Day 26

Virtual Environment in Python:

What Is a Virtual Environment?

A virtual environment (venv) is an isolated Python environment where you can install packages without affecting the global Python installation.

Why Use a Virtual Environment?

- Avoids package version conflicts
- Keeps projects independent
- Makes projects portable
- Prevents breaking system Python

Example Problem (Without venv)

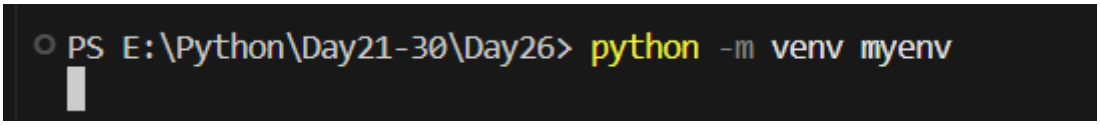
- Project A needs Django 2.2
- Project B needs Django 4.x
- Installing one breaks the other

Creating a Virtual Environment:

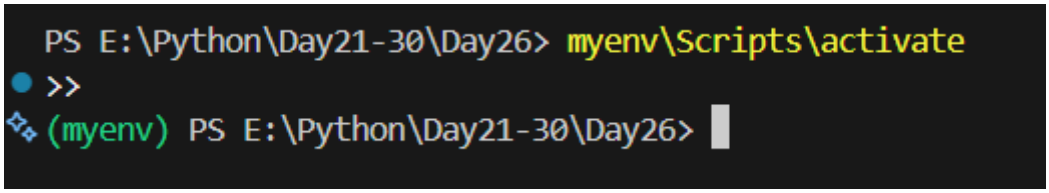
Step 1: Open Terminal / Command Prompt

python -m venv myenv

myenv = environment name



To activate:



Deactivating the Virtual Environment

```
(myenv) PS E:\Python\Day21-30\Day26> deactivate
PS E:\Python\Day21-30\Day26>
```

Installing the module named ‘requests’:

```
(myenv) PS E:\Python\Day21-30\Day26> pip install requests
>>
Collecting requests
  Using cached requests-2.32.5-py3-none-any.whl.metadata (4.9 kB)
Collecting charset_normalizer<4,>=2 (from requests)
  Using cached charset_normalizer-3.4.4-cp313-cp313-win_amd64.whl.metadata (38 kB)
Collecting idna<4,>=2.5 (from requests)
  Using cached idna-3.11-py3-none-any.whl.metadata (8.4 kB)
Collecting urllib3<3,>=1.21.1 (from requests)
  Downloading urllib3-2.6.2-py3-none-any.whl.metadata (6.6 kB)
```

Checking installed packages:

```
(myenv) PS E:\Python\Day21-30\Day26> pip list
>>
Package            Version
------------------ ----------
certifi            2025.11.12
charset-normalizer 3.4.4
idna               3.11
pip                25.2
requests           2.32.5
urllib3            2.6.2
(myenv) PS E:\Python\Day21-30\Day26>
```

Sharing a Virtual Environment (requirements.txt)

```
(myenv) PS E:\Python\Day21-30\Day26> pip freeze > requirements.txt
>>
(myenv) PS E:\Python\Day21-30\Day26>
```

Deleting a Virtual Environment: Just delete the folder:

Myenv/

Summary:

- A virtual environment is an isolated Python workspace
- It prevents dependency and version conflicts
- Each project should have its own virtual environment
- Created using python -m venv env_name
- Must be activated before installing packages
- Packages installed inside venv do not affect global Python
- Deactivate using deactivate
- Use requirements.txt to share dependencies
- Virtual environment folders should not be committed to Git

--The End--