session_0

October 10, 2017

1 Informatik 1 - Biomedical Engineering

1.1 Tutor Session 0 - Setup / anaconda / packages / jupyter

1.2 1) Installing python on your system

Plain Python: https://www.python.org/downloads/

For this course: https://www.anaconda.com/download/ (Select the default Python 3.6 version 64 bit version)

1.2.1 1.1) What is Anaconda?

Anaconda is a complete suite for Python development in the scientific domain. And it takes care of the setup for you...

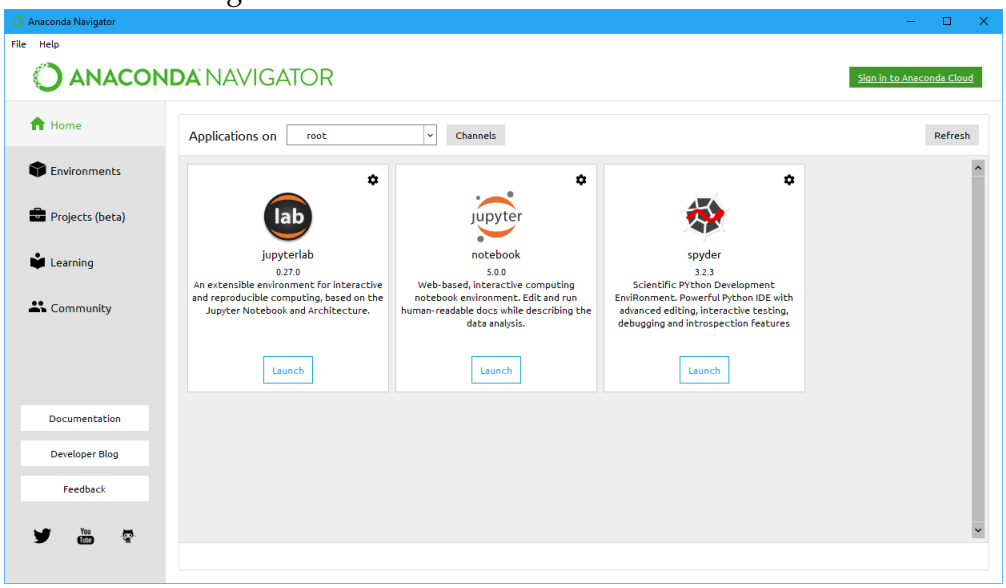
It contains:

The interpreter

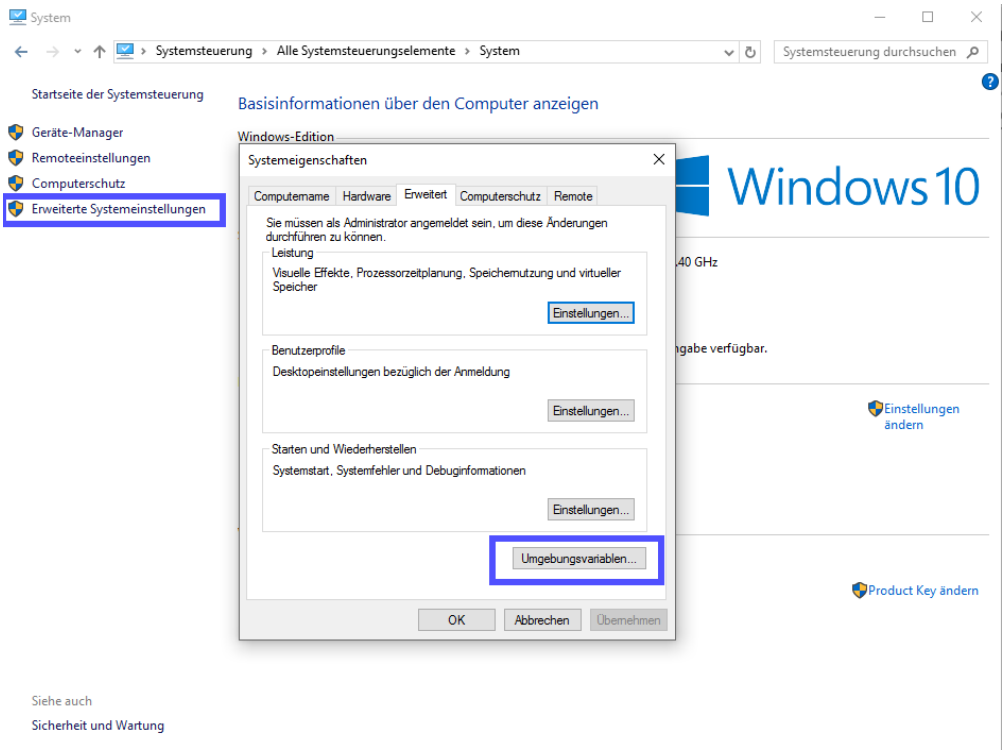
A large number of useful packages

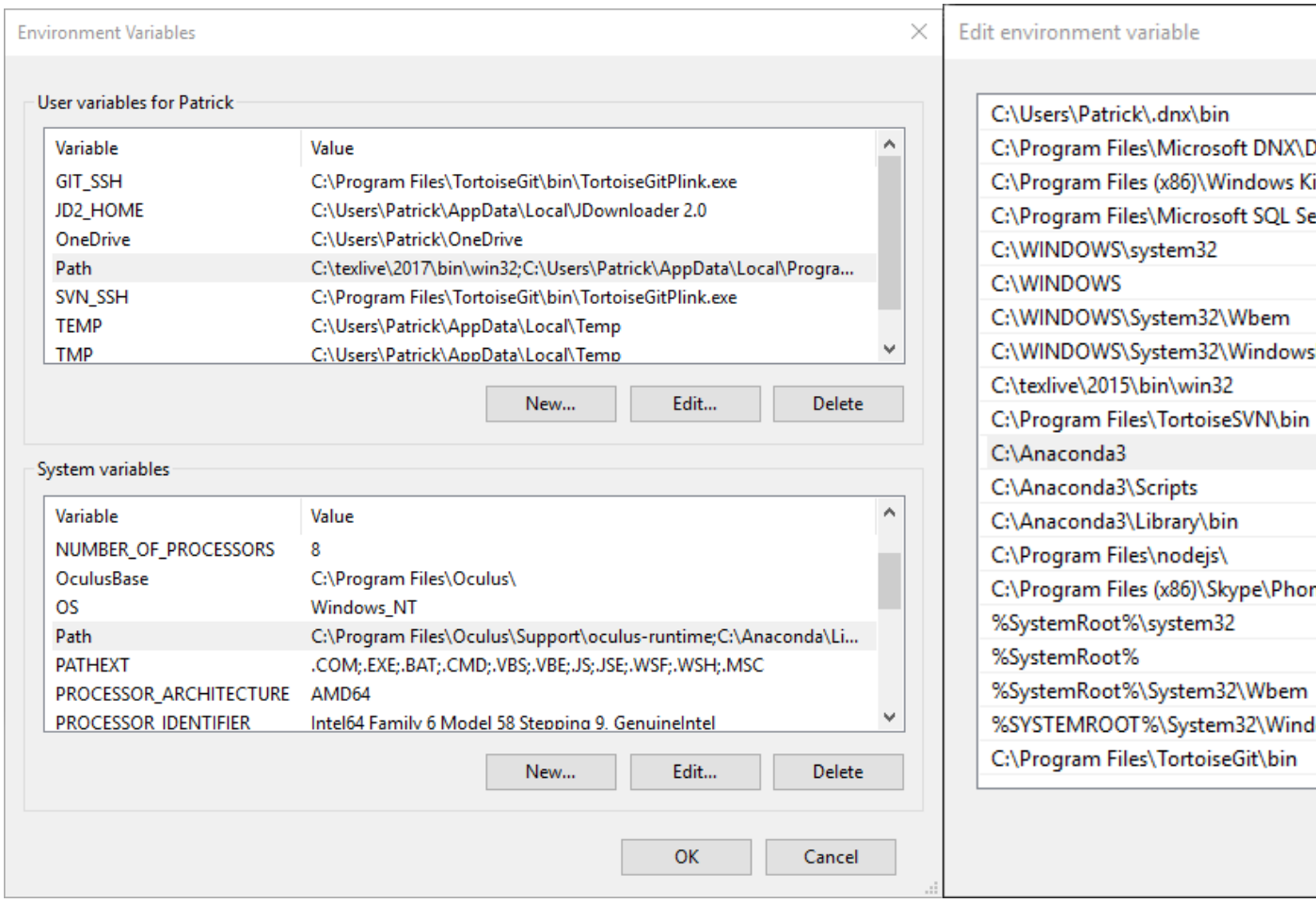
A command line interface. (Anaconda prompt/anaconda command prompt)

Anaconda Navigator (launching can take a bit)
A package manager
The Spyder IDE
jupyter notebooks
Extensive learning ressources



1.2.2 1.2) Environment Variables (if not set automatically)





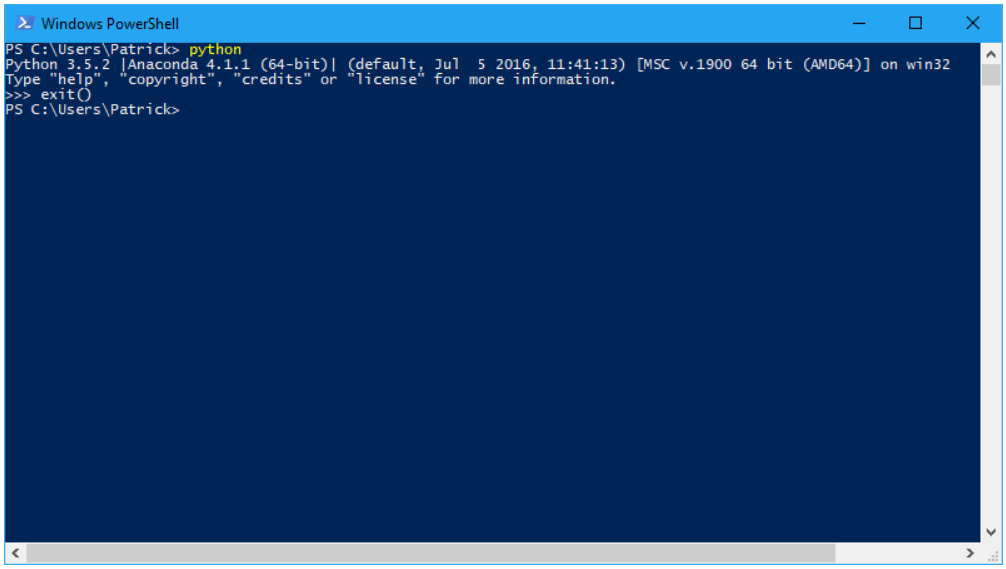
1.3 2) See if it works

Open your console of choice

Type python

See what happens. Your precise text might be different (i.e.:version number...)

Exit by typing exit() and pressing enter



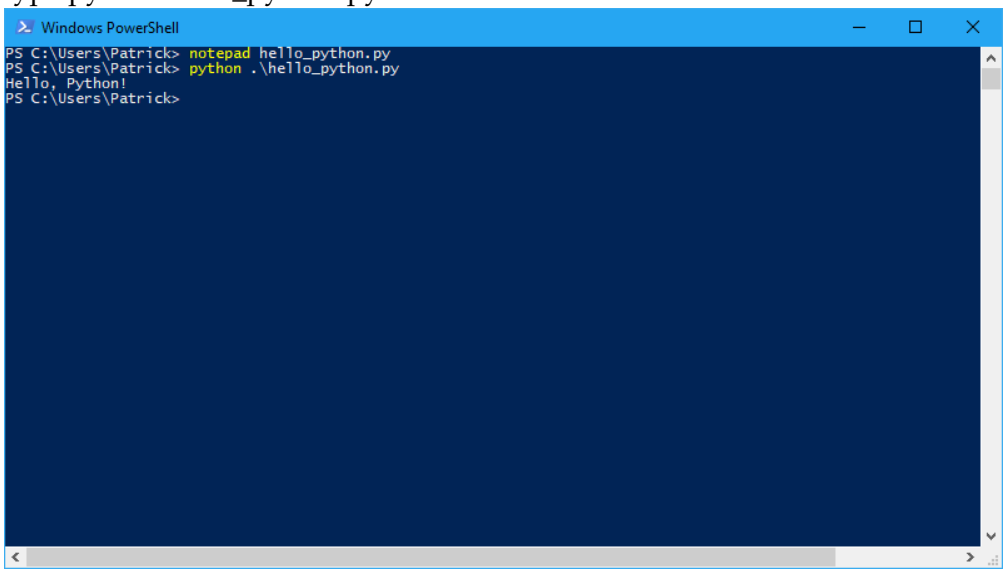
Create a textfile and name it hello_python.py

Open the file and write the following: print("Hello, Python!")

Save the file

Use a console (cmd or powershell for windows) and navigate to the folder of the previously created file

type python hello_python.py



1.4 3) Jupyter

Launch via Anaconda Navigator

Default address: http://127.0.0.1:8888/tree (localhost on unix systems)

Upload Tutorial sheets and play around

1.4.1 3.1) Basic Usage

Code is written in cells

Cells can be executed individually and out of sequence. (You can run cell 1, cell 2 and then cell 1 again)

System state is saved

Hotkey to run a cell: Shift + Enter

"File -> Download as -> Python (.py) " to get the full source

Open in editor and clean up the comments if you use this for submitting

It can do a lot more which is not needed for now...

1.4.2 3.2) Example

```
In [ ]: print("Hello, World!")
```

1.4.3 3.3) Working with cells

Run the 1st cell (a = 0) below

Run the 3rd cell (print(a))

Run the 2nd cell (a = a + 1). That increases the value by 1. Repead as often as wanted.

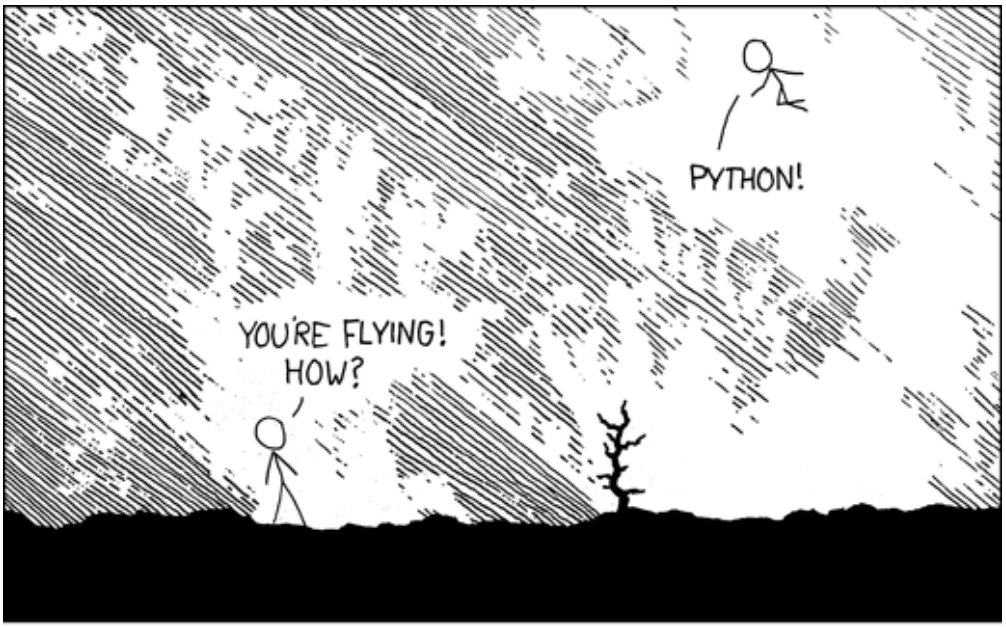
Run the 3rd cell (print(a)) again

```
In [ ]: a = 0
```

```
In [ ]: a = a+1
```

```
In [ ]: print(a)
```

1.5 4) You are good to go!



["Python" by "Randall Munroe (XKCD)]

In [ ]: