



MachineLearnAthon - Microlecture

Installing Python

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MachineLearnAthon
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Learning outcomes of today

After successfully completing this micro-lecture, you are able to....

- Understand the benefits of Python
- Install Python
- Install a development environment





Agenda for today

- Reasons for using Python
- Installing Python
- Installing a development environment





Why Python?

- It is a well-established programming language
- Ideal for beginners due to its readable syntax, the absence of unnecessary delimiters, dynamic typing, and dynamic memory management
- Python is an interpreted language, code is executed immediately in the Python console without requiring a compilation step
- Many publicly available libraries and a very lively community

Igual, L., & Seguí, S. (2024). Introduction to data science. In *Introduction to Data Science: A Python Approach to Concepts, Techniques and Applications* (pp. 1-4). Cham: Springer International Publishing.



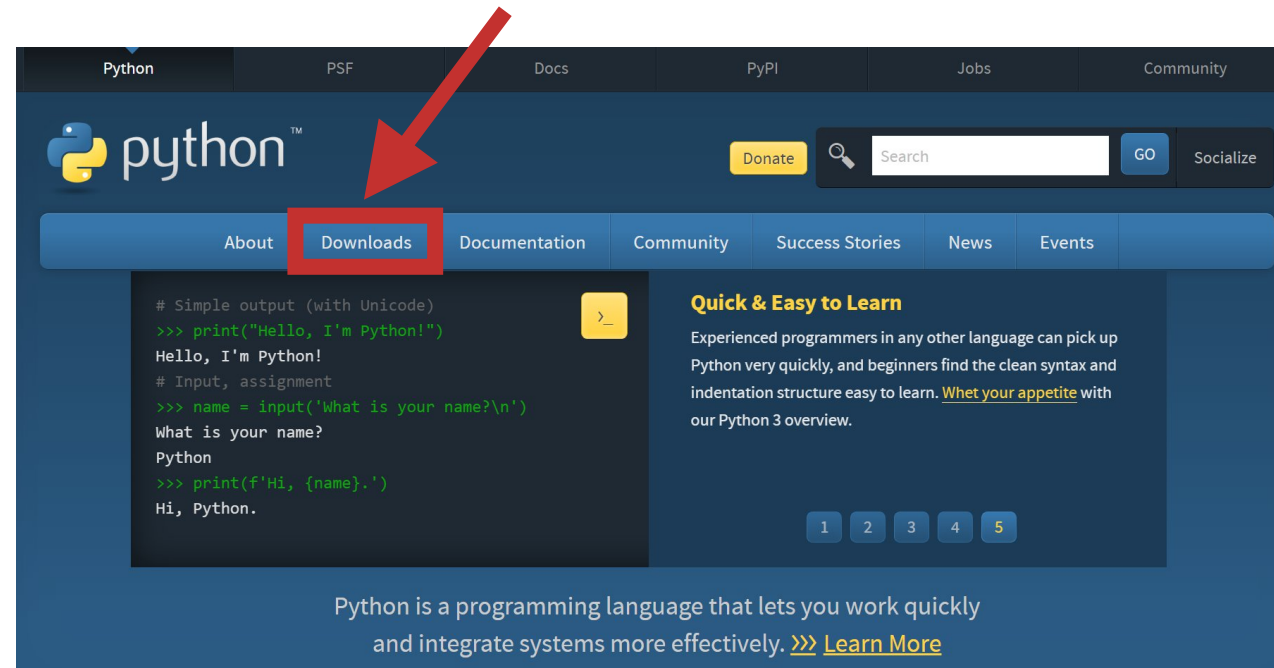


Use of Python

Basic requirement: Installation of the Python interpreter

Installing Python:

- Go to the website: [Welcome to Python.org](https://www.python.org)
- Click on Downloads
- Choose your operating system
- Download and install Python



Source: <https://www.python.org/>

<https://www.python.org/>



Development Environments

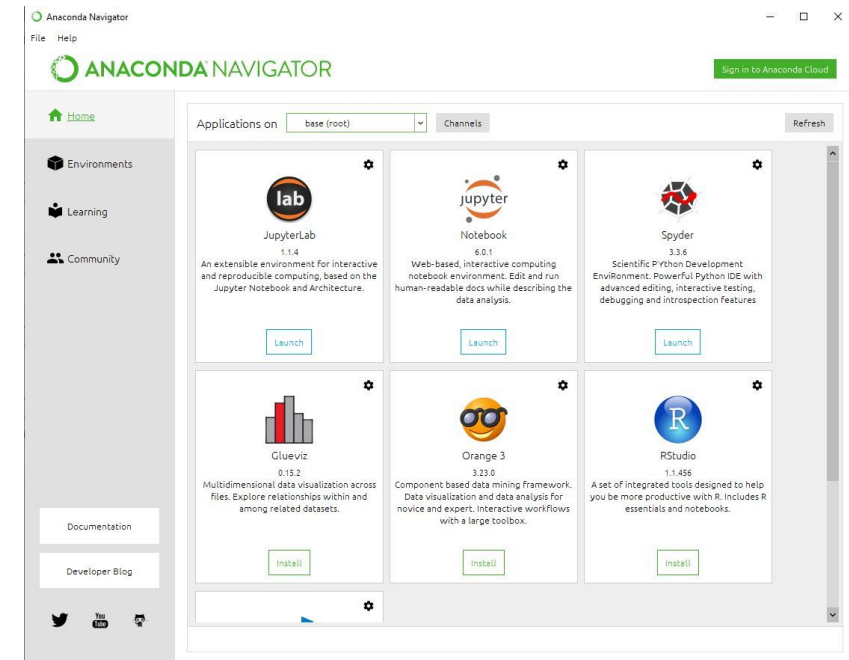
- For any programmer, an integrated development environment (IDE) is essential
 - An IDE consists of an editor, a compiler (or interpreter) and a debugger
 - Some IDEs can be applied for multiple programming languages, some only for one specific language
 - It should be chosen according to one's needs
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- Jupyter is a web integrated development environment (WIDE)
 - It was first used mostly in academia but is now also commonly applied in practice
 - It works with notebooks, which execute Python code directly and show the results

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Jupyter Notebook

- Download and install Anaconda from the anaconda.com website
- When asked to set Anaconda as default for Python, check the box
- Open the Anaconda Navigator
- There you can find Jupyter Notebook



Igual, L., & Seguí, S. (2024). Introduction to data science. In *Introduction to Data Science: A Python Approach to Concepts, Techniques and Applications* (pp. 1-4). Cham: Springer International Publishing. (2024): Wie installiere ich Anaconda unter Windows, <https://www.geeksforgeeks.org/how-to-install-anaconda-on-windows/>





Google Colab



- A cloud-based Jupyter Notebook environment provided by Google

Pros:

- No installation required; accessible from any device with internet access
- Free access to GPUs for intensive computations (great for machine learning)
- Easy collaboration with sharing options similar to Google Docs

Cons:

- Requires an internet connection; not usable offline
- Limited resources compared to local environments; can face session timeouts or restrictions on heavy usage

<https://github.com/googlecolab>





Recap this lecture

After successfully completing this micro-lecture, you are able to....

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