

An aerial night photograph of the TU/e campus in Eindhoven, featuring modern buildings, a canal, and a busy road with light trails. A semi-transparent red rectangle is overlaid on the top half of the image.

Python Setup Instructions

TUESDAY 26 NOVEMBER 2024 – FUNDAMENTALS OF BIM (7M900)

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Install Python 3

1. Check which Python version you have in the Terminal in VSCode:
`python --version`
2. Install version 3.9 or later (not the very latest) from :
<https://www.python.org/downloads/windows/>
3. Check if it is actually installed by repeating step 1 in VSCode

Python Releases for Windows


- [Latest Python 3 Release - Python 3.10.1](#)
- [Latest Python 2 Release - Python 2.7.18](#)

Stable Releases


- [Python 3.10.1 - Dec. 6, 2021](#)

Note that Python 3.10.1 cannot be used on Windows 7 or earlier.

- Download [Windows embeddable package \(32-bit\)](#)
- Download [Windows embeddable package \(64-bit\)](#)
- Download [Windows help file](#)
- Download [Windows installer \(32-bit\)](#)
- Download [Windows installer \(64-bit\)](#)

- [Python 3.9.9 - Nov. 15, 2021](#) 

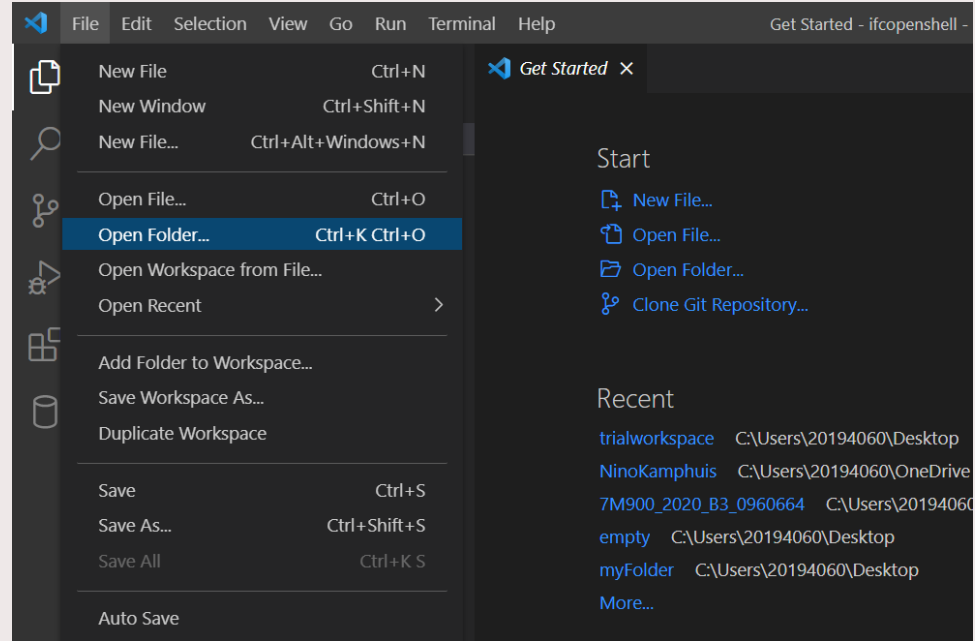
Note that Python 3.9.9 cannot be used on Windows 7 or earlier.

- Download [Windows embeddable package \(32-bit\)](#)
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- Download [Windows help file](#)
- Download [Windows installer \(32-bit\)](#)
- Download [Windows installer \(64-bit\)](#)

- [Python 3.9.8 - Nov. 5, 2021](#)

Install MS Visual Studio Code + Get started

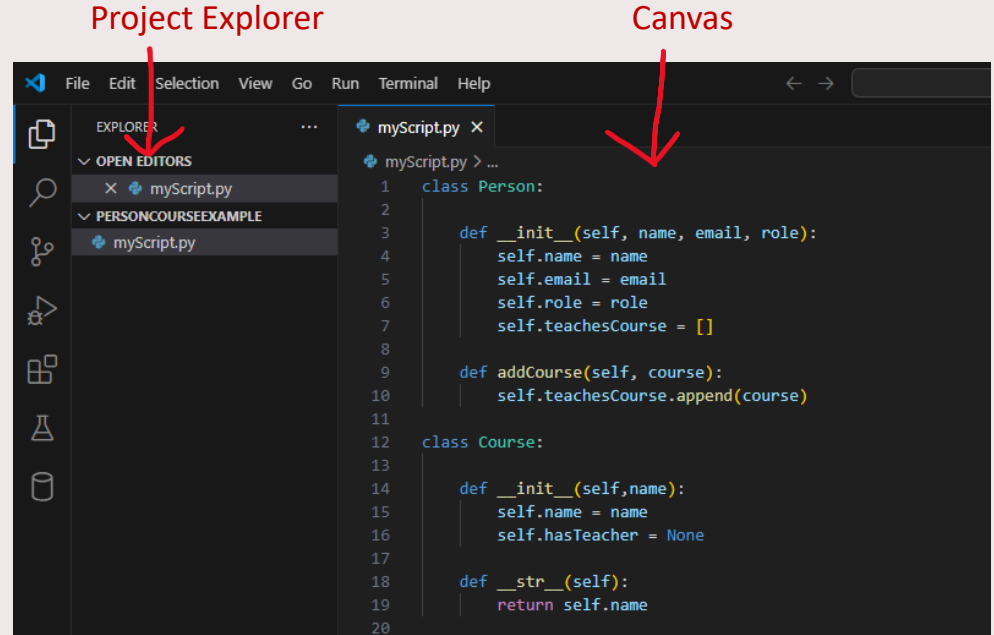
- Create an empty folder on your hard drive in a memorable location
- Open Visual Studio Code (VSCode - <https://code.visualstudio.com>)
- Go to VSCode and Click File > Open Folder...
- Open your folder



See also video tutorial: <https://shorturl.at/xFHVZ>

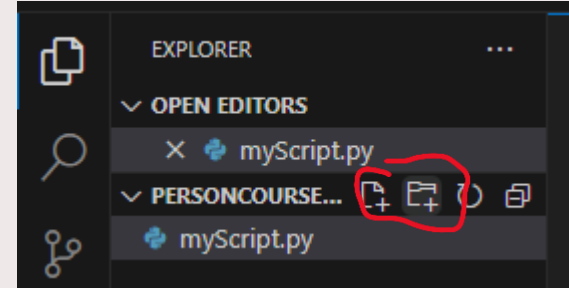
Check that you can find your project files

- VS Code now shows your project structure (folder) in the left side of the screen.
- If you have any file in the folder that you opened, then you can open it by double-clicking. It then shows in edit mode in the Canvas (middle) of VS Code.



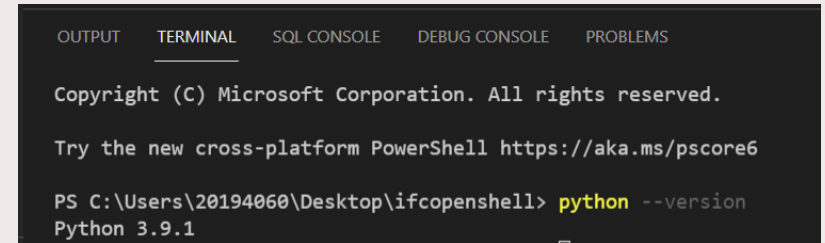
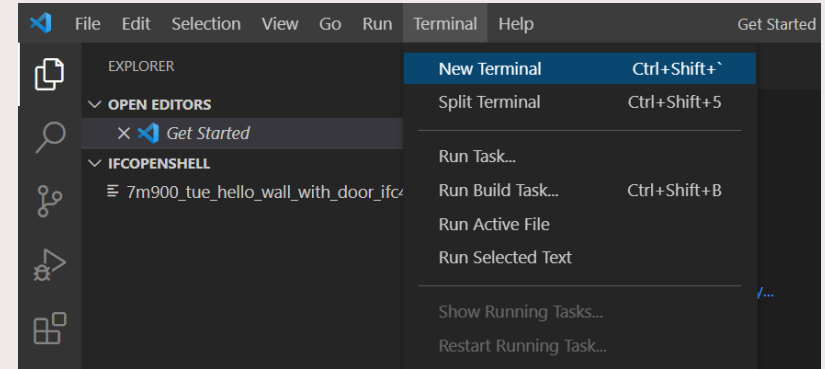
Make your first Python file

- Add Folders and Files as you prefer, using the display as shown on the right
- The very least to get started is to create a “myScript.py” file. The filename is custom. The file extension (.py) is defined of course.



Open a Terminal Window

- *Terminals, also known as command lines or consoles, allow us to accomplish and automate tasks on a computer without the use of a graphical user interface.*
- **In VSCode, click Terminal > New Terminal** and see the Terminal appearing at the bottom of the IDE

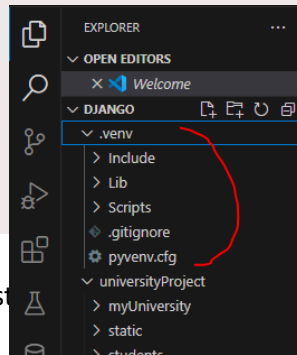
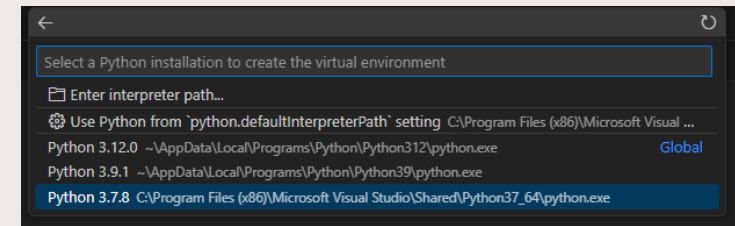
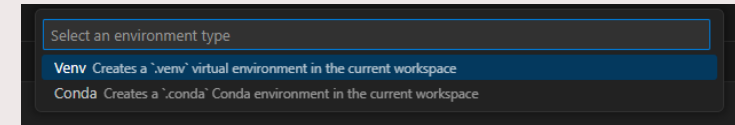
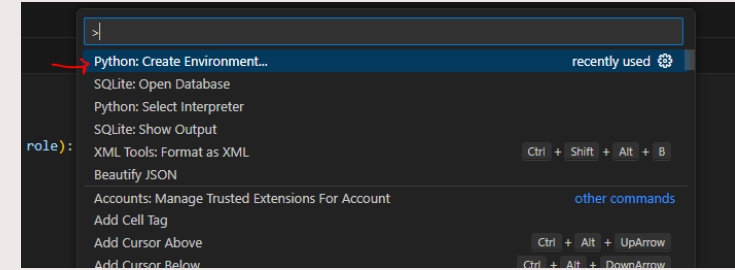
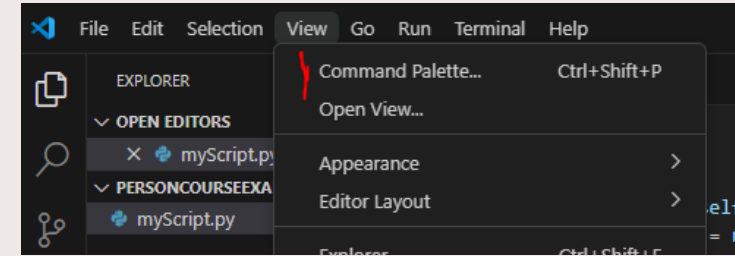


<https://itconnect.uw.edu/learn/workshops/online-tutorials/web-publishing/what-is-a-terminal/>

See also video tutorial: <https://shorturl.at/xFHVZ>

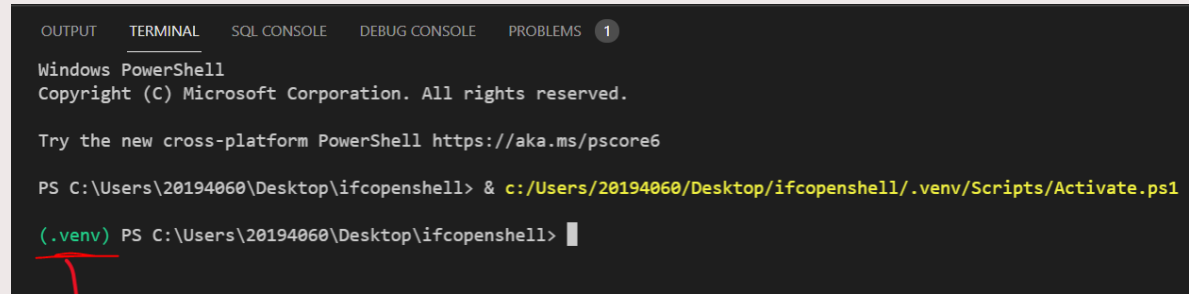
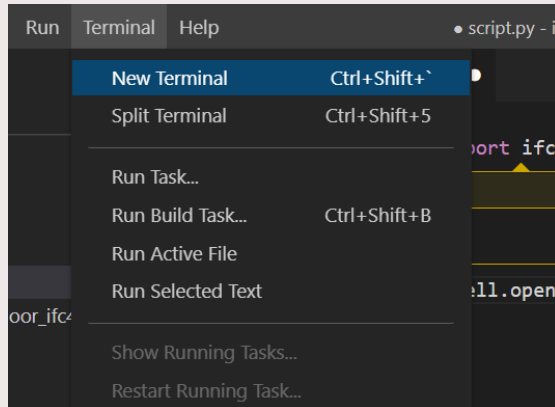
Create your Virtual Environment

- The best way to create a Virtual Environment is to
 - go to the 'View > Command Palette...', and
 - select 'Python: Create Environment...'
 - then select 'Venv – Creates a ...'
 - Then select one of your Python installations as preferred
- You will then see the VENV that you created in your project folder



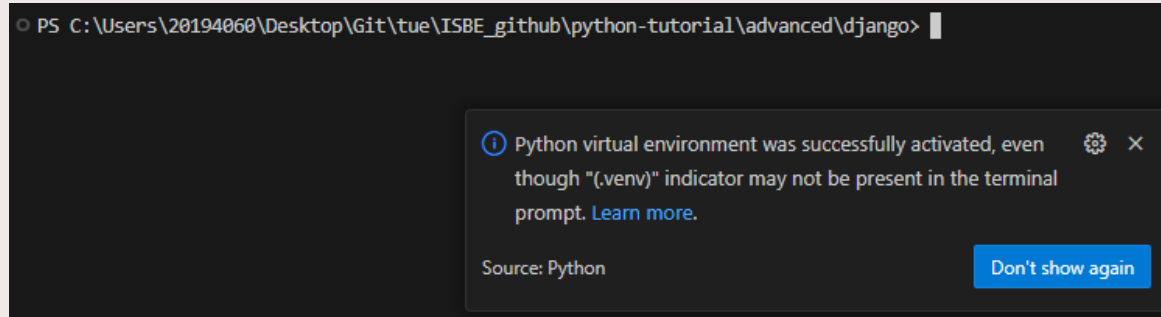
Activate your environment

- To activate your virtual environment, you need to start a new Terminal
- Starting a new Terminal will execute the command
`.venv/Scripts/Activate.ps1`
- Your virtual environment is activated and running when it shows up in green (see below)
- If this does not work, then see next slide



Virtual Environment is running by default

- Recently, the virtual environment is often running by default. This is the case when you see the below pop-up in VSCode:



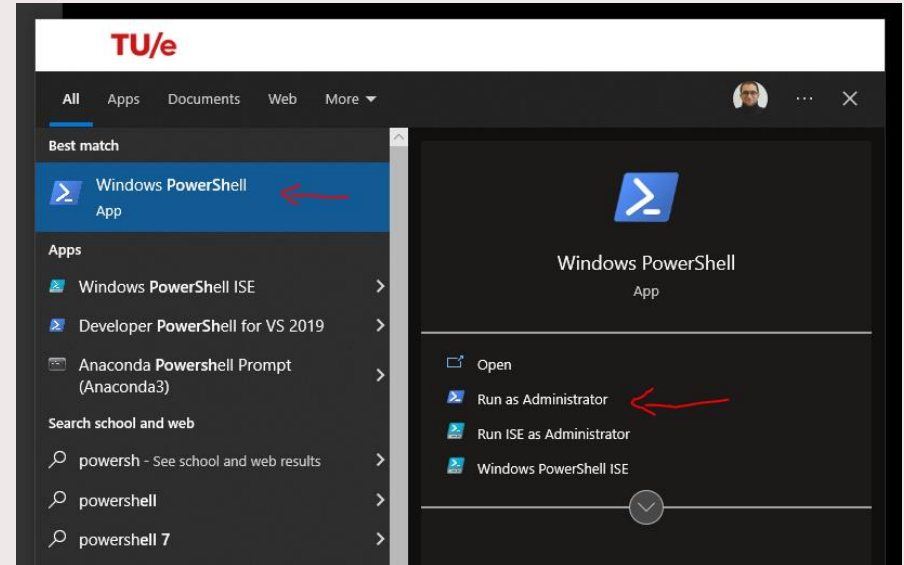
- When the virtual environment is activated, you have successfully finished setup. You can now add code and run it!

DETOUR: Activating the virtual environment does not work

- Activating the virtual environment often does not work on Windows machines because it is by default not allowed by Windows to execute the Activate.ps1 script (or any other script) in a PowerShell terminal.
- To solve this, the 'Execution Policy' of the PowerShell terminal needs to be changed
- See next few slides on how to do this
- See for more information and explanation: <https://learn.microsoft.com/en-us/powershell/module/microsoft.powershell.security/set-executionpolicy>

DETOUR: setting execution policy

- Open Windows Powershell as Administrator
- Execute the below command in Windows Powershell
- Enter 'Y' to all questions
- Close Windows Powershell
- Go back to slide 29 and try activating your virtual environment again

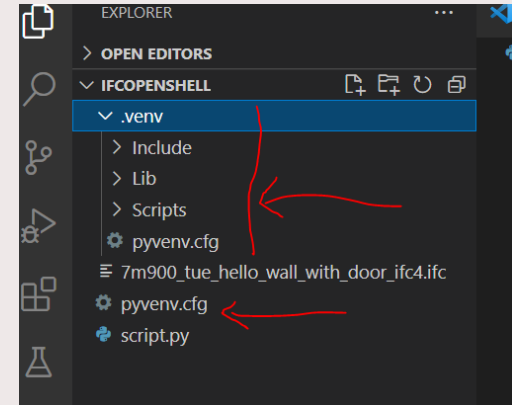


```
PS C:\WINDOWS\system32> Set-ExecutionPolicy RemoteSigned -Scope LocalMachine
```

```
Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Scope LocalMachine  
Set-ExecutionPolicy Unrestricted
```

DETOUR: Return to your project in VSCode

- Go back to VSCode
- Check that your project is still there and that you can now activate your virtual environment or that it is activated.



```
OUTPUT  TERMINAL  SQL CONSOLE  DEBUG CONSOLE  PROBLEMS  1
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\20194060\Desktop\ifcopenshell> & c:/Users/20194060/Desktop/ifcopenshell/.venv/Scripts/Activate.ps1

(.venv) PS C:\Users\20194060\Desktop\ifcopenshell> 
```

