Programming with Python for Beginners: installation guidelines

The figure below shows the steps for setting up your system so you can work with the coding material and run it on your local system. This preparation might seem like a lot but consider that this is a one-time effort and shouldn't take more than 20 minutes, but, as with most software installations, **it requires you to have administration rights on your computer**. The steps are as follows:

If you experience problems with the installation, for example due to insufficient rights on your computer, skip to the last section "Plan B: working online".

Python Installation

The Python installation step is straightforward and can be accomplished through multiple methods. We recommend downloading Python from the official website at https://www.python.org. Download the latest stable version of Python for your system (Windows, Mac or Linux) from

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

Download and install the file by following the installation instructions. During installation make sure that you **add the python executable to the PATH environment variable** when asked. For the rest you can stick with the default installation.

IDE Installation

An IDE (Interactive Development Environment) is essential for efficiently writing and managing code in Python projects. Some popular choices for Python include Visual Studio Code, Pycharm and Cursor. I recommend going with Visual Studio Code (or VSCode) for this training. This lightweight and highly customizable IDE supports many different programming languages, which is one reason why it is a favorite. VS Code is open source and free at https://code.visualstudio.com. Its large community provides thousands of extensions. Install it with the download button and follow the instructions. If your are already familiar with another IDE for Python, feel free to continue using it.

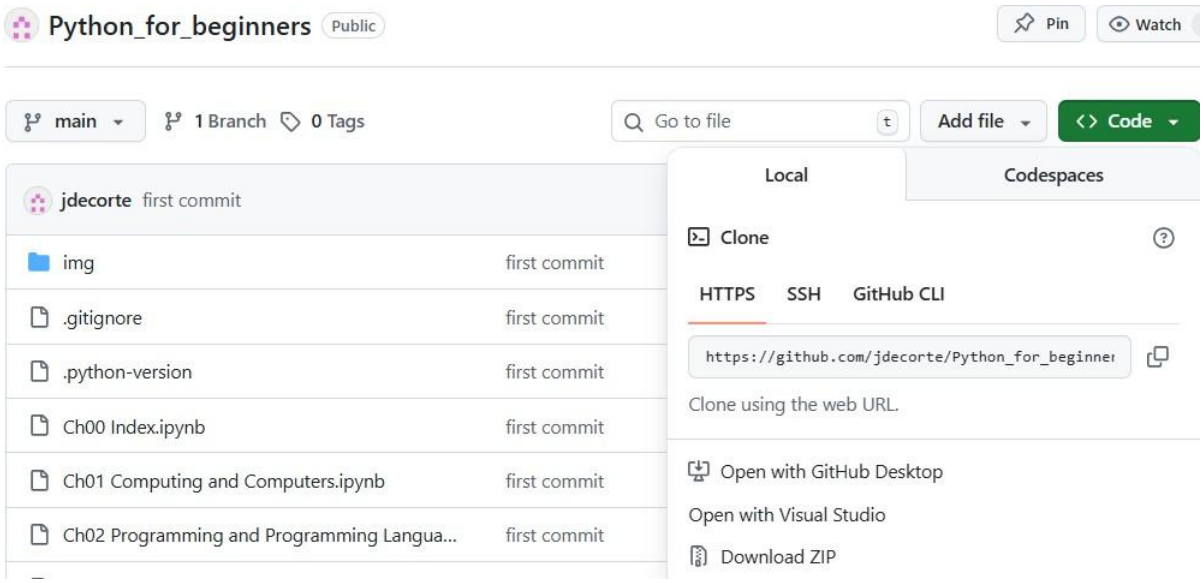
Getting the Course Material

The notebooks (= python code with explanatory text in-between) and images for this course are hosted on GitHub, which is the most prominent website (owned by Microsoft) for sharing and managing program code. You can find the material at the following link:

https://github.com/jdecorte/Python_for_beginners

When you navigate to this page, you should see all the material, as shown in the figure below. You can get the code in two ways by clicking the green Code button.

- Clone using the web URL
- Download as ZIP



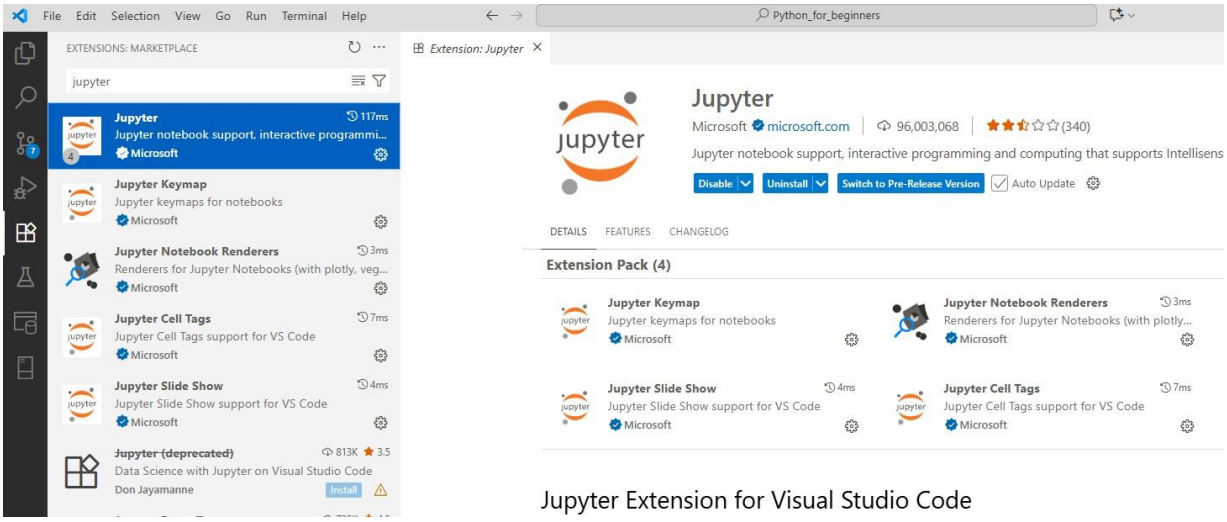
As a beginner, it's best you go with the ZIP option. Download the ZIP file and extract it to a folder of your choice on your computer.

Setting up Visual Studio Code

Visual Studio Code is in fact an empty box. It comes to life when you install extensions. For this course, we need two extensions in VS Code:

- Python: this extension makes we can use the "raw" Python we installed before in an interactive, graphical user interface in Visual Studio Code. Click on the extensions button (this is the 5th button in the vertical toolbar on the left in the screenshot below. Then type "python" in the search field and click the "Python" extension by Microsoft (the second option in the figure). You can now install it.

- Jupyter: with this extension you can read the formatted texts of the course from within Visual Studio Code. Type "jupyter" in the search field and install the extension.

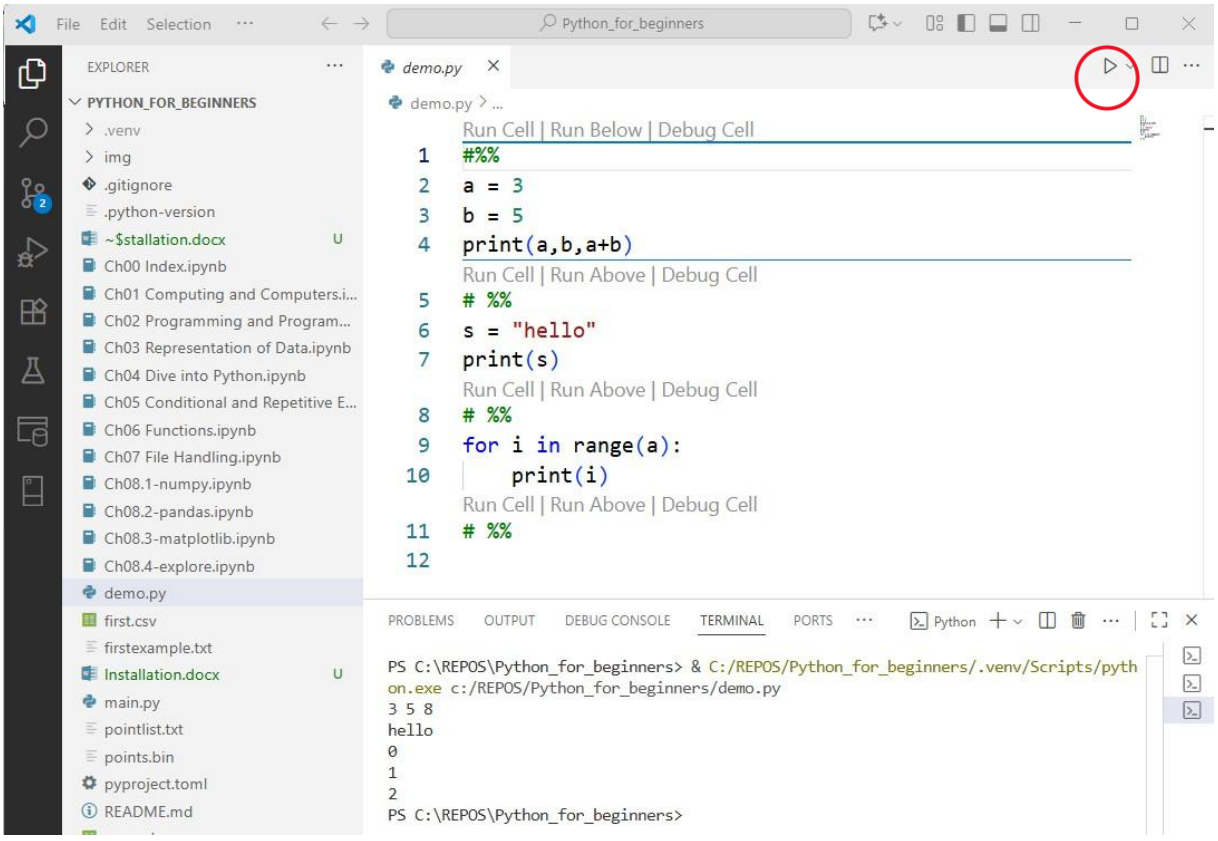


Jupyter Extension for Visual Studio Code

Test your installation

You can now open your `Python_for_beginners` folder (with File/Open Folder… from the) in Visual Studio Code. Navigate to the file `demo.py` and click the arrow button in the upper right corner.

You should get the same output as in the figure below (see the terminal pane below for the output).



Any problems that you experience while executing these instructions can be discussed during the workshop.

Plan B: working online

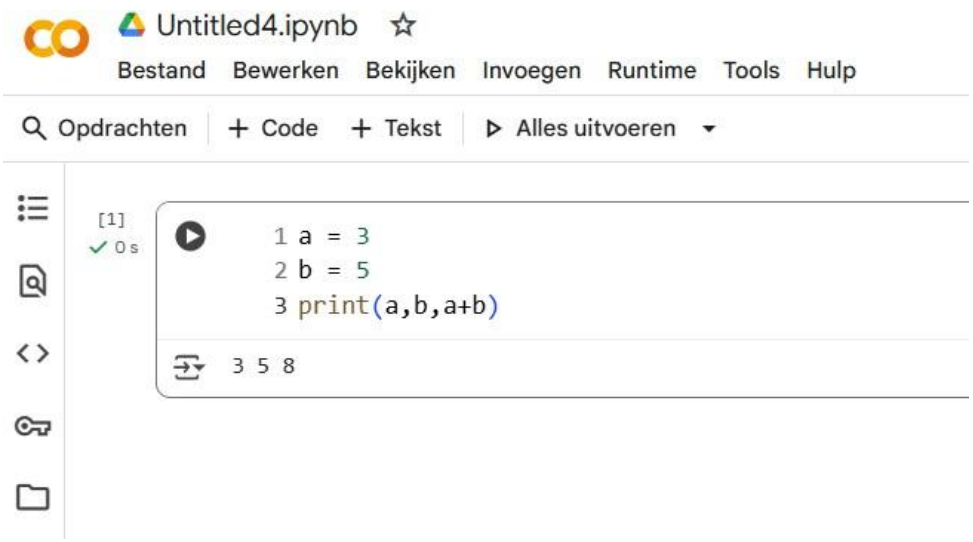
Course Material

You can view the course material at https://github.com/jdecorte/Python_for_beginners. Sample code is not executable from there.

Programming in Python

You can write and test your own programs on Google Colab, an online interactive programming environment by Google. Programs are stored online on your google drive, so you need a google account.

Surf to https://colab.research.google.com/ and click "Nieuw notebook". You can now start writing code in the box and click the arrow in front of it to execute:



Keep in mind, this is just a sandbox for playing around with Python. You have no access to your own (local) data sources and you can't deploy real-life programs from there.