Python from Zero

The Absolute Beginner's Course

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Roadmap

- Short lecture parts, followed by hands-on excercises

- Occasional Moodle Tests

Learning any (programming) language is learning by doing!

To practice, you will use Jupyter Notebooks

- Does everyone have access?

Write and execute Python code at https://apphub.wolke.uni-greifswald.de/

Find course material at https://moodle.uni-greifswald.de/course/view.php?id=9565

Find the notebooks at https://github.com/DataCompetency/PythonFromZero

About You

What is your prior knowledge about programming?

- (A) Complete beginner
- (B) A little experience in Perl/R/JavaScript/Java/...
- (C) Other

Course Goals

Trying to keep it simple

- You won't be a high-end professional after this course, but be able to write your own uesful code

We will cover the fundamentals and most important concepts

- Also (briefly) look at what is going on "under the hood"
- Understanding that makes writing great software easier

Python Intro

Python

- Easy to learn programming language, yet very versatile

- Very popular in various scientific disciplines, e.g. for data analysis and visualization

- One of the most demanded programming languages outside academia (e.g. machine learning, business data analytics)

*Python has become one of the most widely used languages worldwide over the years, currently ranking **#1** on the TIOBE Index*

Python

Designed by Guido van Rossum in the late 1980s

- First implementation started Decemeber 1989
- Version 2.0 released in 2000, now (finally) discontinued
- Version 3.0 released in 2008, major revision
- Actively supported versions: `3.6.x` and later
  - Watch out for old code snippets online and old default versions!

source: Wikipedia

Additional Resources

- https://docs.python.org/3/
  Detailed description of the entire language and its libraries, great reference, although maybe a bit overwhelming in the beginning

- https://www.w3schools.com/python/
  One of many online tutorials + *concise* reference

Additional Resources

- stackoverflow.com
  If you don't know how to do something or can't resolve an error message, it is very likely that someone already had the same problem and found help here

Screenshot: Twitter (it's a hoax.)

What We Will Learn

Day 1 + 2

- Fundamentals
- Data types
- Functions
- Control flow
- Loops
- Scope

What We Will Learn

Day 2 + 3:

- Python scripts and the Command Line
- Modules and Namespaces
- Important Libraries and Data Visualization part