

# 7 steps of WPC Python project workflow

WPC Systems Ltd.

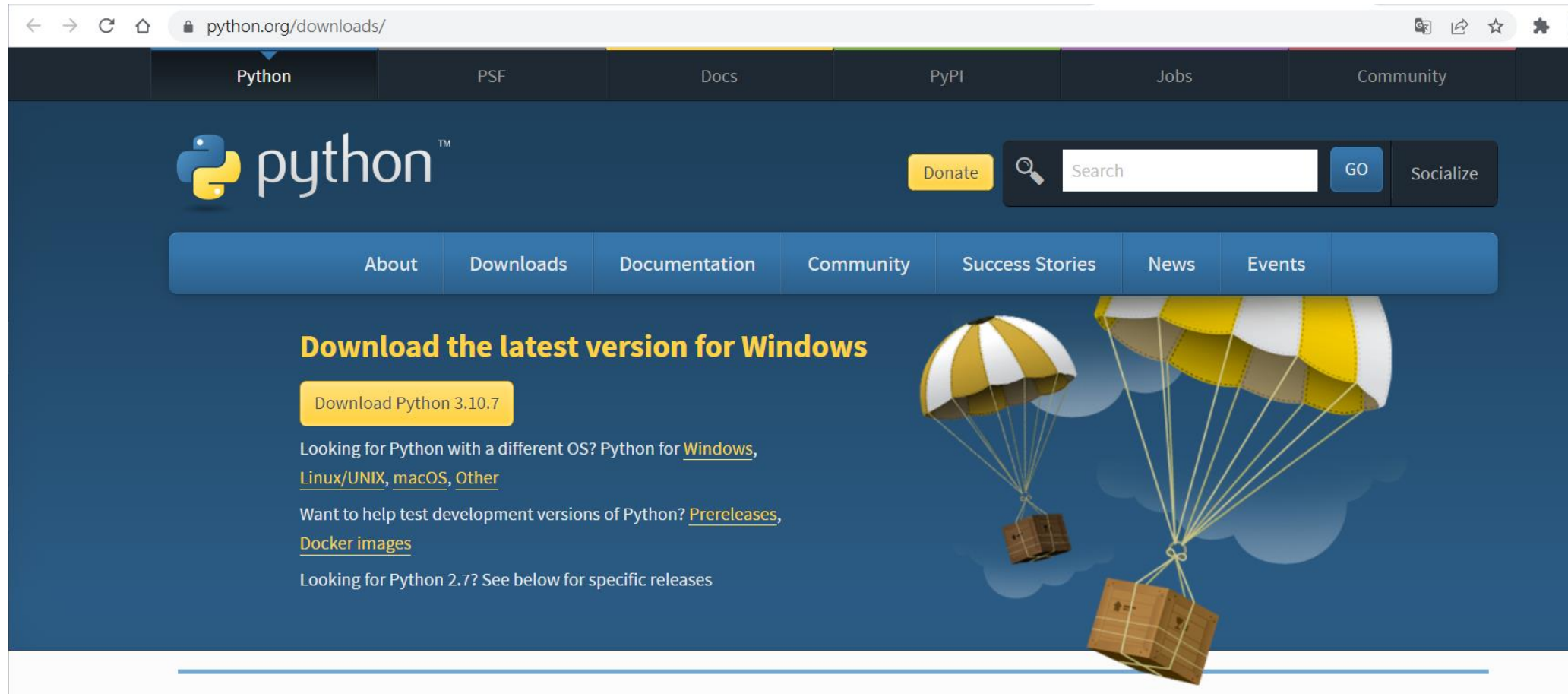
Justin Wu

2022-09-14

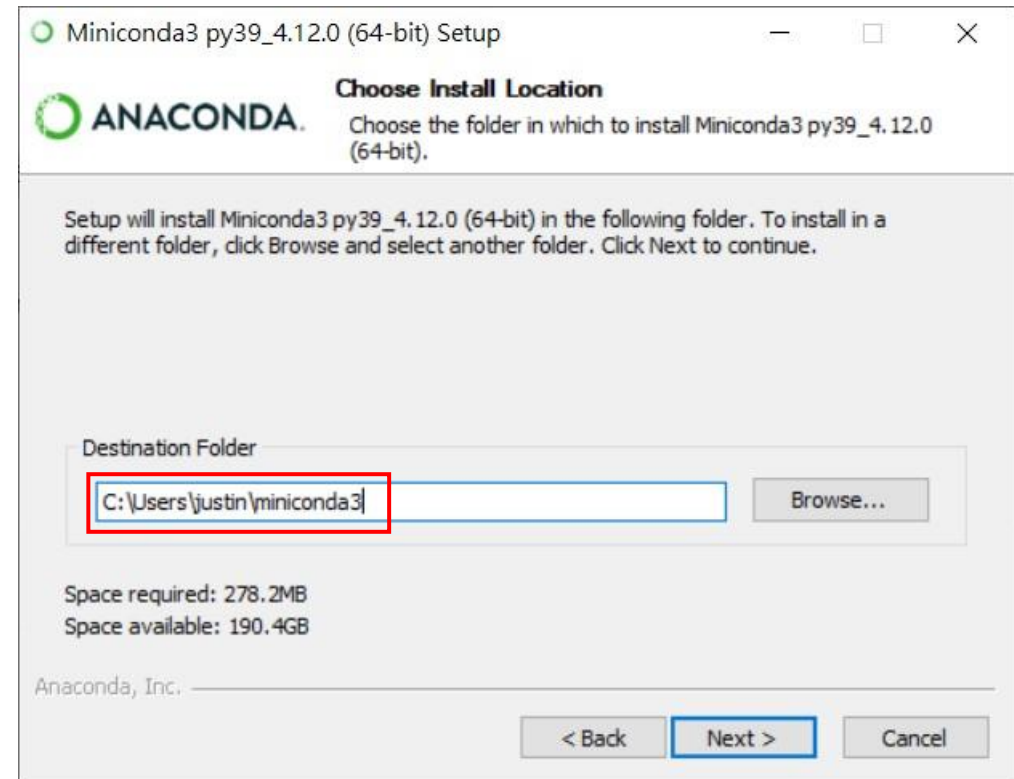
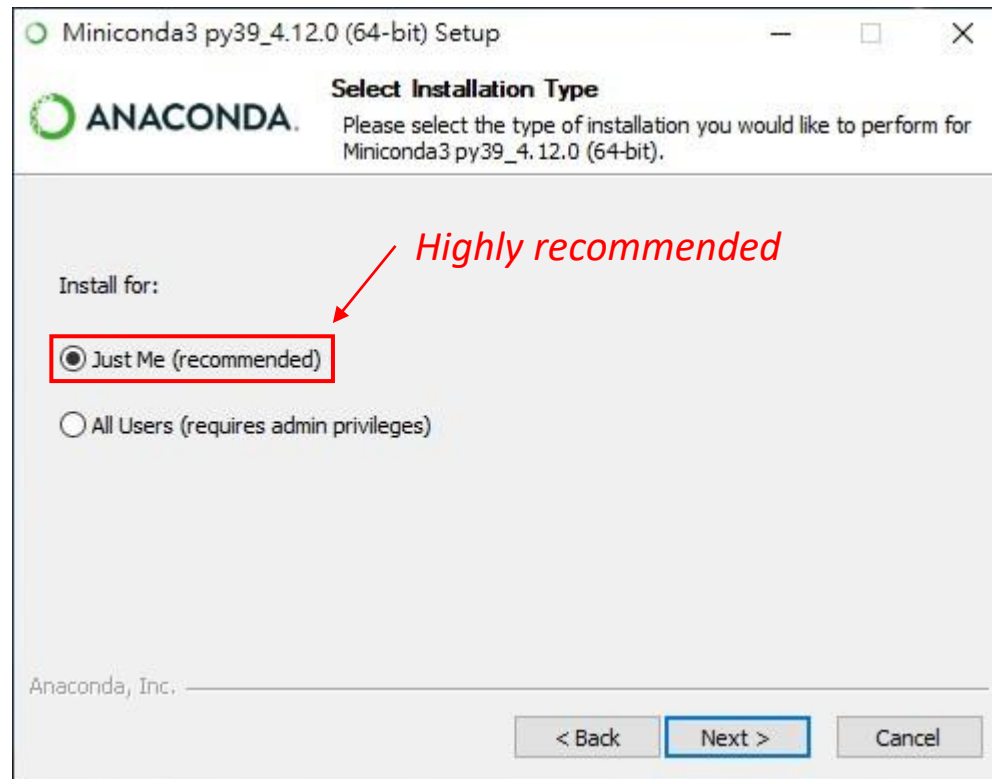
# 7 steps of WPC Python project workflow

1. Download and install Python 3.10 and Miniconda
2. Create virtual environment <myenv310> for Python 3.10
  - > conda create --name *myenv310* python=3.10
3. Enter virtual environment <myenv310>
  - > conda activate *myenv310*
4. Install wpcsys package (only for win10 x64) via pip
  - > pip install wpcsys
5. Download example code from Github
  - [https://github.com/WPC-Systems-Ltd/WPC\\_Python\\_driver\\_release](https://github.com/WPC-Systems-Ltd/WPC_Python_driver_release)
6. Get one WPC product and run example code under example folder
  - [www.wpc.com.tw](http://www.wpc.com.tw)
  - > python *main.py*
7. Build your own executable(EXE)
  - > wpcEXEbuild *main.py*

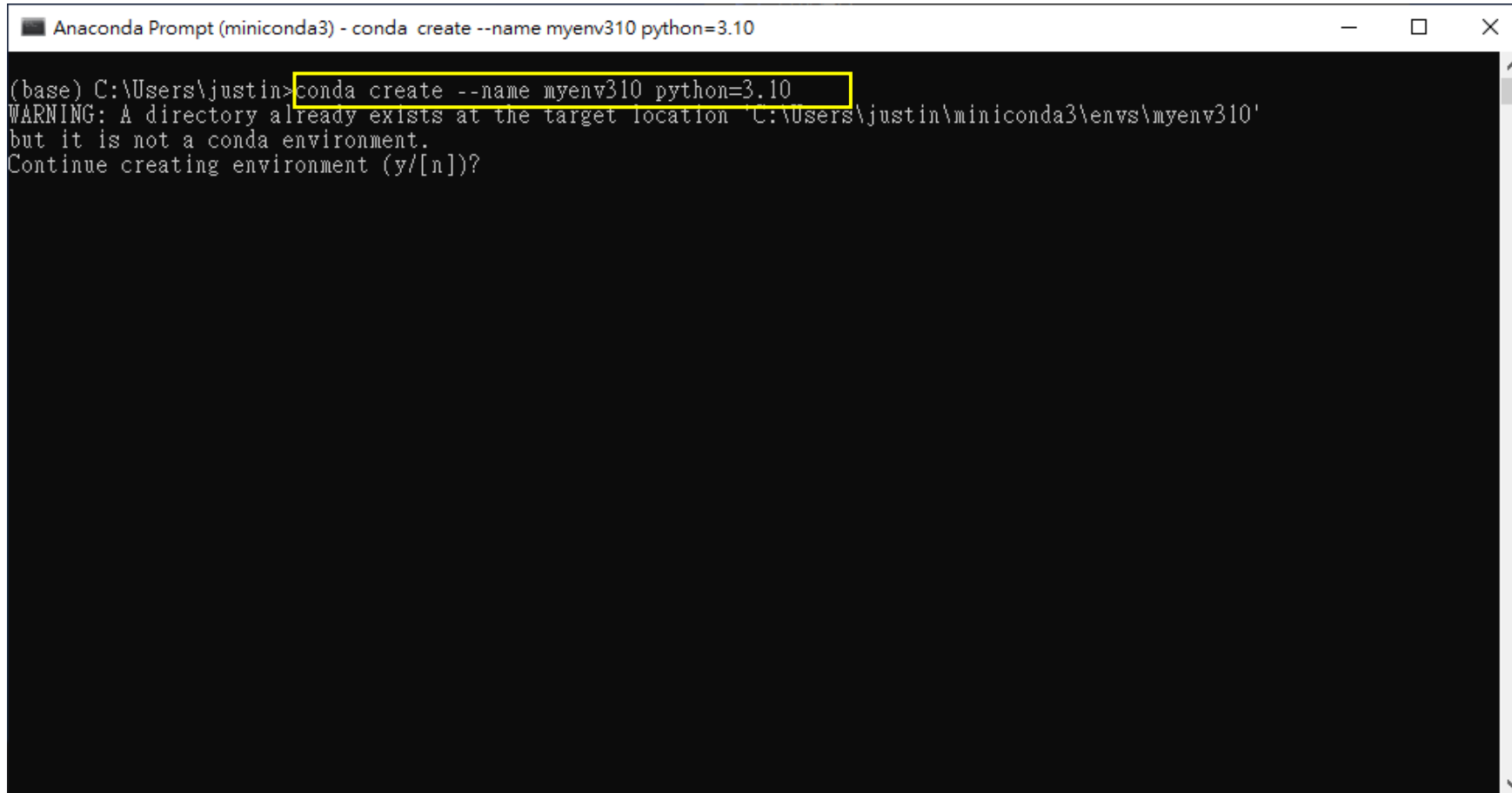
# 1.1 Download and install Python 3.10



# 1.2 Download and install Miniconda

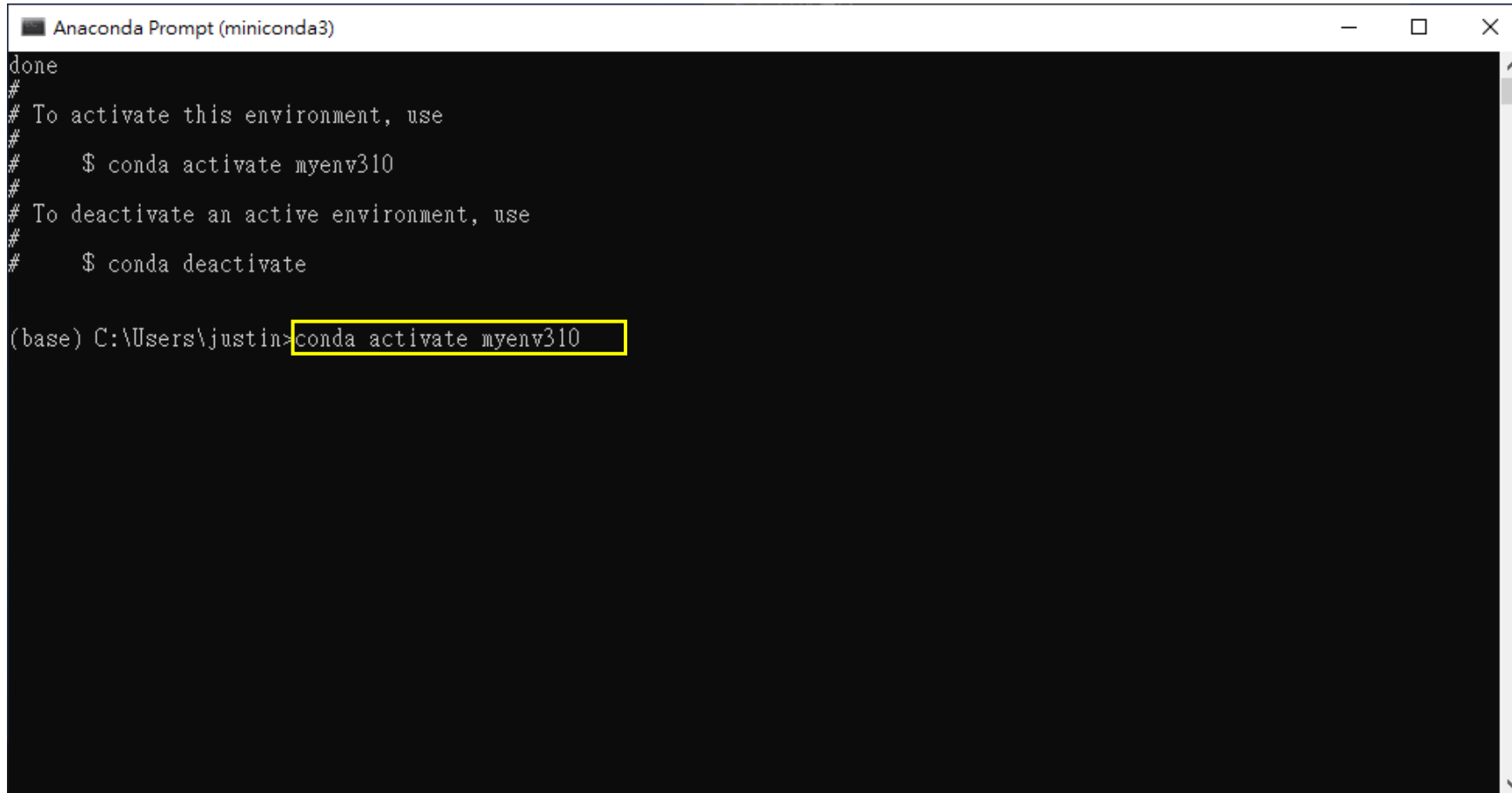


## 2. Create virtual environment <myenv310> for Python 3.10

A screenshot of the Anaconda Prompt terminal window. The title bar reads "Anaconda Prompt (miniconda3) - conda create --name myenv310 python=3.10". The terminal shows the command `conda create --name myenv310 python=3.10` being entered. Below the command, a warning message is displayed: "WARNING: A directory already exists at the target location 'C:\Users\justin\miniconda3\envs\myenv310' but it is not a conda environment. Continue creating environment (y/[n])?". The command and the warning message are highlighted with a yellow box.

```
Anaconda Prompt (miniconda3) - conda create --name myenv310 python=3.10
(base) C:\Users\justin>conda create --name myenv310 python=3.10
WARNING: A directory already exists at the target location 'C:\Users\justin\miniconda3\envs\myenv310'
but it is not a conda environment.
Continue creating environment (y/[n])?
```

### 3. Enter virtual environment <myenv310>



```
Anaconda Prompt (miniconda3)
done
#
# To activate this environment, use
#
#   $ conda activate myenv310
#
# To deactivate an active environment, use
#
#   $ conda deactivate

(base) C:\Users\justin>conda activate myenv310
```

## 4. Install wpcsys package via pip

```
conda activate myenv310
done
#
# To activate this environment, use
#
#   $ conda activate myenv310
#
# To deactivate an active environment, use
#
#   $ conda deactivate

(base) C:\Users\justin>conda activate myenv310
(myenv310) C:\Users\justin>pip install wpcsys
Collecting wpcsys
  Using cached wpcsys-0.2.3.2-py2.py3-none-any.whl (517 kB)
Collecting qasync>=0.23.0
  Using cached qasync-0.23.0-py3-none-any.whl (13 kB)
Collecting matplotlib>=3.5.2
  Using cached matplotlib-3.5.3-cp310-cp310-win_amd64.whl (7.2 MB)
Collecting PyQt5-sip>=12.11.0
  Using cached PyQt5_sip-12.11.0-cp310-cp310-win_amd64.whl (78 kB)
Collecting numpy>=1.23.0
  Using cached numpy-1.23.2-cp310-cp310-win_amd64.whl (14.6 MB)
Collecting PyQt5-Qt5>=5.15.2
  Using cached PyQt5_Qt5-5.15.2-py3-none-win_amd64.whl (50.1 MB)
Collecting wpcEXEbuild>=0.0.1
  Using cached wpcEXEbuild-0.0.1-py2.py3-none-any.whl (3.3 kB)
Collecting PyQt5>=5.15.7
  Using cached PyQt5-5.15.7-cp37-abi3-win_amd64.whl (6.8 MB)
Collecting pyusb>=1.2.1
  Using cached pyusb-1.2.1-py3-none-any.whl (58 kB)
Collecting pillow>=6.2.0
```

# Check driver packages installed

```

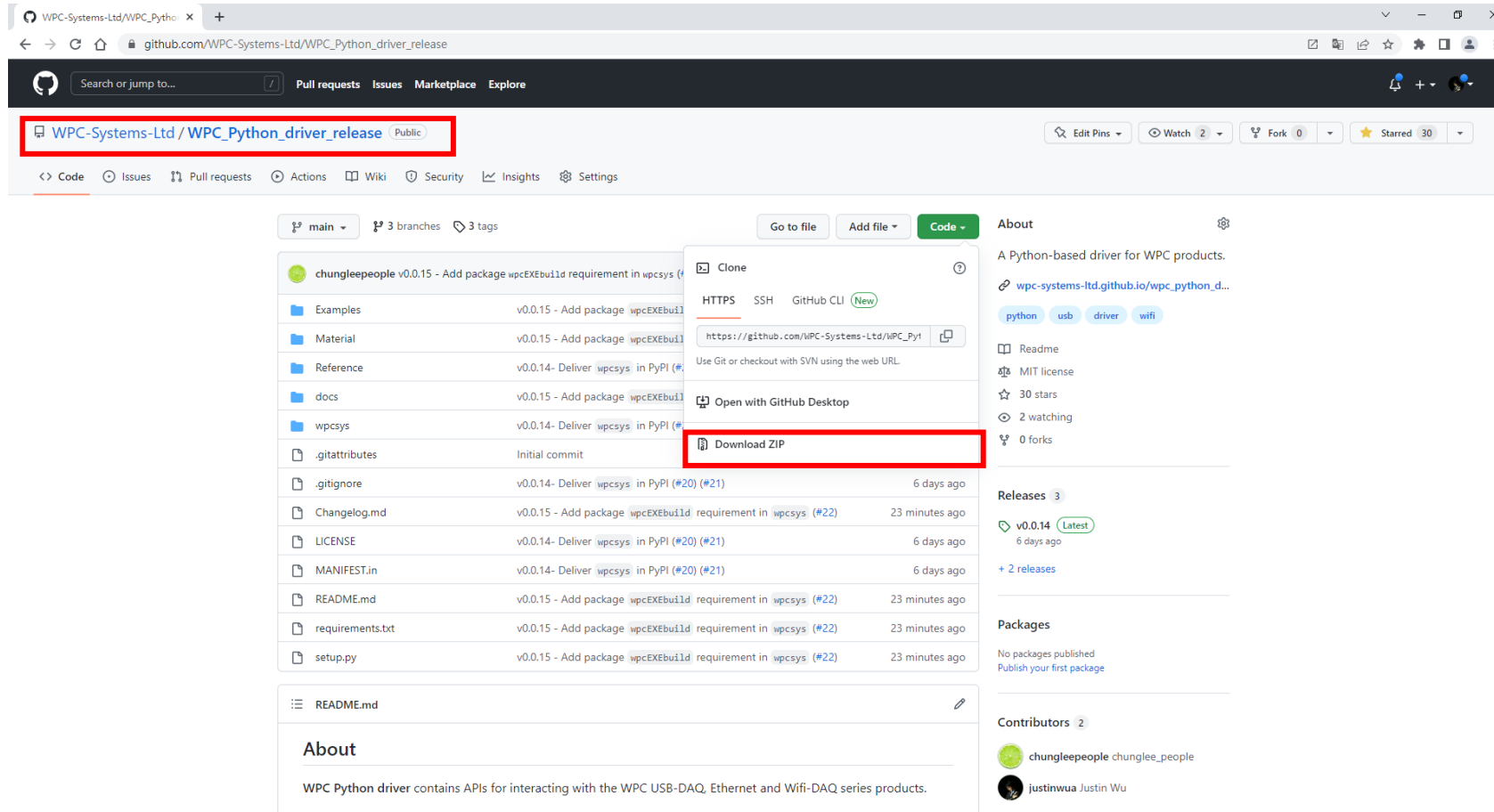
Anaconda Prompt (miniconda3)
(myenv310) C:\Users\justin> pip list -v
Package            Version Location                               Installer
-----
altgraph           0.17.2  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
certifi            2022.6.15 c:\users\justin\miniconda3\envs\myenv310\lib\site-packages conda
cyclur             0.11.0  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
fonttools         4.37.1  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
future            0.18.2  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
kiwisolver        1.4.4   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
matplotlib        3.5.3   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
numpy             1.23.2  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
packaging         21.3    c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
pefile            2022.5.30 c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
Pillow            9.2.0   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
pip               22.1.2  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages
pyinstaller       5.3     c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
pyinstaller-hooks-contrib 2022.10 c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
pyparsing         3.0.9   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
PyQt5             5.15.7  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
PyQt5-Qt5        5.15.2  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
PyQt5-sip        12.11.0 c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
python-dateutil  2.8.2   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
pyusb             1.2.1   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
pywin32-ctypes   0.2.0   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
qasync            0.23.0  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
setuptools        63.4.1  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages
six               1.16.0  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
wheel             0.37.1  c:\users\justin\miniconda3\envs\myenv310\lib\site-packages
wincertstore     0.2     c:\users\justin\miniconda3\envs\myenv310\lib\site-packages
wpcEXEbuild      0.0.1   c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
wpcsys           0.2.3.2 c:\users\justin\miniconda3\envs\myenv310\lib\site-packages pip
(myenv310) C:\Users\justin>

```



# 5. Download example code from Github

[https://github.com/WPC-Systems-Ltd/WPC\\_Python\\_driver\\_release](https://github.com/WPC-Systems-Ltd/WPC_Python_driver_release)




The screenshot shows the GitHub interface for the repository `WPC-Systems-Ltd/WPC_Python_driver_release`. The repository name is highlighted in a red box. A 'Code' dropdown menu is open, showing options for cloning (HTTPS, SSH, GitHub CLI) and downloading the source code as a ZIP file. The 'Download ZIP' option is highlighted in a red box. The repository content shows a file tree with folders like `Examples`, `Material`, `Reference`, `docs`, and `wpcsys`, and various files including `.gitattributes`, `.gitignore`, `Changelog.md`, `LICENSE`, `MANIFEST.in`, `README.md`, `requirements.txt`, and `setup.py`. The right sidebar shows repository statistics and contributors.

# 6. Get one WPC product and run example code

Anaconda Prompt (miniconda3) - python main.py

```
(base) C:\Users\justin>conda activate myenv310
(myenv310) C:\Users\justin>d:
(myenv310) D:\>cd D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input
(myenv310) D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input>python main.py
Opened handle (Wifi-DAQ-E3-A)
WPC Python device driver - Version 0.2.3
D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input\main.py:243: UserWarning: Attempting to set identical left == right == 0 results in singular transformations; automatically expanding.
  self.ui.MplWidget.canvas.axes.set_xlim(x_min, x_max)
```



The GUI window, titled 'Example\_analog\_input', contains the following sections:

- Connection Setting:** IP: [192.168.5.79], buttons for Connect, Disconnect, Start, and Stop.
- Acquisition Setting:** Acq. mode: On Demand, Sampling rate (Hz): 1000, Num of sample (pts): 200.
- Plot Setting:** Y scale max (V): 10, Y scale min (V): -10, checkboxes for CH0 through CH7.
- Plot Area:** A graph with 'Voltage (V)' on the y-axis (ranging from -10.0 to 10.0) and 'Time (s)' on the x-axis. A legend on the right lists channels ch0 through ch7.



# 7. Build your own executable(EXE)

```
選取 Anaconda Prompt (miniconda3) - wpcEXEbuild main.py

(base) C:\Users\justin>conda activate myenv310
(myenv310) C:\Users\justin>d:
(myenv310) D:\>cd D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input
(myenv310) D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input>dir
磁碟區 D 中的磁碟是 DATA_DRIVE1
磁碟區字號: 06C5-E6B4

D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input 的目錄
09/07/2022  02:29 PM    <DIR>          .
09/07/2022  02:29 PM    <DIR>          ..
09/05/2022  02:12 PM          10,436 main.py
09/05/2022  02:12 PM    <DIR>          Material
08/24/2022  05:40 PM          1,563 mplwidget.py
08/24/2022  05:40 PM    <DIR>          UI_design
                2 個檔案          11,999 位元組
                4 個目錄          46,938,734,592 位元組可用

(myenv310) D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input>wpcEXEbuild main.py
395 INFO: PyInstaller: 5.3
396 INFO: Python: 3.10.4 (conda)
404 INFO: Platform: Windows-10-10.0.19044-SP0
739 INFO: wrote D:\GitHub Repo\WPC_Python_driver_release\examples\GUI\AIO\Example_analog_input\main.spec
742 INFO: UPX is not available.
747 INFO: Extending PYTHONPATH with paths
['D:\GitHub
```

# main.exe will appear in “dist” folder

› DATADRIVE1 (D:) › GitHub Repo › WPC\_Python\_driver\_release › examples › GUI › AIO › Example\_analog\_input

名稱	修改日期	類型	大小
__pycache__	9/7/2022 10:10 PM	檔案資料夾	
build	9/7/2022 5:52 PM	檔案資料夾	
dist	9/7/2022 5:59 PM	檔案資料夾	
Material	9/5/2022 2:12 PM	檔案資料夾	
UI_design	8/24/2022 5:40 PM	檔案資料夾	
main.py	9/5/2022 2:12 PM	JetBrains PyChar...	11 KB
main.spec	9/7/2022 5:52 PM	SPEC 檔案	1 KB
mplwidget.py	8/24/2022 5:40 PM	JetBrains PyChar...	2 KB

