

1. Install Required Software

1. Download and install [VS Code](https://code.visualstudio.com/)
<https://code.visualstudio.com/>

2. Install [Python](https://www.python.org/downloads/release/python-3127/) from:

<https://www.python.org/downloads/release/python-3127/>

Use Python 3.12.7 as it is tested with the libraries we will work on

3. Verify Python installation by opening terminal/command prompt:

```
python -version
```

If it errors finding the executable, add python.exe location to System environment variable: PATH

You can find the location of python.exe by opening the windows menu, right click on Python app (open file location), copy path

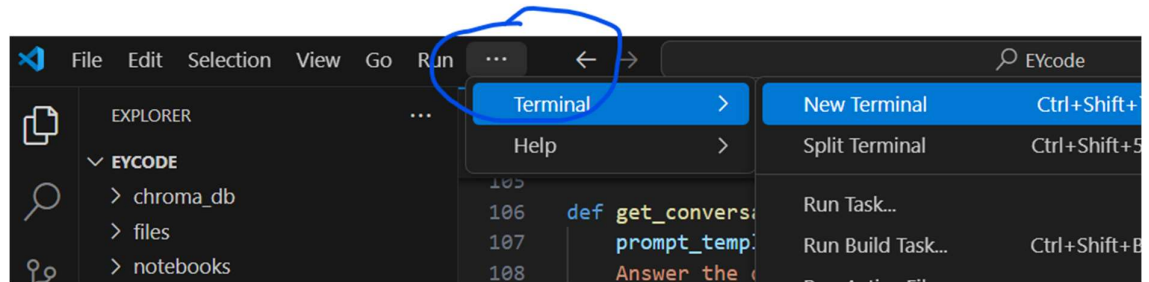
2. VS Code Setup

1. Open VS Code
2. Install the Python extension:
 - Click the Extensions icon in the sidebar (or press Ctrl+Shift+X)
 - Search for "Python"
 - Install the Microsoft Python extension
 - Other VS Code extensions that are needed only if you want to run the Python notebooks in VS Code (you can always run them in colab)
Jupyter, Jupyter Notebook renderers, ipykernel

3. Create a Project

1. Create a new folder for your project
2. Open the folder in VS Code (File > Open Folder)

3. Start a terminal



4. In the terminal window, give the following commands:

Create a new virtual environment:

```
python -m venv venv  
venv\Scripts\activate
```

5. Create requirements.txt

1. Create a requirements.txt file in your project root folder. Put following content in requirements.txt:

```
langchain-openai  
langchain-community  
langchain-text-splitters  
chromadb  
beautifulsoup4  
pypdf  
wikipedia  
plotly  
ragas  
tqdm  
datasets  
python-dotenv  
openai  
streamlit  
dotted-dict  
PyPDF2  
matplotlib  
seaborn
```

2. Install packages from requirements.txt:

Give the following command in the terminal:

pip install -r requirements.txt






You may see error during the installation mentioning something like below:

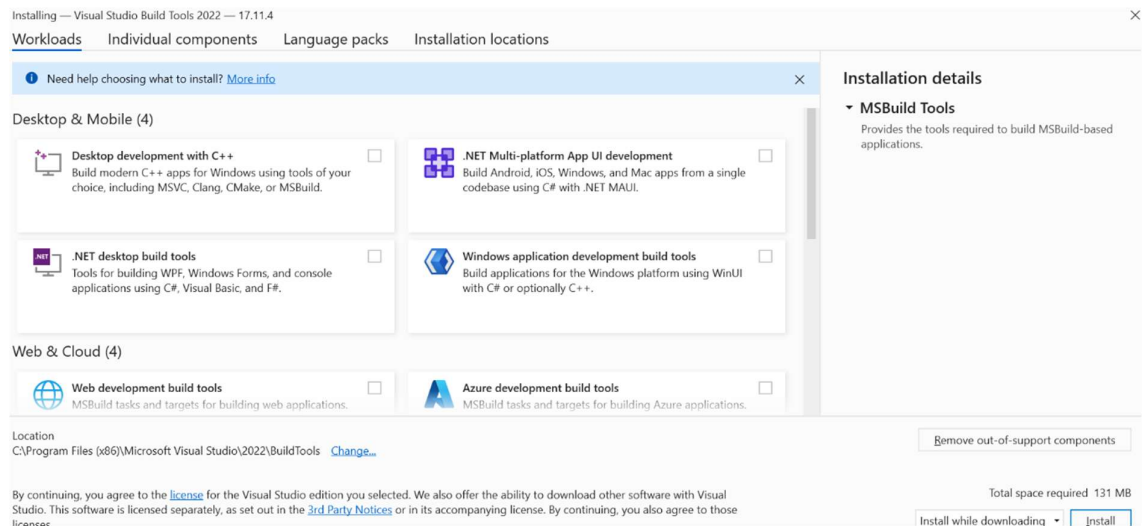
```
running bdist_wheel
running build
running build_ext
building 'hnsplib' extension
error: Microsoft Visual C++ 14.0 or greater is required. Get it with "Microsoft C++ Build Tools": https://visualstudio.microsoft.com/visual-cpp-build-tools/
[end of output]

note: This error originates from a subprocess, and is likely not a problem with pip.
```

To fix it, install MS dev tools:

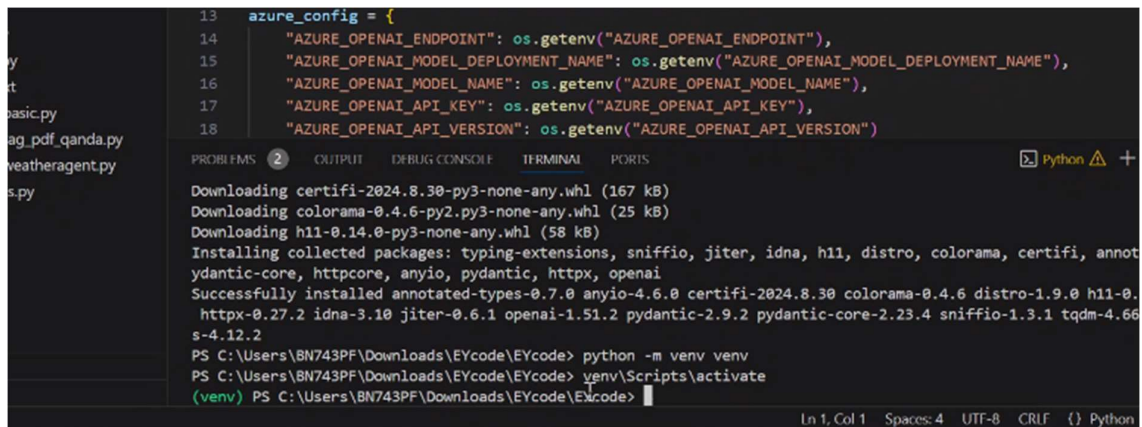
<https://visualstudio.microsoft.com/visual-cpp-build-tools/>

Name	Date modified	Type
Today (5)		
 vs_BuildTools.exe	10-10-2024 02:32 PM	Application
 tesla_db.zip	10-10-2024 12:24 PM	Compressed (zipped)
 tesla-annual-reports.zip	10-10-2024 12:09 PM	Compressed (zipped)
 index_tesla_documents.ipynb	10-10-2024 12:00 PM	Jupyter Source File
 retrieval_tesla_documents.ipynb	10-10-2024 11:53 AM	Jupyter Source File
Yesterday (6)		



Choose the first one – desktop dev in c++

After successful installation of packages you should see:



```
13 azure_config = {
14     "AZURE_OPENAI_ENDPOINT": os.getenv("AZURE_OPENAI_ENDPOINT"),
15     "AZURE_OPENAI_MODEL_DEPLOYMENT_NAME": os.getenv("AZURE_OPENAI_MODEL_DEPLOYMENT_NAME"),
16     "AZURE_OPENAI_MODEL_NAME": os.getenv("AZURE_OPENAI_MODEL_NAME"),
17     "AZURE_OPENAI_API_KEY": os.getenv("AZURE_OPENAI_API_KEY"),
18     "AZURE_OPENAI_API_VERSION": os.getenv("AZURE_OPENAI_API_VERSION")
19 }

Downloading certifi-2024.8.30-py3-none-any.whl (167 kB)
Downloading colorama-0.4.6-py2.py3-none-any.whl (25 kB)
Downloading h11-0.14.0-py3-none-any.whl (58 kB)
Installing collected packages: typing-extensions, sniffio, jiter, idna, h11, distro, colorama, certifi, annotated-types, httpcore, anyio, pydantic, httpx, openai
Successfully installed annotated-types-0.7.0 anyio-4.6.0 certifi-2024.8.30 colorama-0.4.6 distro-1.9.0 h11-0.14.0 httpx-0.27.2 idna-3.10 jiter-0.6.1 openai-1.51.2 pydantic-2.9.2 pydantic-core-2.23.4 sniffio-1.3.1 tqdm-4.66.0
PS C:\Users\BN743PF\Downloads\EYcode\EYcode> python -m venv venv
PS C:\Users\BN743PF\Downloads\EYcode\EYcode> venv\Scripts\activate
(venv) PS C:\Users\BN743PF\Downloads\EYcode\EYcode>
```

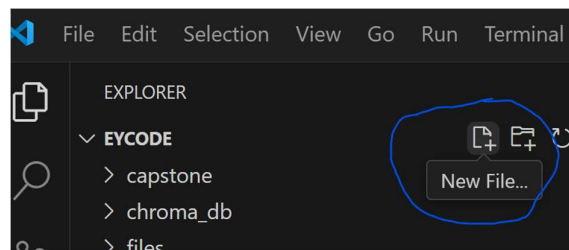
5. Write a simple python program

Create a folder where you will keep all your code.

Recommended: C:\Users\<username>\code\genai

When you start VS code, it will ask you to open a folder. Open the above folder

In VS Code, add a new file:

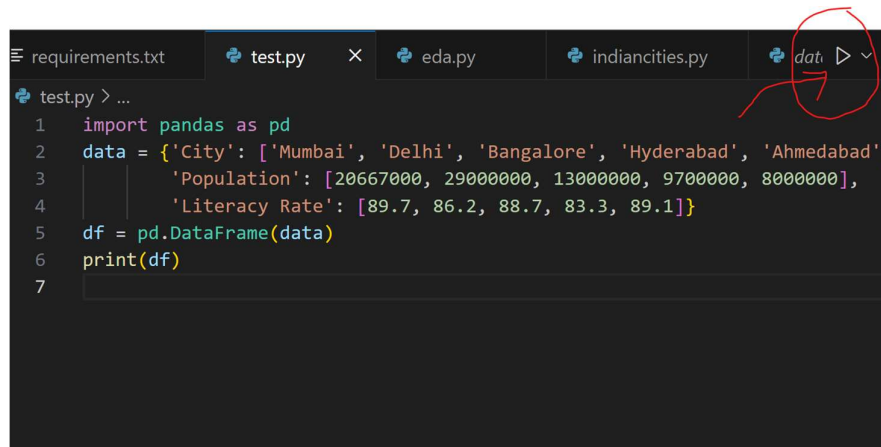


test.py

Put following lines in it:

```
import pandas as pd
data = {'City': ['Mumbai', 'Delhi', 'Bangalore', 'Hyderabad', 'Ahmedabad'],
        'Population': [20667000, 29000000, 13000000, 9700000, 8000000],
        'Literacy Rate': [89.7, 86.2, 88.7, 83.3, 89.1]}
df = pd.DataFrame(data)
print(df)
```

6. Save the file and run it

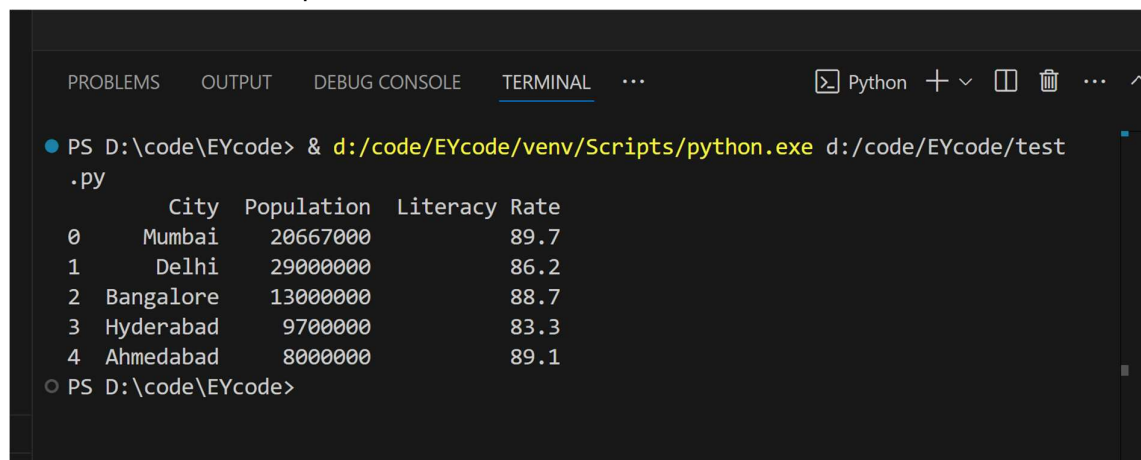


```
test.py > ...
1 import pandas as pd
2 data = {'City': ['Mumbai', 'Delhi', 'Bangalore', 'Hyderabad', 'Ahmedabad'],
3         'Population': [20667000, 29000000, 13000000, 9700000, 8000000],
4         'Literacy Rate': [89.7, 86.2, 88.7, 83.3, 89.1]}
5 df = pd.DataFrame(data)
6 print(df)
7
```

If unable to run, you may need to select Python Interpreter:

- Press Ctrl+Shift+P (Cmd+Shift+P on macOS)
- Type "Python: Select Interpreter"
- Choose the interpreter from your virtual environment

7. You should see the output like below



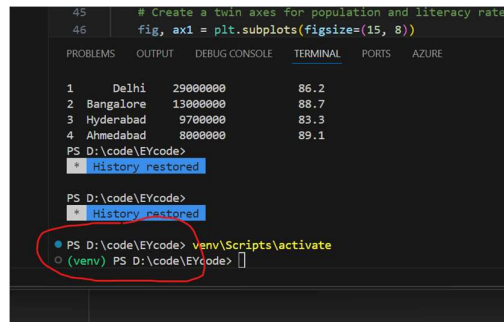
```
PS D:\code\EYcode> & d:/code/EYcode/venv/Scripts/python.exe d:/code/EYcode/test
.py
      City  Population  Literacy Rate
0   Mumbai    20667000         89.7
1    Delhi    29000000         86.2
2  Bangalore    13000000         88.7
3  Hyderabad     9700000         83.3
4  Ahmedabad     8000000         89.1
PS D:\code\EYcode>
```

Troubleshooting

- If terminal says scripts are disabled (PowerShell):
Set-ExecutionPolicy -ExecutionPolicy RemoteSigned -Scope CurrentUser
- If Python is not recognized, verify it's added to PATH
- Make sure to always activate virtual environment before installing packages. The active environment is shown in green as below:

Give command:

`venv\Scripts\activate`



The screenshot shows a VS Code interface with a terminal window. The terminal has tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, PORTS, and AZURE. The TERMINAL tab is active, displaying the following content:

```
45 # Create a twin axes for population and literacy rate
46 fig, ax1 = plt.subplots(figsize=(15, 8))
```

1	Delhi	29000000	86.2
2	Bangalore	13000000	88.7
3	Hyderabad	9700000	83.3
4	Ahmedabad	8000000	89.1

```
PS D:\code\EYcode>
* History restored

PS D:\code\EYcode>
* History restored

PS D:\code\EYcode> venv\Scripts\activate
(venv) PS D:\code\EYcode>
```

The command `venv\Scripts\activate` is circled in red, and the resulting prompt `(venv)` is also circled in red.

- If still facing errors, try following and then run `pip install -r requirements.txt`:

`pip install --upgrade`

`pip setuptools wheel`

`pip cache purge`

`pip install --upgrade --force-reinstall setuptools`

Thatsit!!

You are now ready to build your GenAI Python apps with VS code