How to Run Simulation GUI

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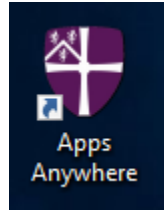
Contents

A. Campus PC

a) By preparing virtual environment for Python

- Open 'AppsAnywhere' application on your desktop.

- Type 'Anaconda' in the search box. Find 'Anaconda 2021.5 – Python 3.8.10' and click 'Launch'.

b) By launching Visual Studio Code from 'AppsAnywhere'

- Type 'Visual Studio Code' in the search box. Find 'Visual Studio Code' and click 'Launch'.

- Click the "Extensions" icon in the left side of the window(Or "Ctrl + Shift + X" on the keyboard). Type "Python" in the searching box and click "Install" to install extension for Python.

- Download and Unzip "puzzlebot_python.zip" from your Ultra. Click "File" and "Open Folder..." to find folder "puzzlebot_python" and click "OK" to open it in the workspace.

- Click "Yes, I trust the authors".

- Run "puzz_gui.py"
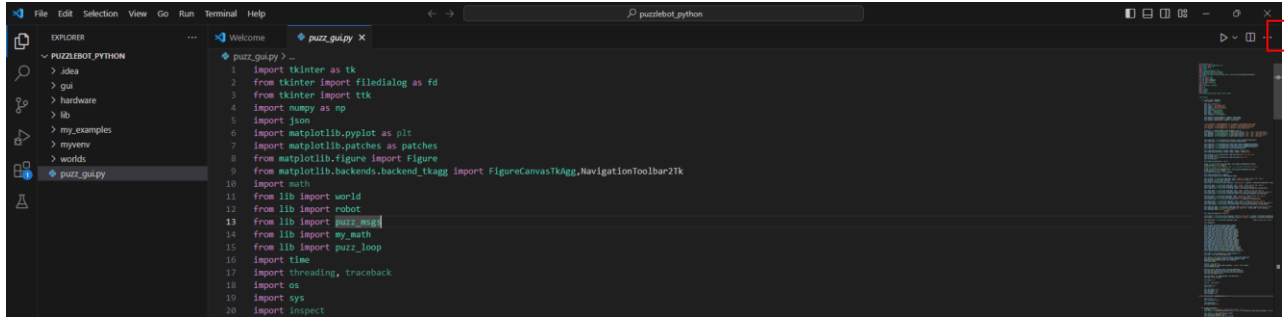
- Now, the GUI will show
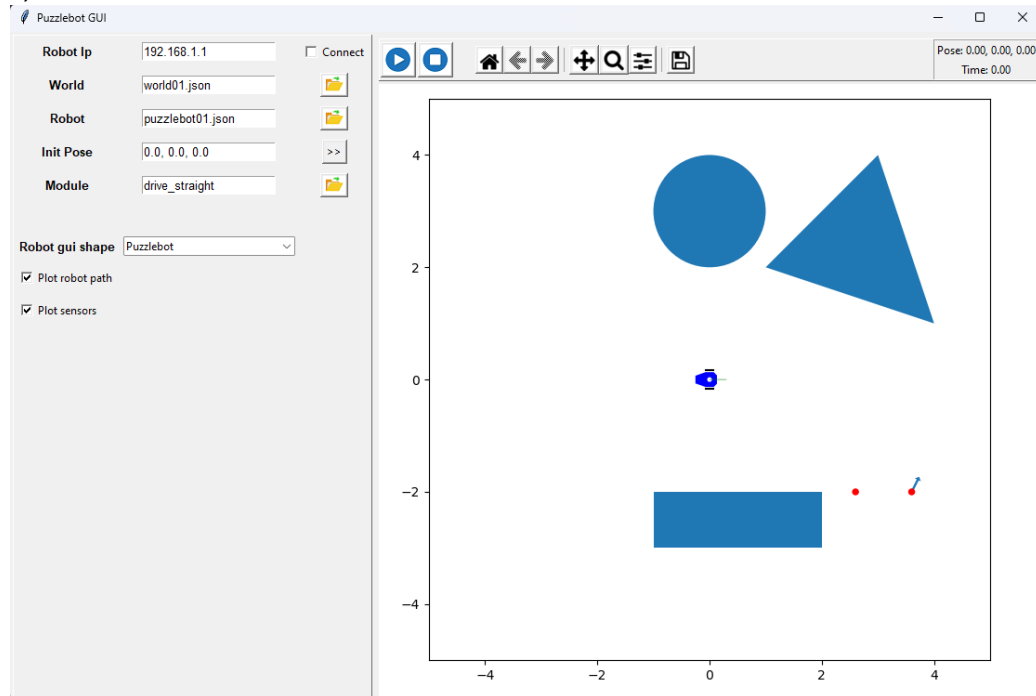
B. Personal laptop (Windows)

a) Download and install Python

- Download Python from https://www.python.org/downloads.
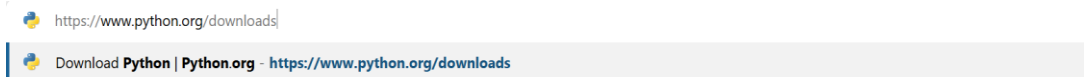
- Scroll down and find Python3.12.7, click "Download".

- In the new page, select and click "Windows Installer(64-bit)".(If you are working on MacOS or Linux, then select the corresponding version).

- Double Click "python-3.12.7-amd64.exe" to install the interpreter.

- Then in the following window, tick "use admin privileges when installing py.exe" and "Add python.exe to PATH", then click "Install Now".
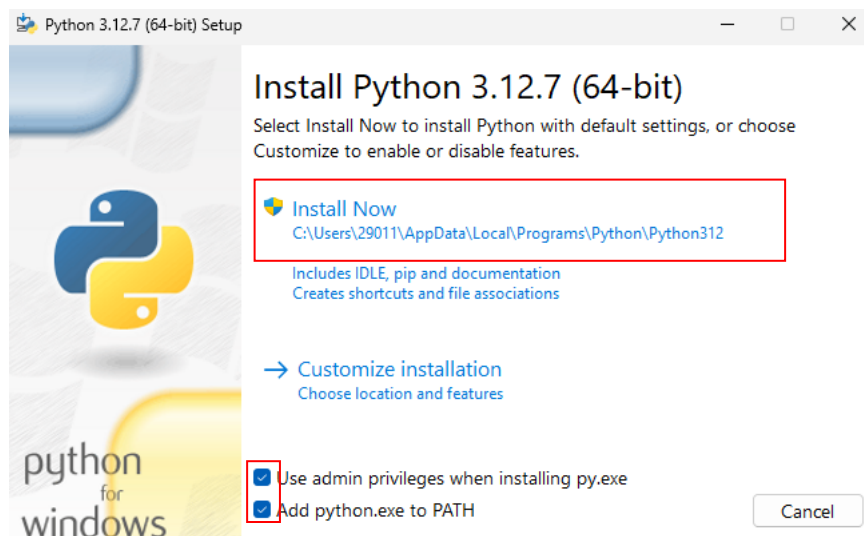
- In next window, click "Yes".
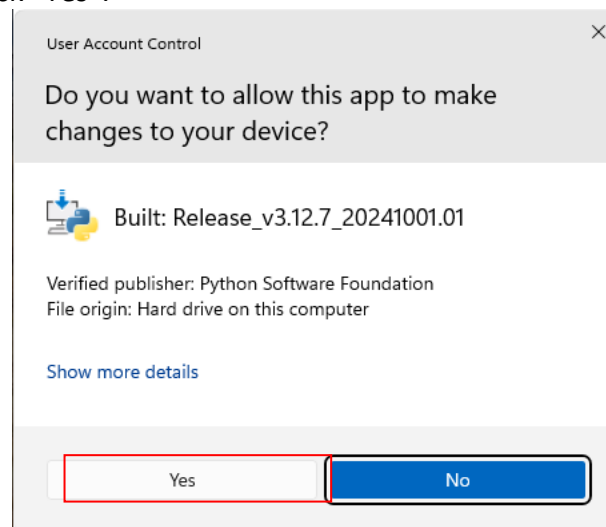
- Waiting for the setup progress to finish.
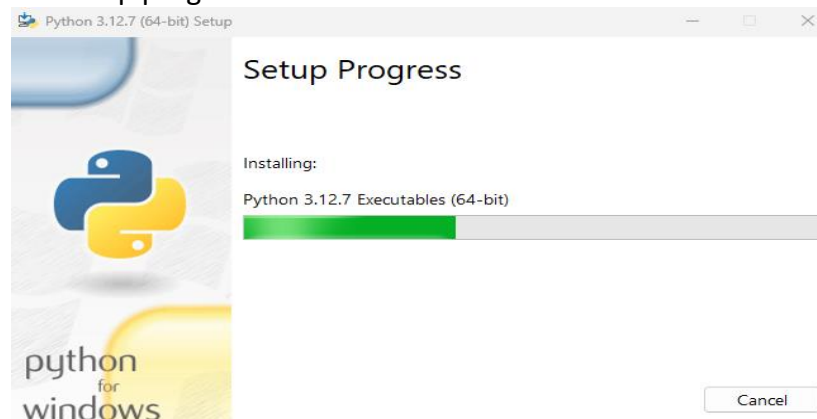
- Next, click "Disable path length limit".
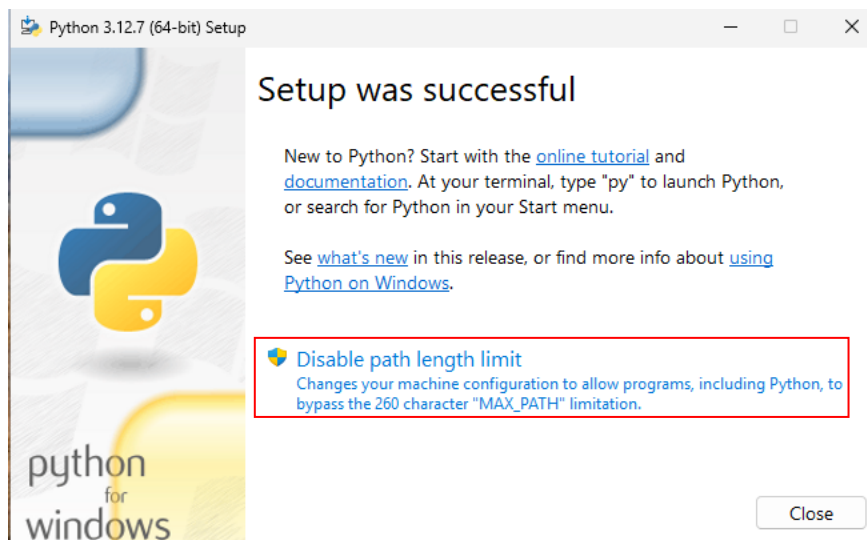
- Next, click "Yes".
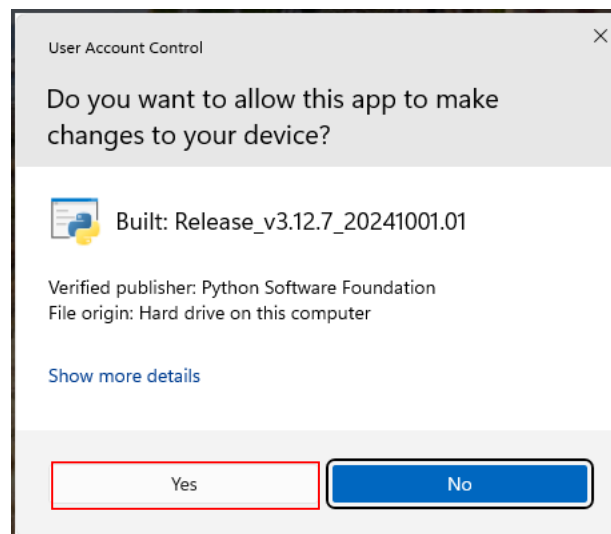
- Next, the Python interpreter is successfully installed, click "Close".
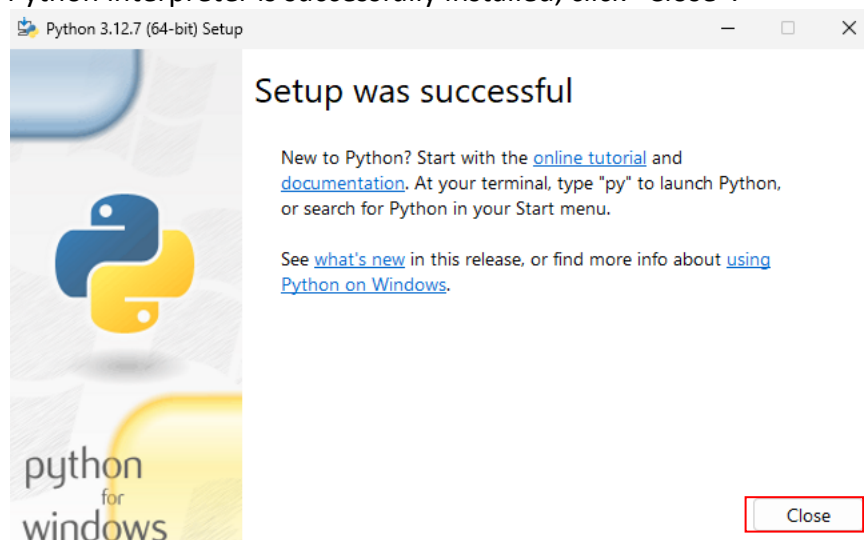
b) Download and install Visual Studio Code

- Now, find Visual Studio Code from https://code.visualstudio.com/docs/setup/windows, then

click "Visual Studio Code installer" to download it.
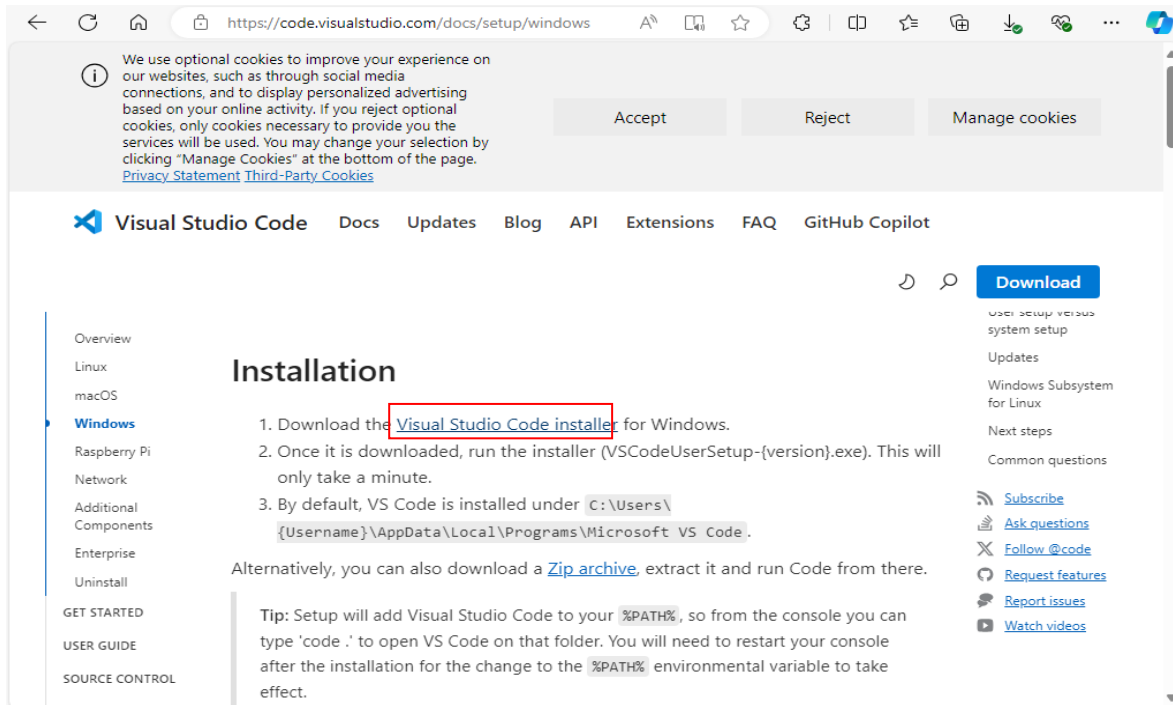
- Next, double click "VSCodeUserSetup-x64-1.94.2" to install the software.
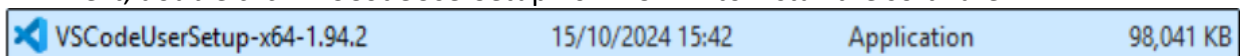
- In the following window, tick "I accept the agreement", and click "Next".
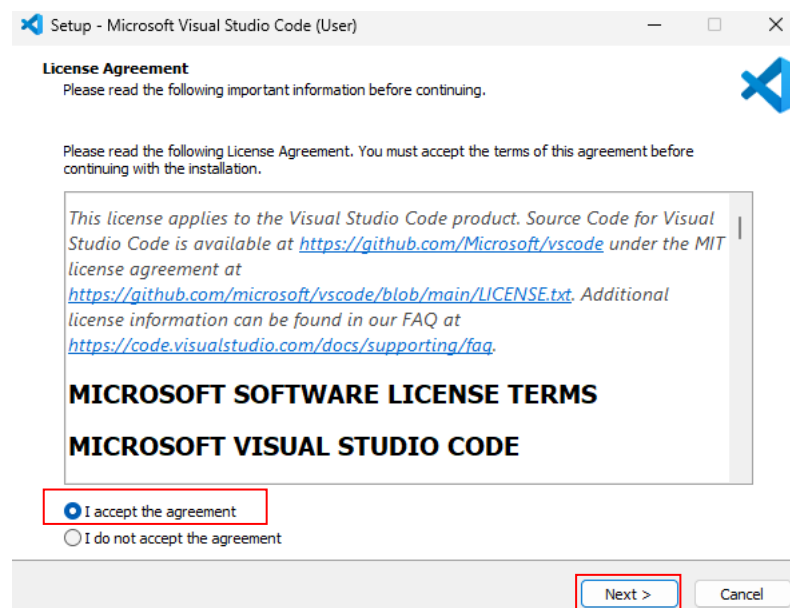
- Next, click "Browse…" to select the path to install VS code, and then click"Next".
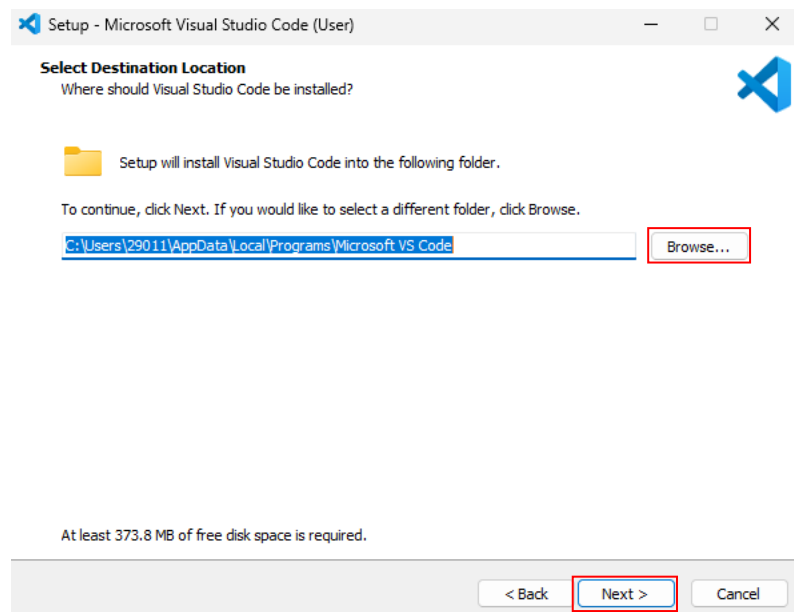
- Next, click "Next".
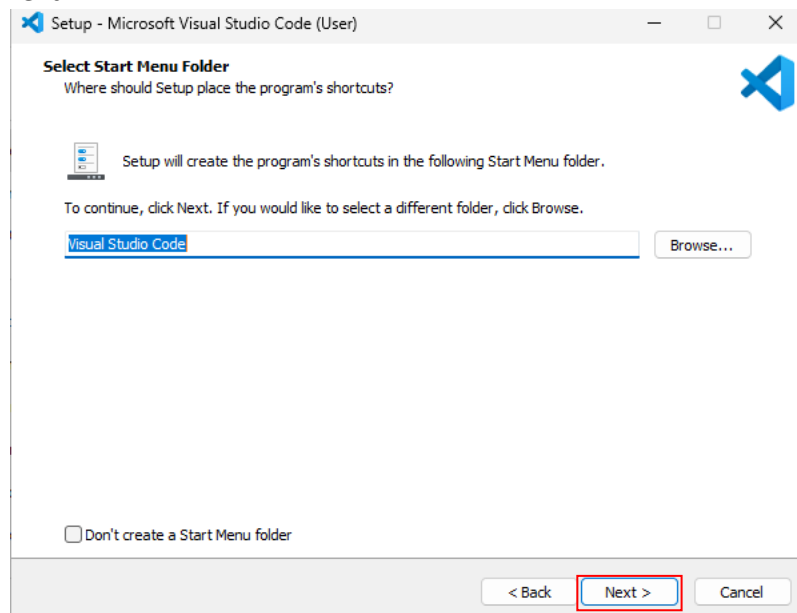
- Next, tick "Create a desktop icon", "Register Code as an editor for support ted file types" and "Add to PATH(requires shell restart)". Click "Next".
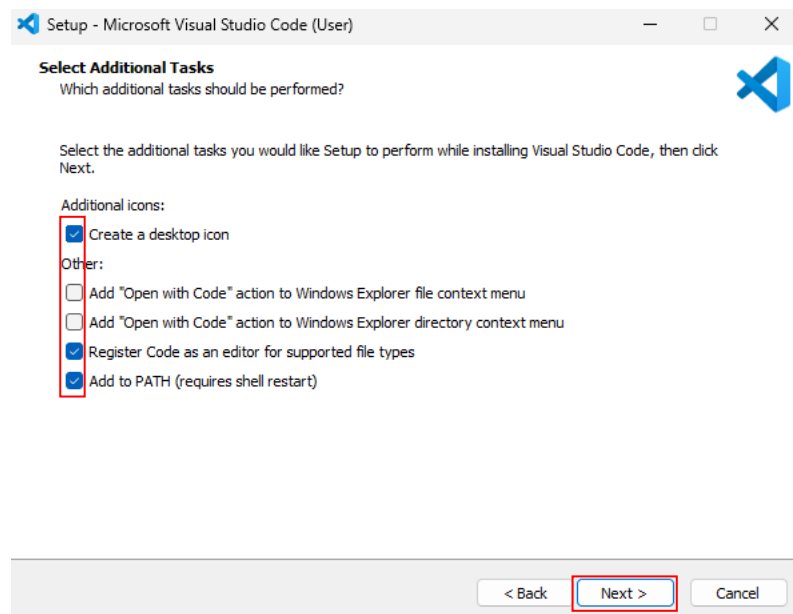
- Click "Install"
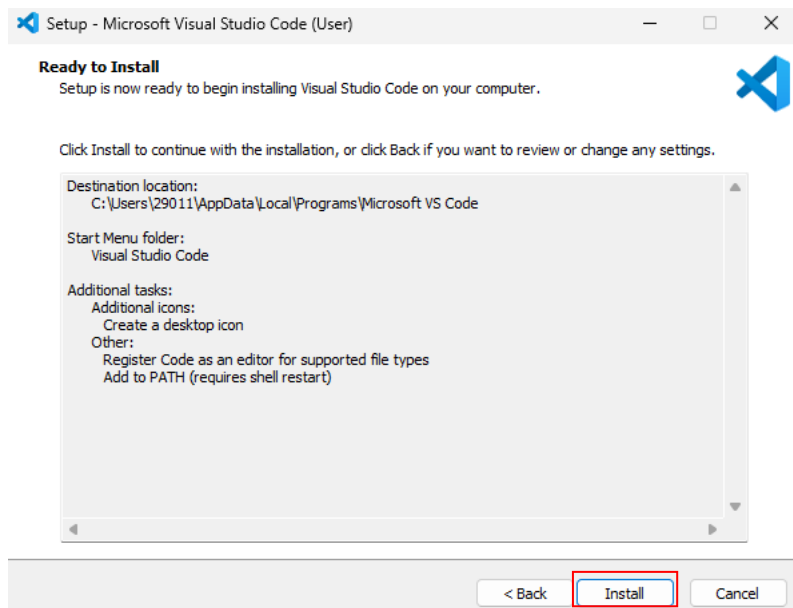
- Waiting for the installing progress to finish.

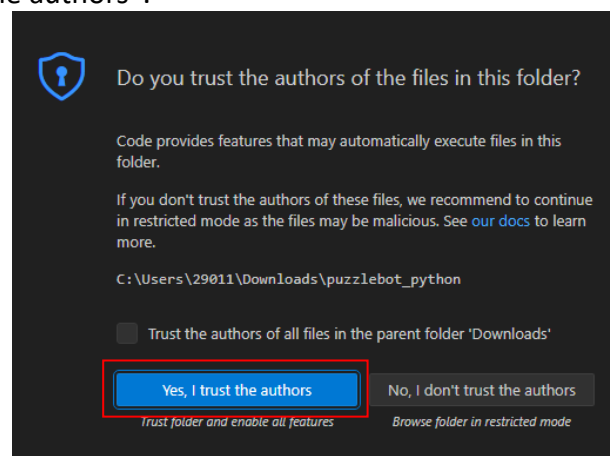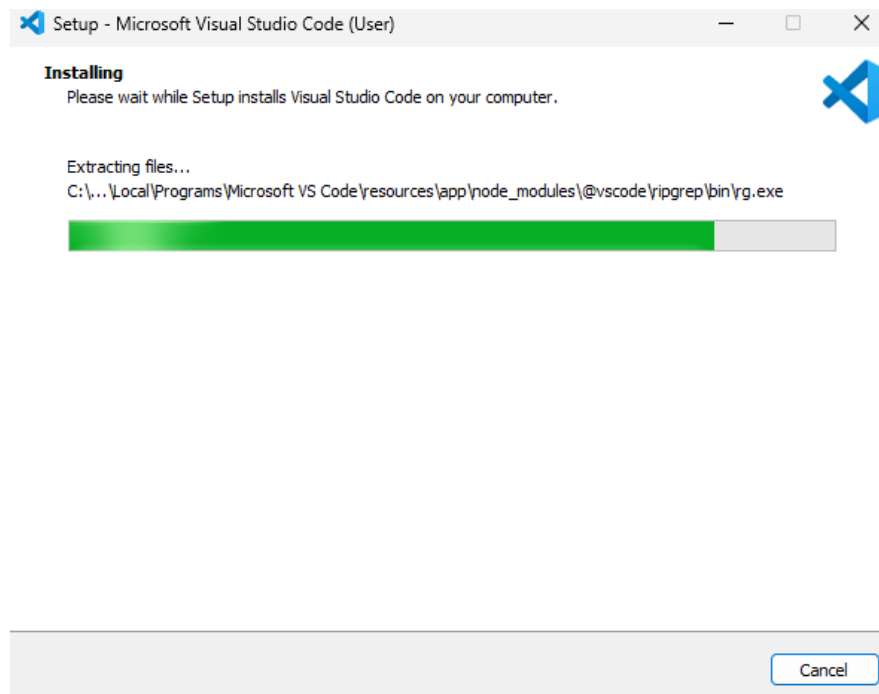- Tick "Launch Visual Studio Code", and Click "Finish".
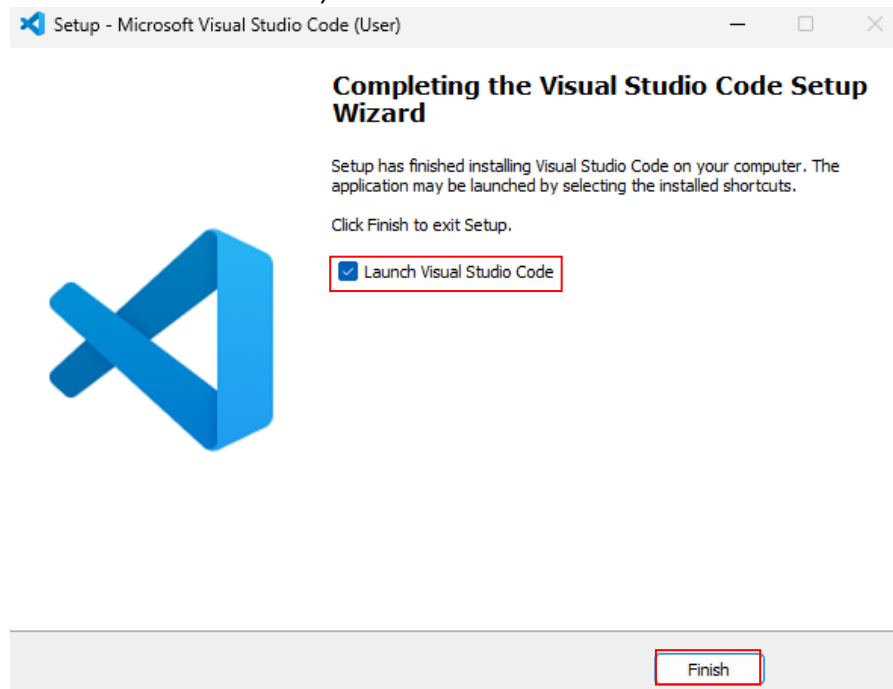
- Open Visual Studio Code and click the "Extensions" icon in the left side of the window(Or "Ctrl + Shift + X" on the keyboard). Type "Python" in the searching box and click "Install" to install extension for Python.
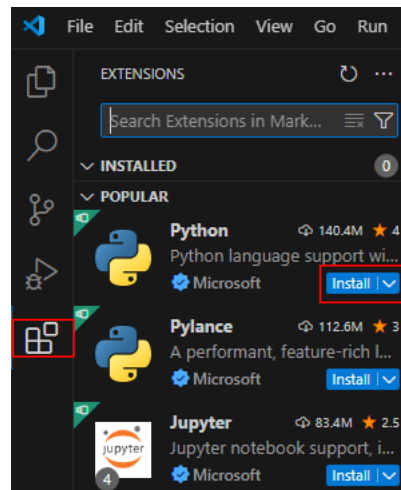
- Download and Unzip "puzzlebot_python.zip" from your Ultra. Click "File" and "Open Folder…" to find folder "puzzlebot_python" and click "OK" to open it in the workspace.
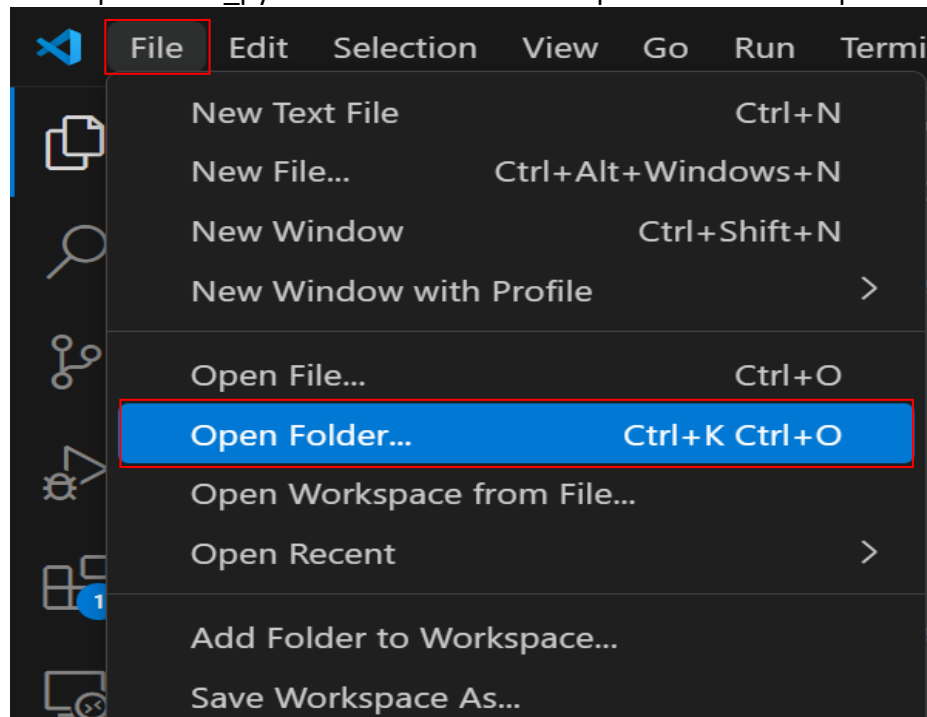
- Click "Yes, I trust the authors".
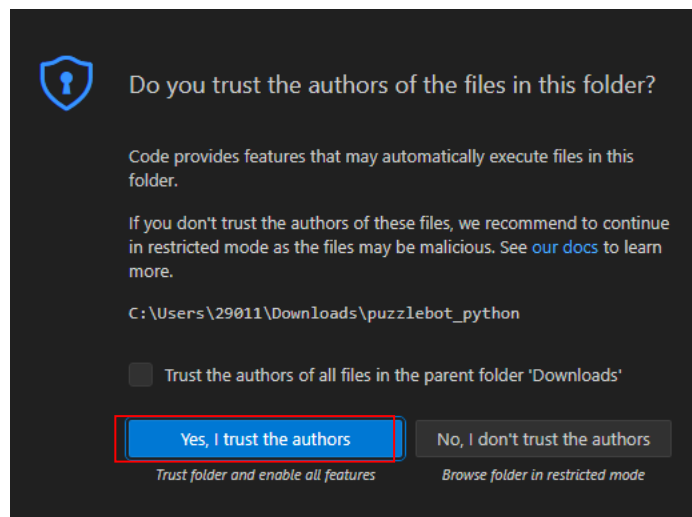
- Click "Terminal", and click "New Terminal".
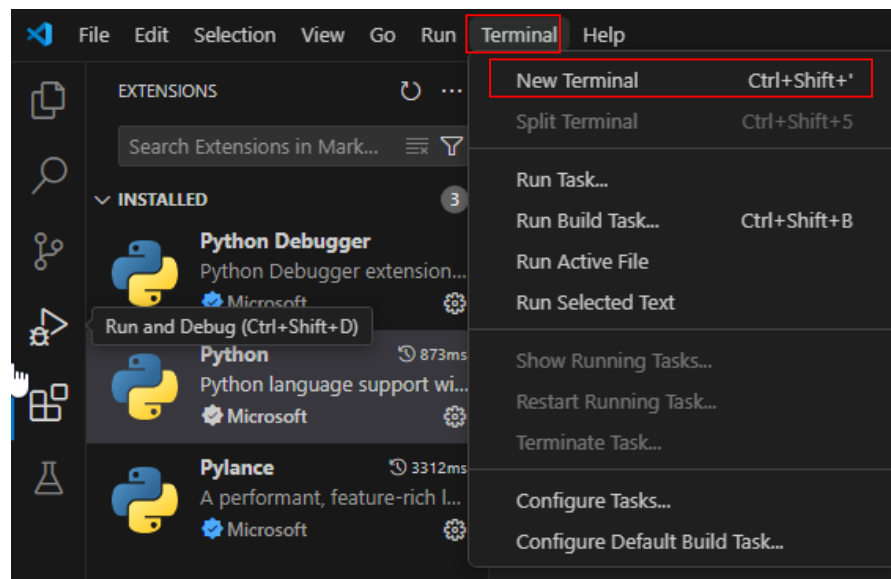
- Then you will find the Terminal window in the bottom.
- Type "python --version" in the Terminal, press "Enter". If python is installed correctly, you will see "Python 3.12.7" in the output.
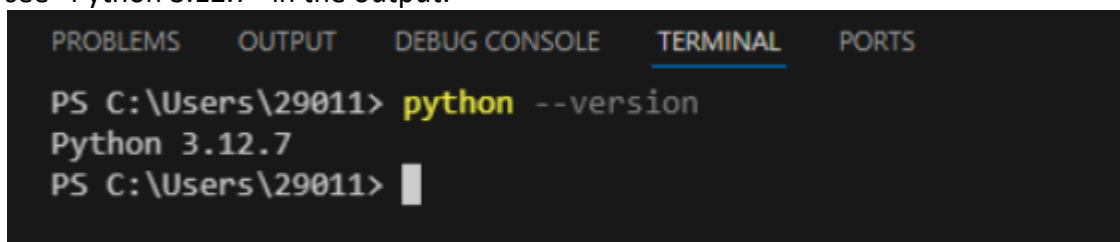
- Type "python -m venv myvenv" in the Terminal, press "Enter" to create a virtual environment named "myvenv".

- Then you will find an new folder named"myvenv" is created in the workspace.
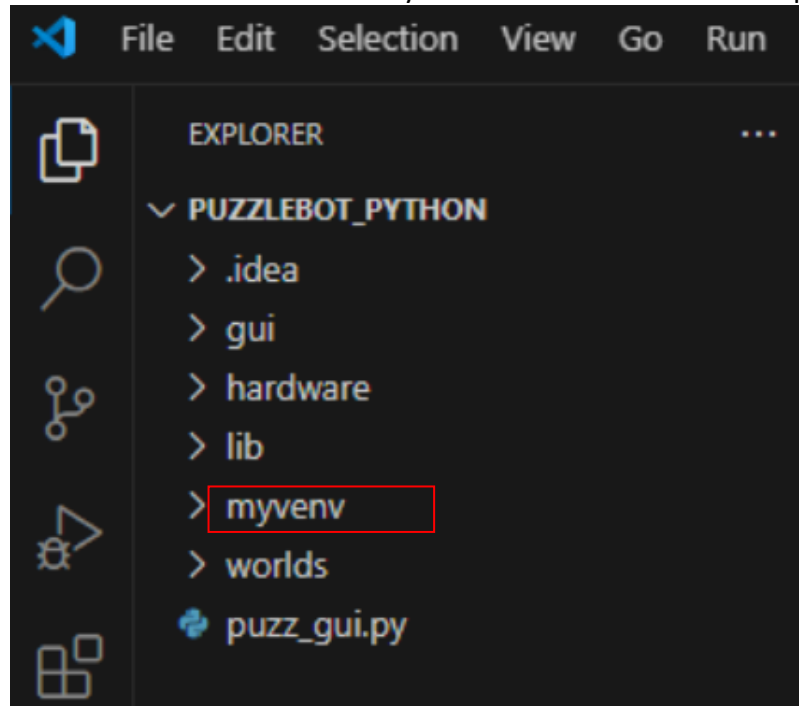
- Click "3.12.7 64-bit" in the bottom right.
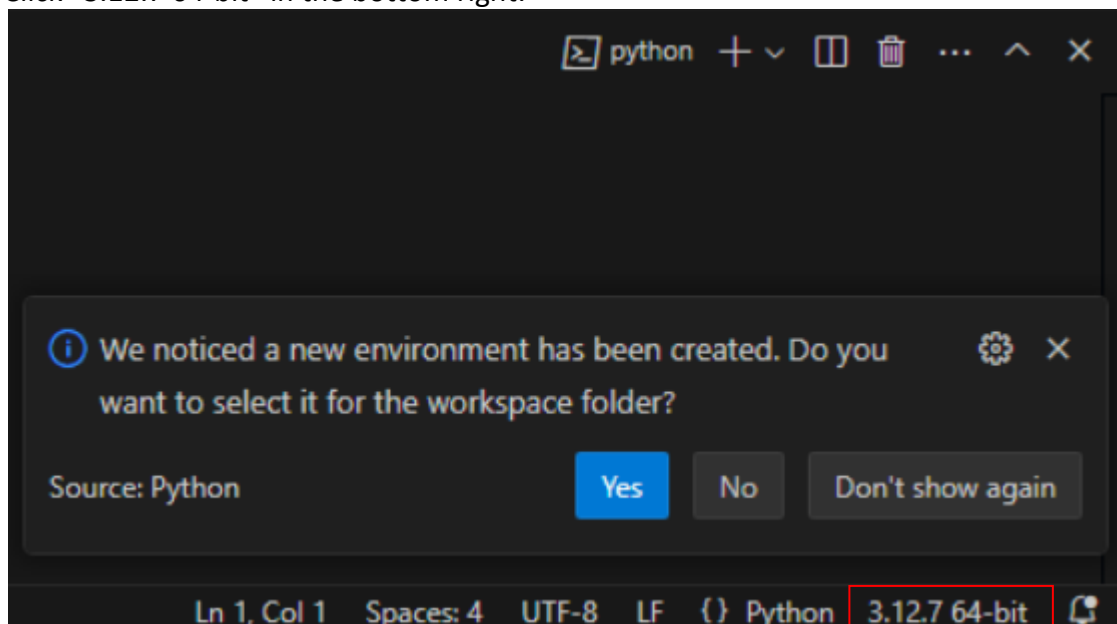
- Select "Python 3.12.7('myvenv':venv) .\myvenv\Scripts\python.exe".
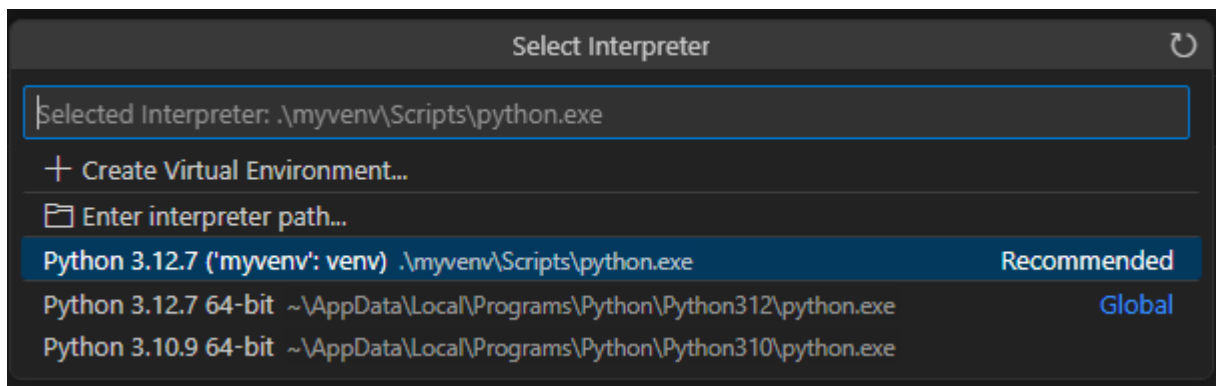
- Click "V" and click "Command Prompt" to open a new cmd terminal.
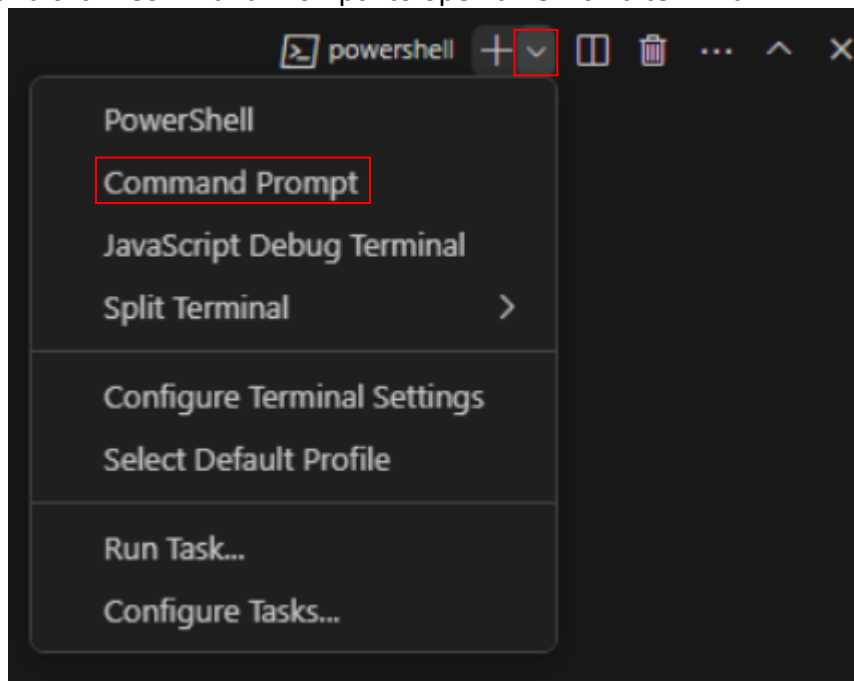
- Then you will activate the virtual environment named "myvenv".
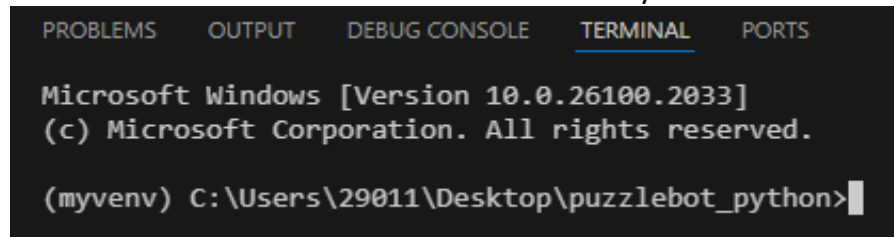
- If you can't activate the virtual environment correctly, type "Get-ExecutionPolicy" in the Terminal, press "Enter".

- If you will see "Restricted" in the output, type "Set-ExecutionPolicy -Scope Process -ExecutionPolicy RemoteSigned" in the Terminal, press "Enter".

- Type "pip install numpy matplotlib" in the Terminal, press "Enter" to install "numpy" and "matplotlib" in the virtual environment.

```
Collecting numpy
  Downloading numpy-1.24.4-cp38-cp38-win_amd64.whl (14.9 MB)
                                        | 14.9 MB 3.3 MB/s
Collecting matplotlib
  Downloading matplotlib-3.7.5-cp38-cp38-win_amd64.whl (7.5 MB)
                                        | 7.5 MB ...
Collecting contourpy>=1.0.1
  Downloading contourpy-1.1.1-cp38-cp38-win_amd64.whl (477 kB)
                                        | 477 kB ...
Collecting packaging>=20.0
  Downloading packaging-24.1-py3-none-any.whl (53 kB)
                                        | 53 kB 1.0 MB/s
Collecting fonttools>=4.22.0
  Downloading fonttools-4.54.1-cp38-cp38-win_amd64.whl (1.5 MB)
                                        | 1.5 MB ...
Collecting cycler>=0.10
  Downloading cycler-0.12.1-py3-none-any.whl (8.3 kB)
Collecting pyparsing>=2.3.1
  Downloading pyparsing-3.1.4-py3-none-any.whl (104 kB)
                                        | 104 kB ...
Collecting importlib-resources>=3.2.0
  Downloading importlib_resources-6.4.5-py3-none-any.whl (36 kB)
Collecting pillow>=6.2.0
  Downloading pillow-10.4.0-cp38-cp38-win_amd64.whl (2.6 MB)
                                        | 2.6 MB ...
Collecting kiwisolver>=1.0.1
  Downloading kiwisolver-1.4.7-cp38-cp38-win_amd64.whl (55 kB)
                                        | 55 kB ...
Collecting python-dateutil>=2.7
  Downloading python_dateutil-2.9.0.post0-py2.py3-none-any.whl (229 kB)
                                        | 229 kB ...
Collecting zipp>=3.1.0
  Downloading zipp-3.20.2-py3-none-any.whl (9.2 kB)
Collecting six>=1.5
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Installing collected packages: zipp, six, numpy, python-dateutil, pyparsing, pillow, packaging, kiwisolver, importlib-resources, fonttools, cycler, contourpy, matplotlib
```

- Type "pip list" in the Terminal, press "Enter", If both "numpy" and "matplotlib" are installed correctly, you will see all packages in the output.

```
(myvenv) C:\Users\29011\Desktop\puzzlebot_python>pip list
Package          Version
---------------- -----------
contourpy        1.3.0
cycler           0.12.1
fonttools        4.54.1
kiwisolver       1.4.7
matplotlib       3.9.2
msvc_runtime     14.40.33807
numpy            2.1.2
packaging        24.1
pillow           11.0.0
pip              24.2
pyparsing        3.2.0
python-dateutil  2.9.0.post0
six              1.16.0
```

- Run "puzz_gui.py"
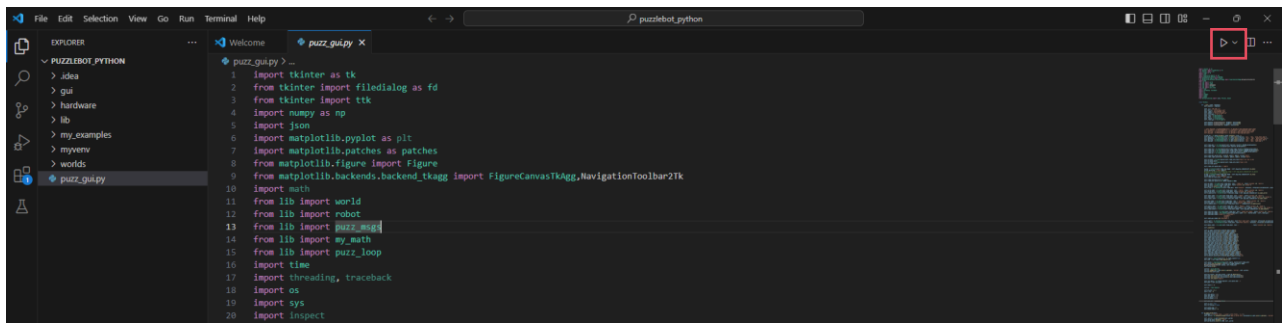
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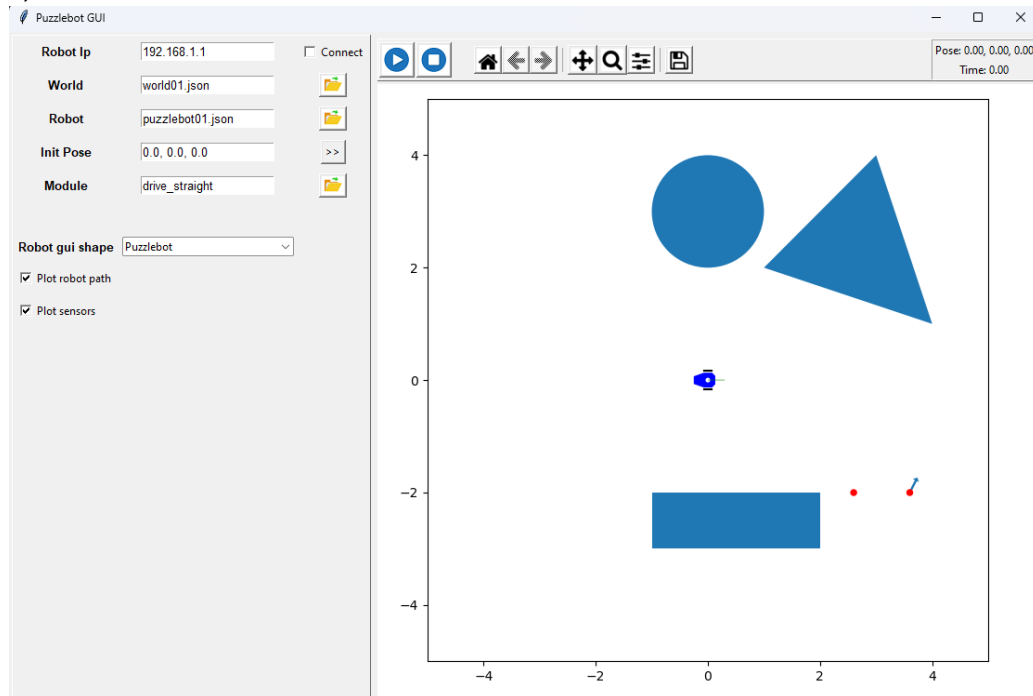
C. Personal laptop (Mac)

a) Instructions

- Download Python from https://www.python.org/ftp/python/3.12.7/python-3.12.7-macos11.pkg.

- Follow the instructions as in the Windows Part for Python.

- Download and install Visual Studio Code from:
  https://go.microsoft.com/fwlink/?LinkID=534106

- Follow the instructions as in the Windows Part for VSCode.

- After selecting your python virtual environment as interpreter, you can open a new terminal by pressing " Ctrl+Shift+` " or:
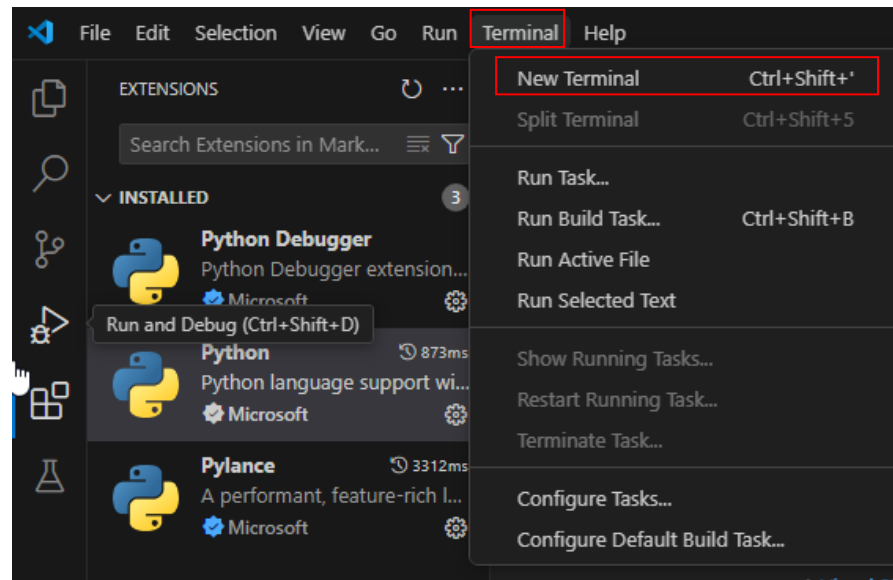
- Then you will see the virtual environment is already activated in the terminal.

- After installing the numpy and matplotlib by typing "pip install numpy matplotlib", run "puzz_gui.py"