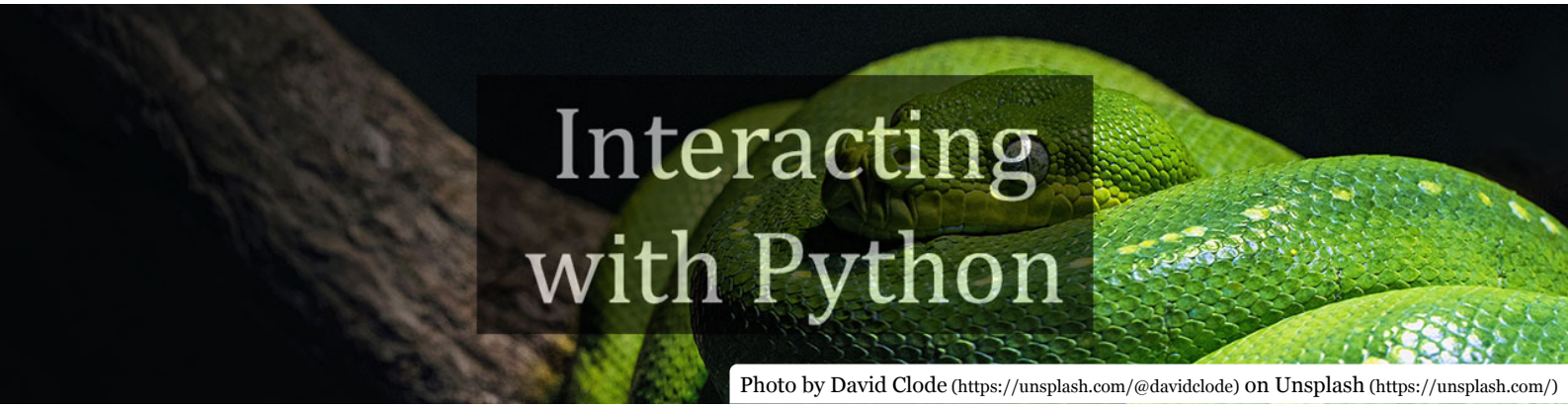


Photo by David Clode (https://unsplash.com/@davidclode) on Unsplash (https://unsplash.com/)

Interacting with Python

2 minute read

In this lesson we will learn how to install Python and configure it to be able to interact with Julia.

There are two options: the first is to let Julia install everything by itself, the second is to configure te installation manually. If you don't plan to use Python for anything particular apart from `PyPlot` or a few other packages, you can leave the installation of Python to Julia. On the contrary, if you already use Python and Conda environments, it is better to make a custom environment for Julia.

Automatic installation

To let Julia automatically install Python and all the dependencies, type the following code:

```
using Pkg
Pkg.add("PyCall")
using PyCall
```

`PyCall` will download the miniconda installer (https://docs.conda.io/en/latest/miniconda.html) and create a separated conda environment just for Julia all by itself.

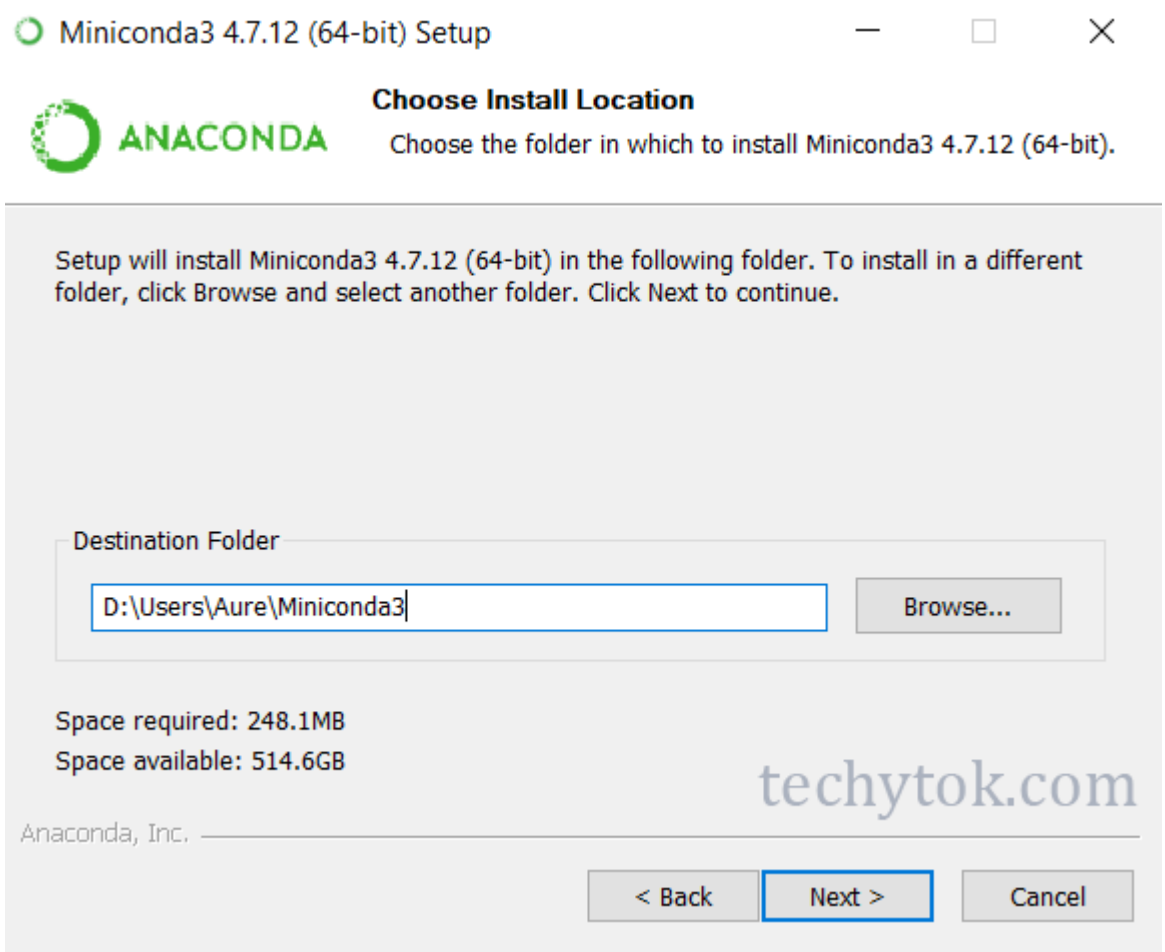
Manual installation

If you already have Anaconda installed, please create a new wnvironment with **Python 3.6**. `PyCall` should also work with Python 3.7, but in my experience it had lead to some errors.

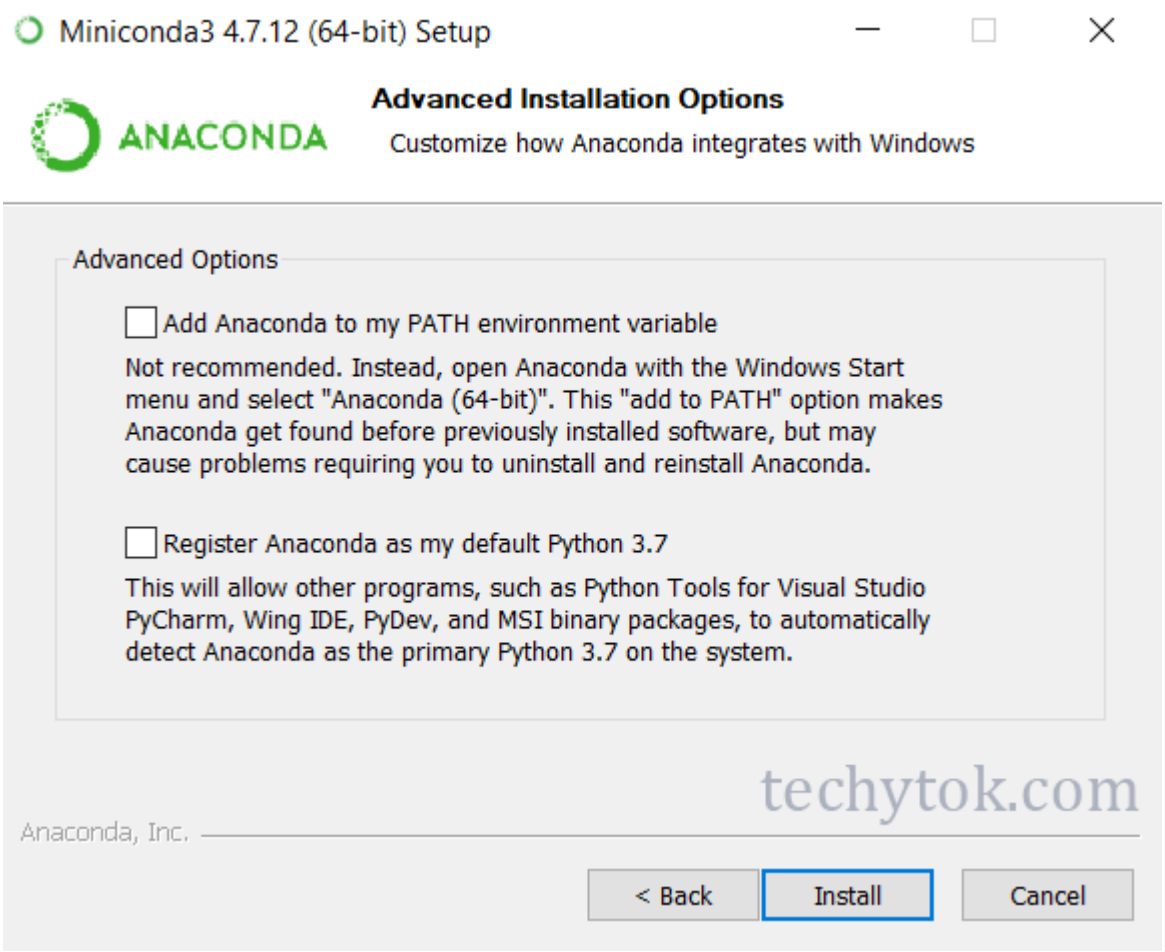
If you don't already have Anaconda installed, you can either install Anaconda or Miniconda. I suggest you to install the latest version of Miniconda (https://docs.conda.io/en/latest/miniconda.html) (as it is a lightweight conda environment with everything you need) and then downgrade python to version 3.6.

Miniconda installation

Depending on your operating system, the installation steps of miniconda may be slightly different. On Windows 10, download the Miniconda installer (https://docs.conda.io/en/latest/miniconda.html) and open it. Follow the insutrction on screen:



Please take note of the location where you have installed miniconda3 as we'll need it in the next steps.



Untick the two options as shown in the figure above.

Once you have installed miniconda, we need to open a conda command prompt.

- In Windows, there should be a new shortcut in the start menu called `Anaconda Prompt`, please open it.
- In Linux, the `.bashrc` profile should have been modified to start a conda-enable shell automatically.

In the command prompt type the following code to downgrade python to version 3.6:

```
conda install python=3.6 -y
```

We are now ready to setup `PyCall`

PyCall installation

To install `PyCall` type the following commands in the REPL:

```
using Pkg

ENV["PYTHON"] = ""
ENV["CONDA_JL_HOME"] = "/path/to/miniconda3"

Pkg.add("Conda")
using Conda

Pkg.add("PyCall")
Pkg.build("PyCall")
using PyCall
```

In order to check whether the installation was succesful, import a Python library:

```
math = pyimport("math")

>>>math.sin(3)
0.1411200080598672
```

Now you are ready to import any desired package through the function `pyimport`.

PyPlot

If you want, you are now able to install `PyPlot`: a powerful back-end for `Plots.jl` which uses the Python matplotlib package.

> Before you install `PyPlot`, make sure that you have installed and configured Python correctly to interact with Julia. In particular you must be able to import Python libraries with `pyimport`, if you have followed the guide up to now and you were able to import `math` you should be fine.

To install `PyPlot` and check whether everything is working correctly, use the following code:

```
using Pkg
Pkg.add("PyPlot")

using Plots
pyplot()

x=1:0.1:2*π
y=sin.(x)
plot(x, y, label="sin(x)")
```

Conclusions

In this lesson we have learn't how to install Python and how to configure Julia to interact with Python. Furthermore, we have seen how to install `PyPlot` and use the `pyplot()` back-end with `Plots`.

If you liked this lesson and you would like to receive further updates on what is being published on this website, I encourage you to subscribe to the **newsletter** (https://techytok.com/newsletter/)! If you have any **question** or **suggestion**, please post them in the **discussion below**!

Thank you for reading this lesson and see you soon on TechyTok!

Tags: Julia

Categories: Lessons Tutorial

Updated: December 26, 2019

LEAVE A COMMENT

ALSO ON **TECHYTOK**

Variable Scope

7 months ago • 4 comments

From zero to Julia Lesson 6. Variable scope

Control Flow

8 months ago • 5 comments

From zero to Julia Lesson 4. Control Flow

Parallel computin

7 months ago • 4 comm

From zero to Julia Le 15. Parallel computin

/