Introduction to Python

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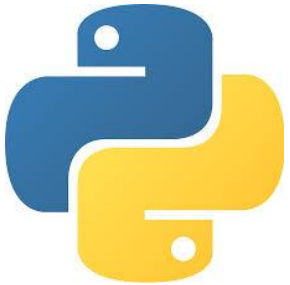


Python

Python is an Interpreted and Object-Oriented Programming Language.

WHY Python?

- Simple syntax
- Very flexible
- Highly extensible
- Cross-platform
- Open-source with a huge community

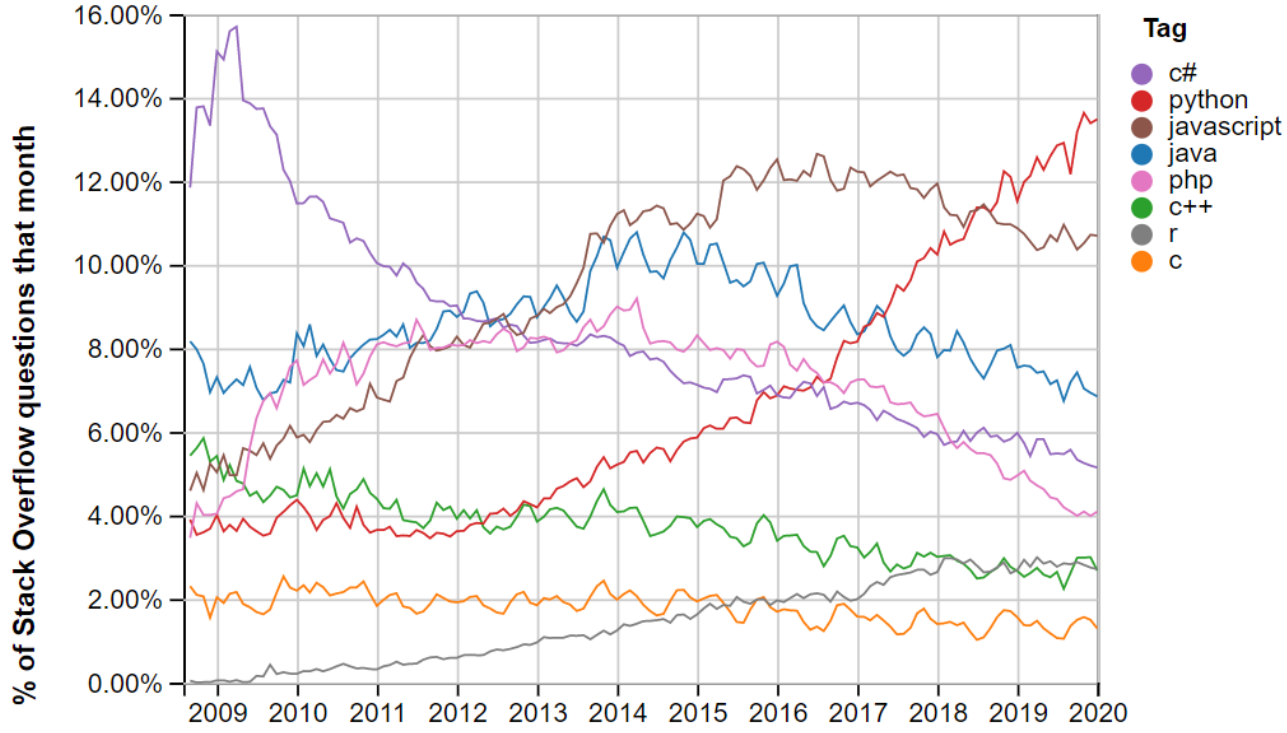
Google says: *Python where we can, C++ where we must*

A bit of History

- It is not so recent, since it was conceived in the late 1980s and implemented in 90s by Guido van Rossum.
- Name is a tribute to Monty Python (a British surreal comedy group)
  in fact, as metasyntactic variables spam and eggs preferred to the traditional foo and bar
- **Python 2.0** released on Oct 2000, not supported since 01/2020
- **Python 3.0** released on Dec 2008
- **Last release** is **3.8.2** on Feb 2020 (https://www.python.org/downloads/)

Popularity

- According to StackOverflow's survey and trends Python among all programming languages is the:
  - **1st** most questioned
  - **4th** most used
    behind JavaScript, HTML/CSS, and SQL
  - **2nd** most loved
    behind Rust
  - **1st** most wanted
    developers who do not yet use it say they want to learn it



Applications for Python

- Web and Internet Development
- Scientific and Numeric
- Education
- Desktop GUIs
- Software Development
- Business Applications

Basically anything, like English for spoken languages

Scipy

Scipy.org = Python for math/science/engineering

- **Numpy**: Numerical Python package (inspired by Matlab)

  N-dimensional array capabilities and some linear algebra, Fourier analysis, random number capabilities, etc.

- **Scipy**: Scientific Python

  For Matlab users, it's very much like many of the core toolboxes.

- **Matplotlib:** most popular data visualization package for Python

  Inspired by Matlab plots, but then it has evolved into something more.

- **Pandas:** Data Science Python

  high-performance, easy-to-use data structures and data analysis tools

IPython & Jupyter Notebook

- Jupyter Notebook is a web-based interactive computational environment, that supports different languages (Python, R, Julia, C++)
- IPython (Interactive Python) is the kernel that allows Python to be run on a Jupyter Notebook.

Let’s start

We will get start with a short tutorial on Python.

- Clone/download this repository: https://github.com/marchioa/data-security
- There, in the folder *1.intro-to-python* the file enviroment_setup.md lists all the instructions to set up the environment we will work on.
- Once the environment is ready and Jupyter has started you can start opening the notebooks (.ipynb files) composing the tutorial. With great imagination, 1.LETS_START.ipynb is the first one.