) JupyterLab will open in your standard browser.



- (d) Go to the file browser, open the directory "JuPyTutorialV2En" and start the tutorial by double clicking on the file "00_Introduction.ipynb".



- (e) You can now use the JuPy tutorial:



Hints:

- Problems with the interactive exercises can often be resolved by restarting the JupyterLab extensions. Please start the Powershell Prompt and enter the following commands:

```
jupyter lab clean
jupyter labextension install @jupyter-widgets/jupyterlab-manager
jupyter lab build
jupyter nbextension enable --py widgetsnbextension
```

- In case of remaining problems with the interactive exercises these may be resolved by installing a specific version of the widgets. Please start the Powershell Prompt and enter the following commands:

```
jupyter lab clean
conda install -c conda-forge ipywidgets=7.7
conda install -c conda-forge jupyterlab.widgets=1.1.1
jupyter lab build
jupyter nbextension enable --py widgetsnbextension
```

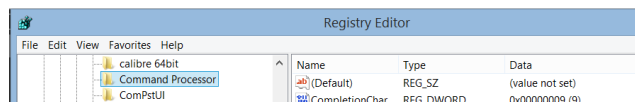
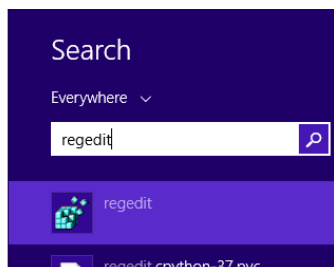
- If you get the error with *Exit code: 1* when launching Anaconda Apps, please do the following:

Enter "Registry Editor" or "regedit" in the Windows search bar and open the application.

Go to the path

Computer\HKEY_CURRENT_USER\Software\Microsoft\Command Processor

and delete – if present – the file "Autorun".



We hope you will enjoy the Jupy Tutorial!



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