How to use GUI to control Robotic Arm

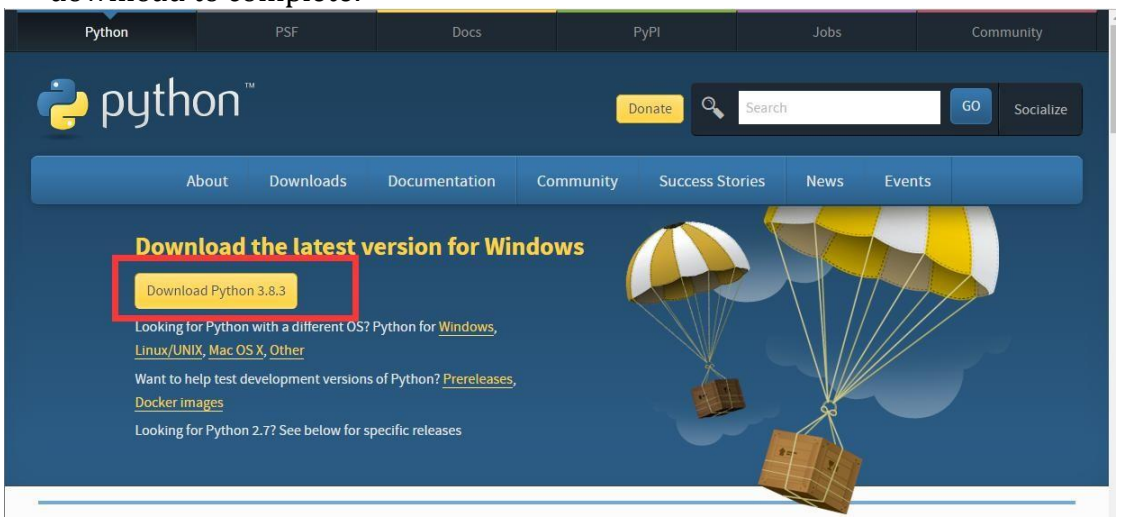
In this lesson, you will learn how to control the movement of the robotic arm with the GUI application.

1. Downloading and installing Python

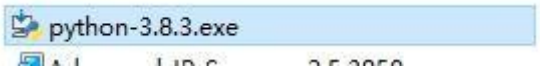
(1) Log in to the official website by browser:

https://www.python.org/downloads/

(2) Click the "Download Python 3.8.3" button to download and wait for the download to complete:

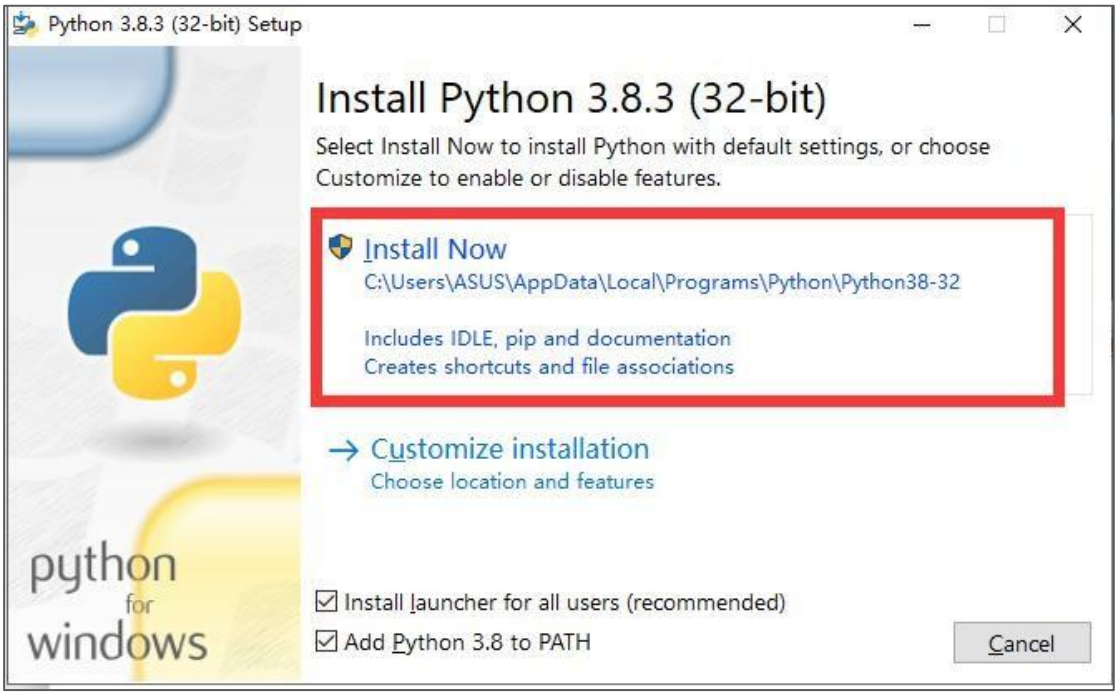


(3) Open the downloaded file, double-click to open it to install:

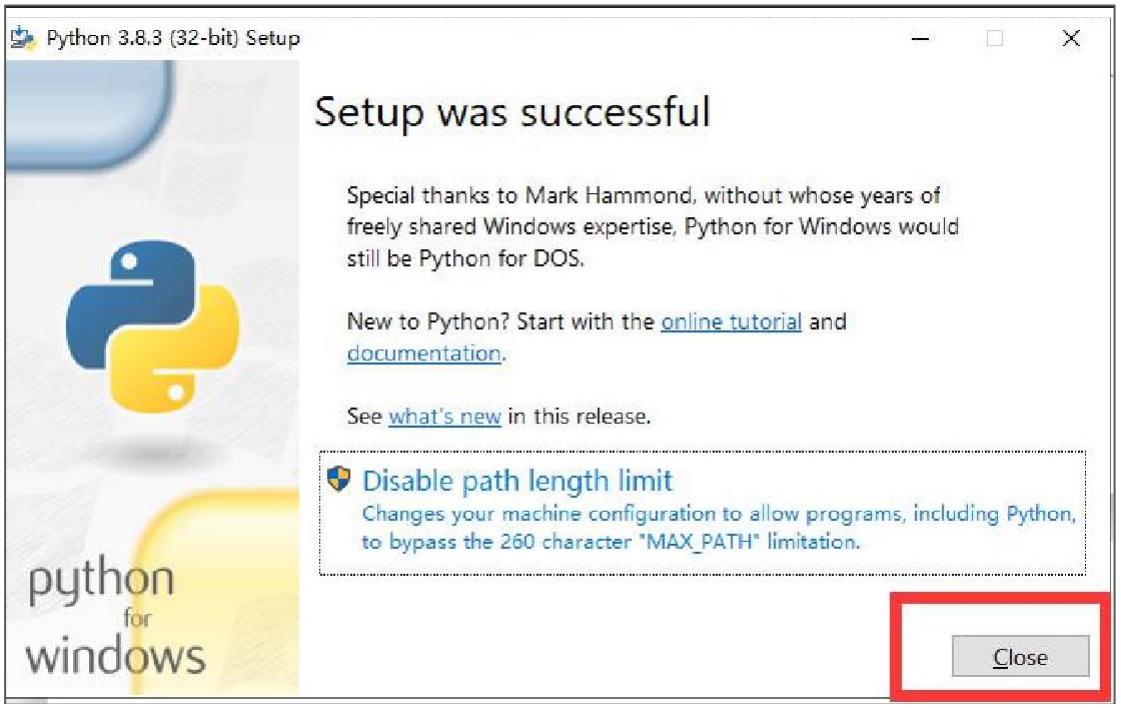


(4) Select the "Add Python 3.8 to PATH" option:

(5) Then click "Install Now" to install.



(6) Wait for the Python installation to complete and click "Close" to close.

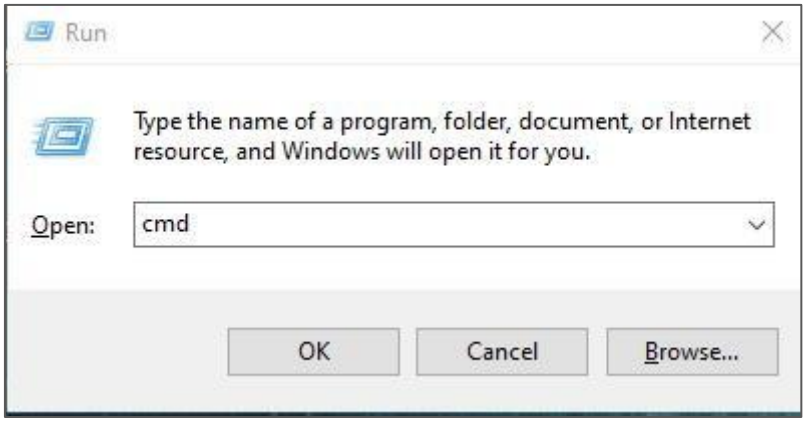


2. Installing pySerial

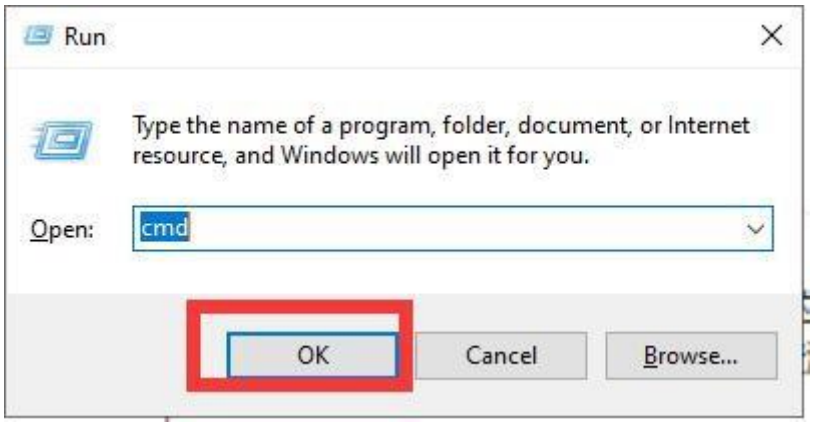
pySerial encapsulates the serial communication module, supporting Linux, Windows, BSD (may support all operating systems that support POSIX), Jython (Java) and IconPython (.NET and Mono). The pySerial module encapsulates access to the serial port. The port number starts from 0 by default. There is no need to know the port name in the program. APIs like file read and write, read, write(readline, etc. are also supported), support binary transmission, no null elimination, no cr-lf conversion, all programs are all done by Python, and do not depend on other packages except the standard library, except pywin32 (windows), JavaComm (Jython). POSIX (Linux, BSD) only depends on the Python standard library.

Before downloading and installing, you can connect the Adeept Arm Drive Board development board to your computer.

(1) Press Win+R shortcut key to open CMD under Windows 10:



(2) Click "OK":



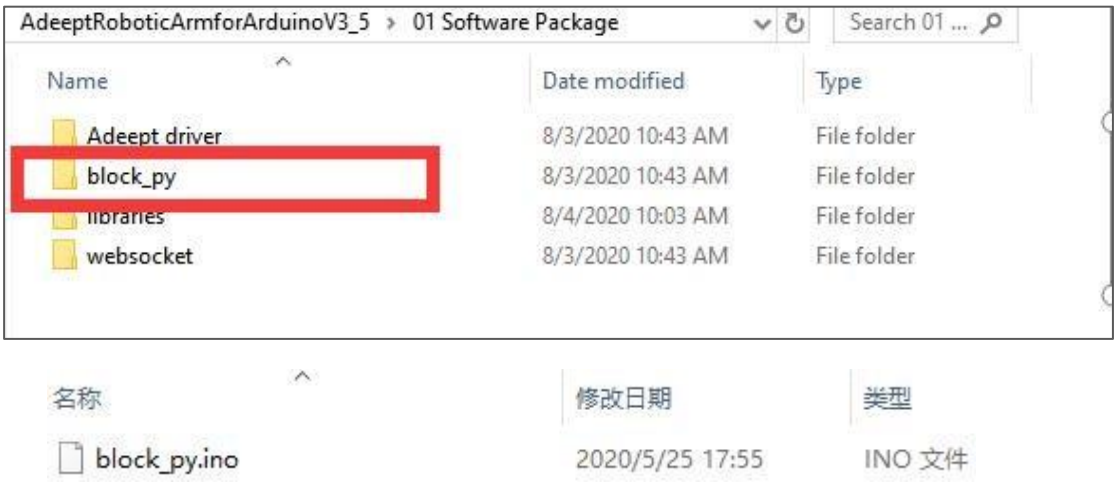
(3) Enter the command in the window:

pip install pySerial

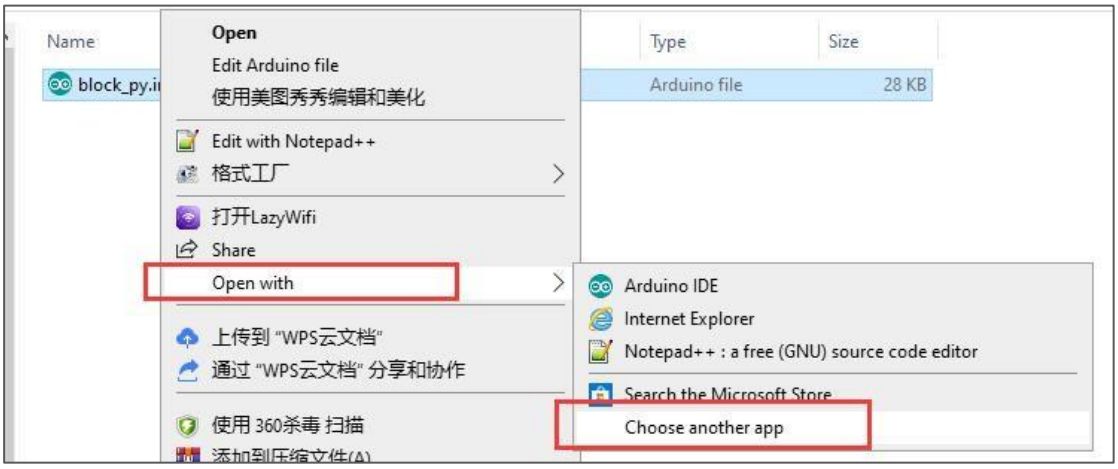
Press the Enter and wait for the installation to complete.

3. Opening the GUI interface

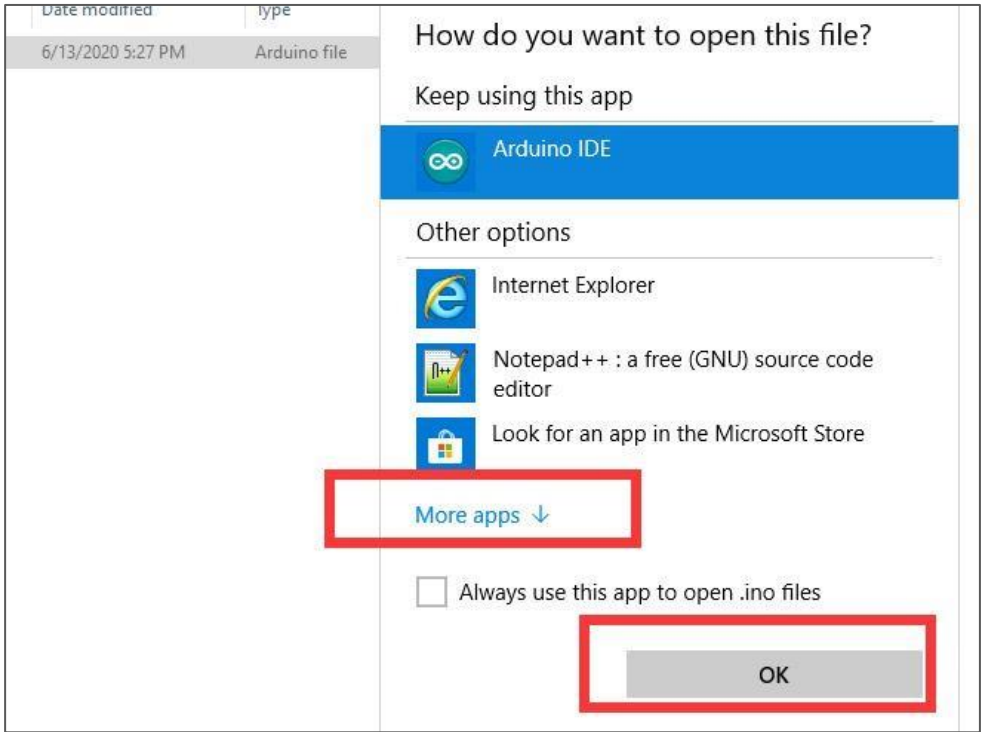
(1) Enter **the Package of Documentation** (Reference: Chapter 4, near Page 12 of this section, subsection 5, step (4)) -> "01 Software Package" -> "block_py" provided by Adeept for users, and find this file: "block_py.ino".



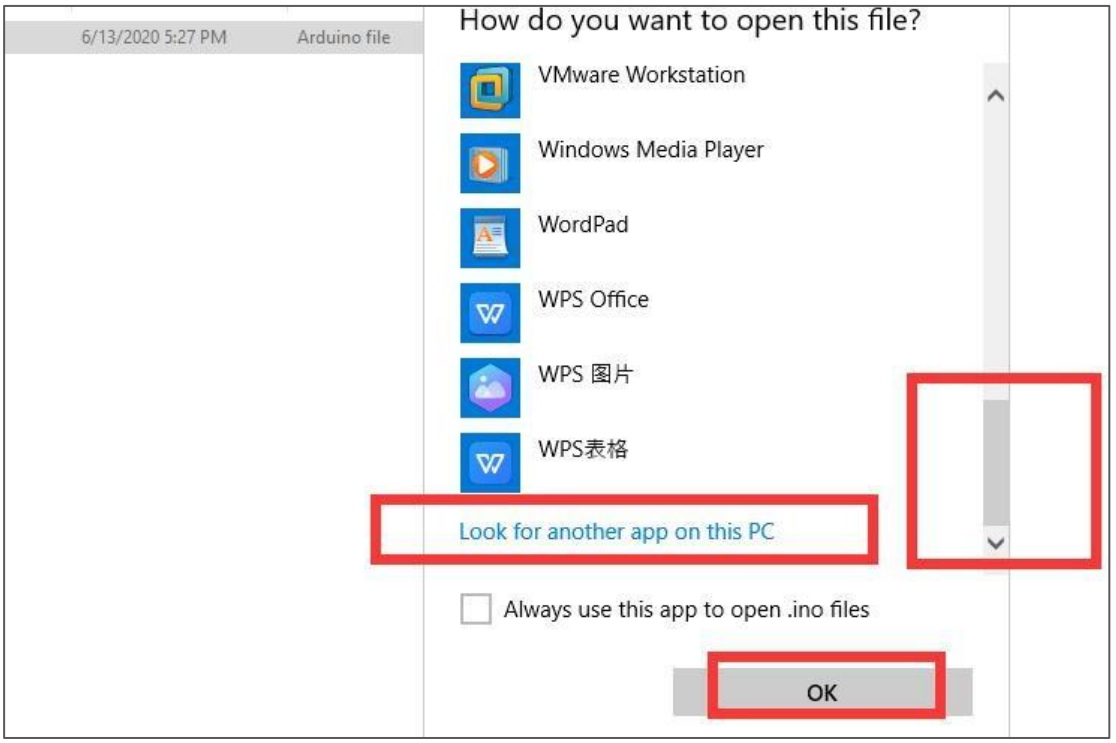
(2) Then right-click the file: "block_py.ino". Select "Open with" -> "Choose another app".



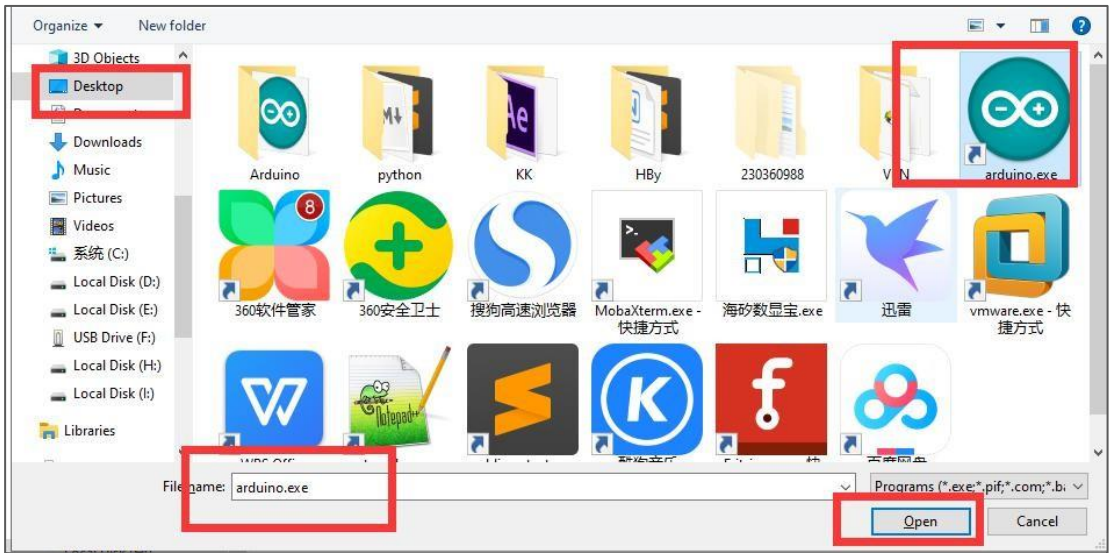
(3) Click "More apps", and then click "OK".



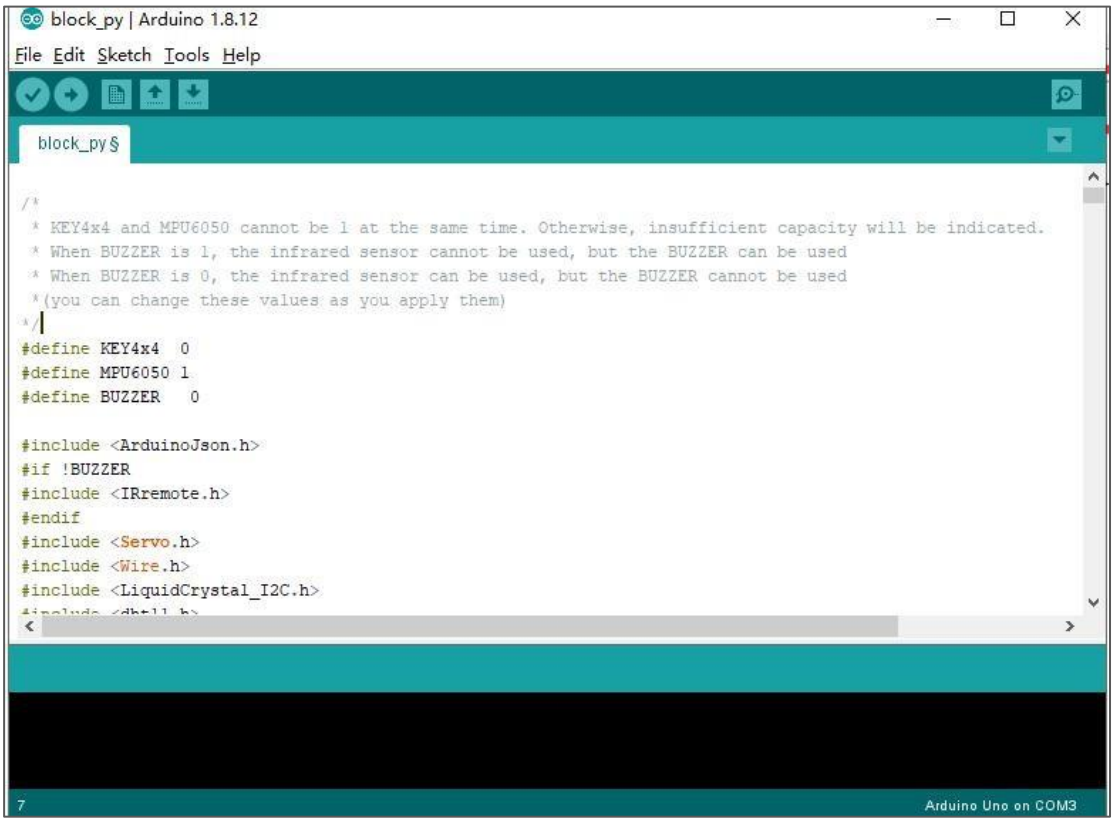
(4) Use the mouse to slide down, click "Look for another app on this PC", and then click "OK".



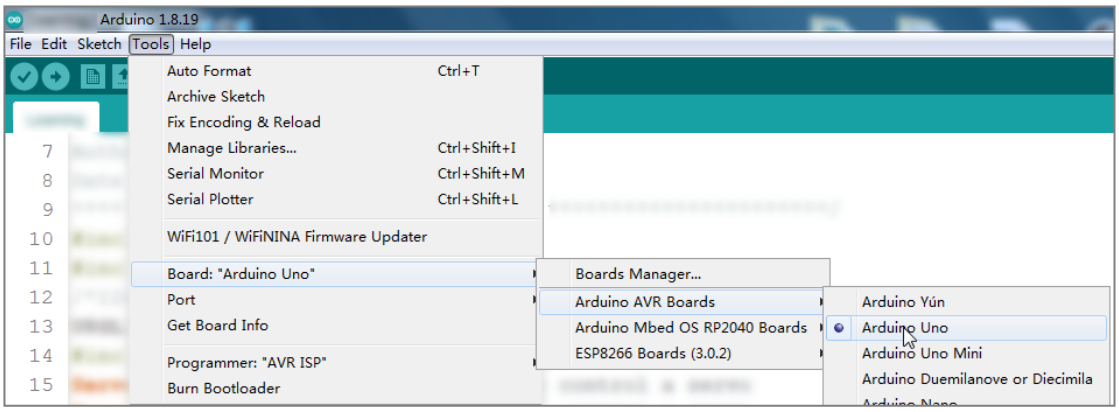
(5) Find the Arduino software on the Desktop or where you installed the Arduino software, select it, and finally click "Open".



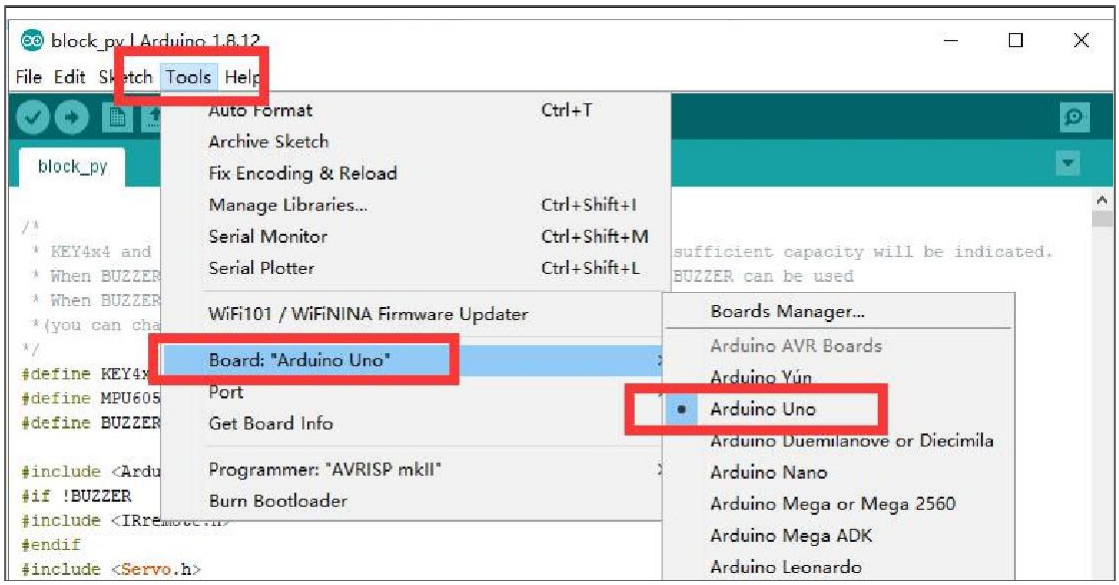
(6) At this time, the Arduino software opens the file "block_py.ino".



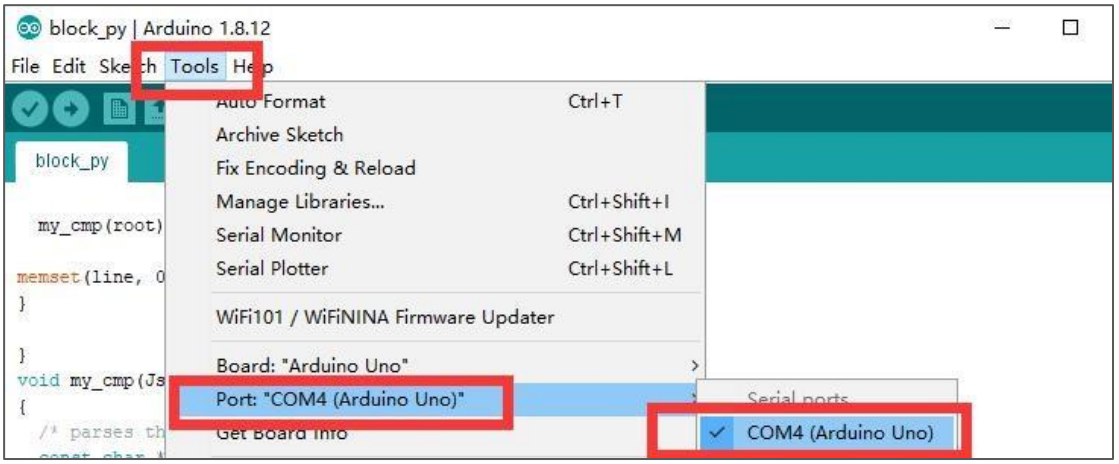
(7) First select the Arduino development board as UNO version with Tools.



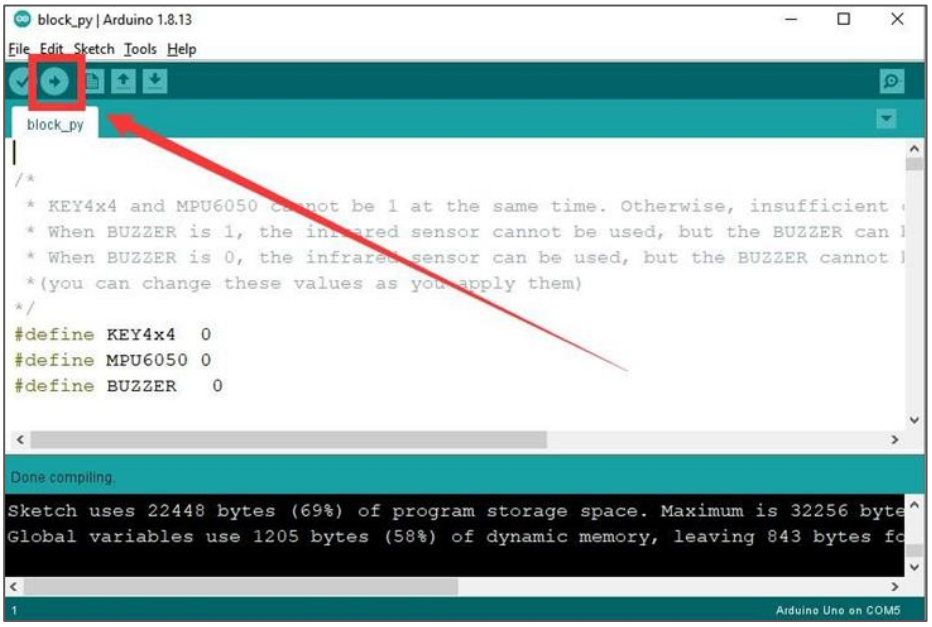
Or：



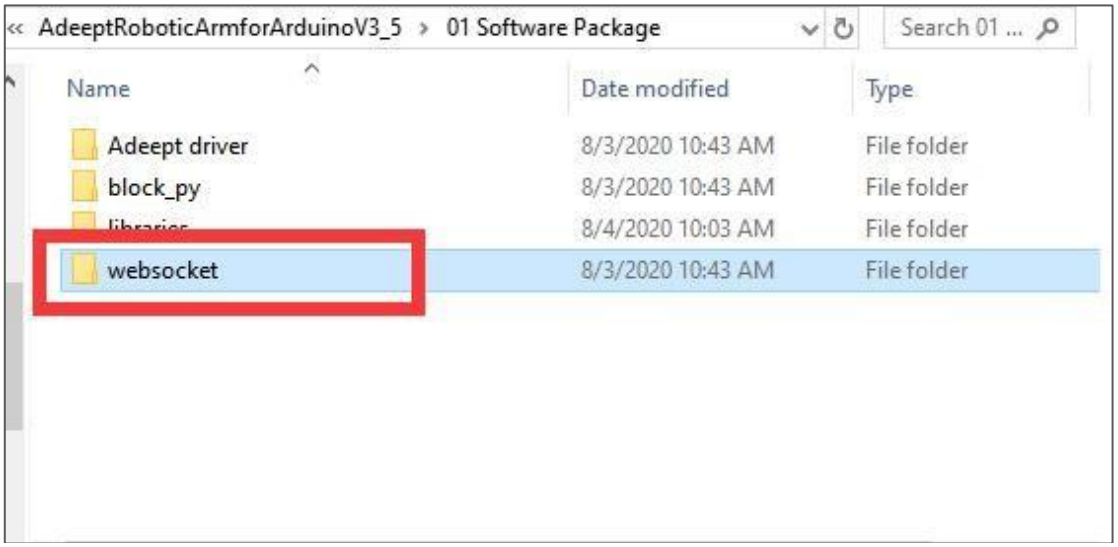
(8) Then continue to use Tools to select the port “Port” of the Adeept Arm Drive Board connected to the computer.



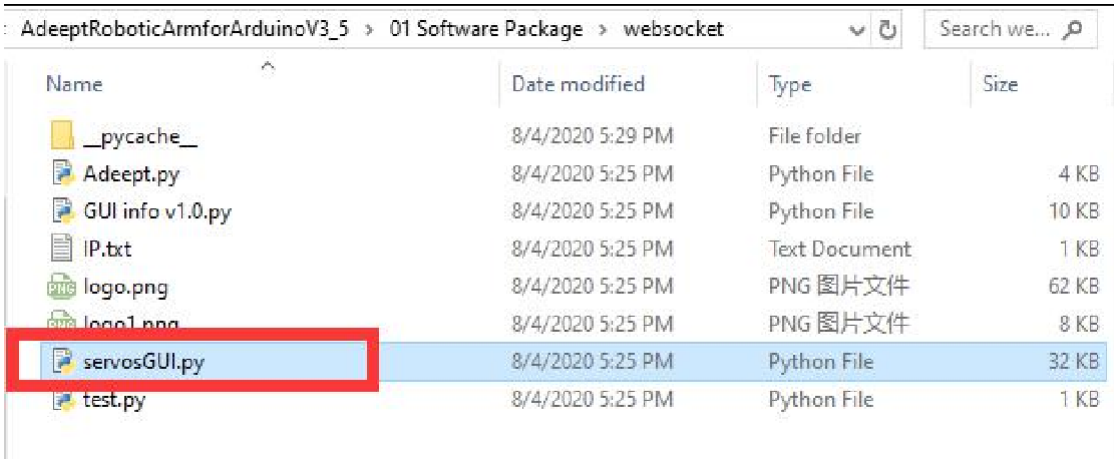
(9) Click the Upload button  to download the code program to the Arduino development board.



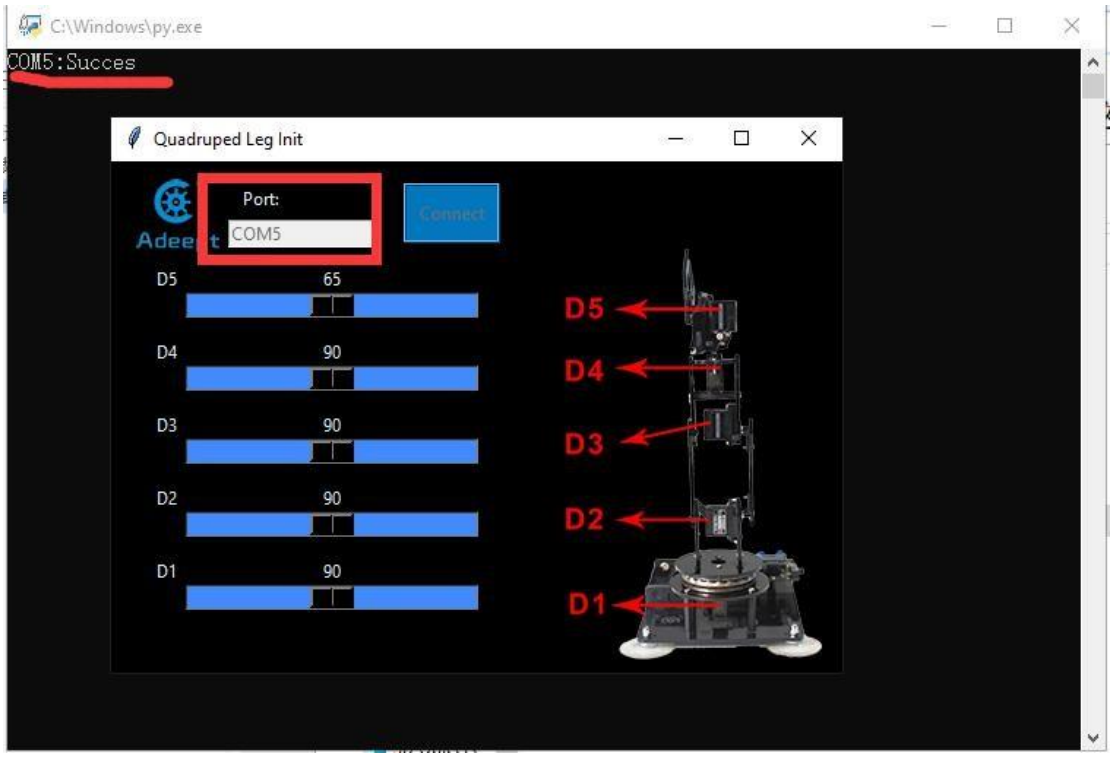
(10) Find **the Package of Documentation** (Reference: Chapter 4, near Page 12 of this section, subsection 5, step (4)) -> "01Software Package" -> "websocket", find this file: "servosGUI.py".



(11) Double-click to open this file: servosGUI.py



(12) After the GUI is opened, as shown in the figure below, you need to fill in the Port in the Arduino IDE in the Port input field. For example, the Port connected to the Arduino IDE is COM5, then you enter COM5, and then click Connect. After successfully connecting, there will be a prompt message in the

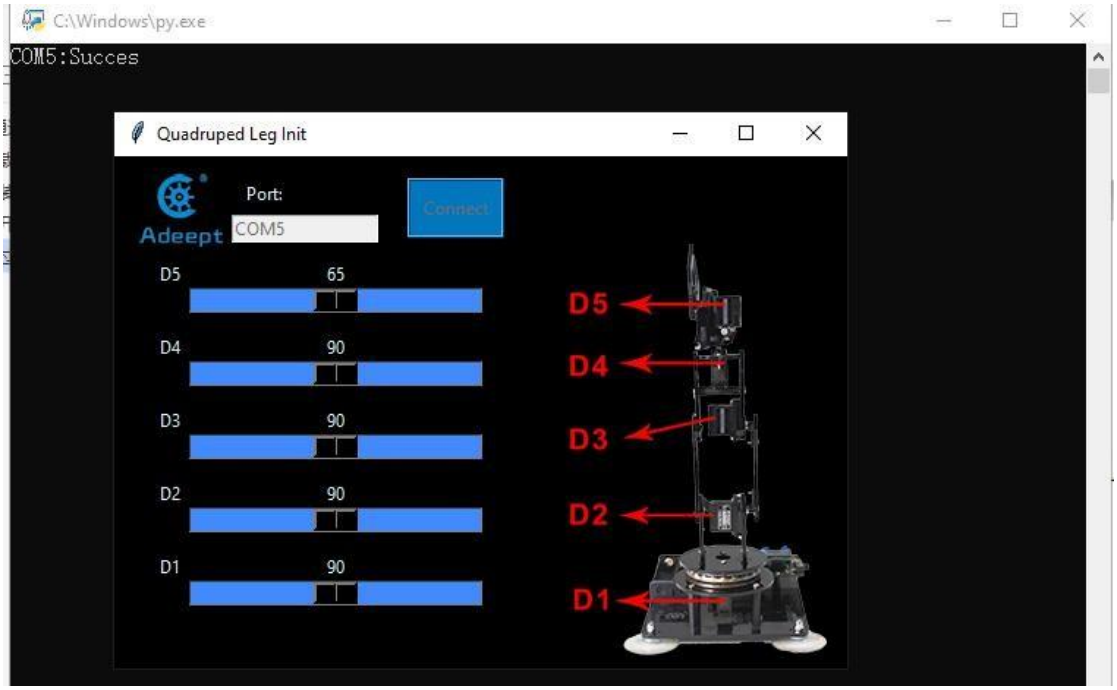


upper left corner: "COM5: Success".

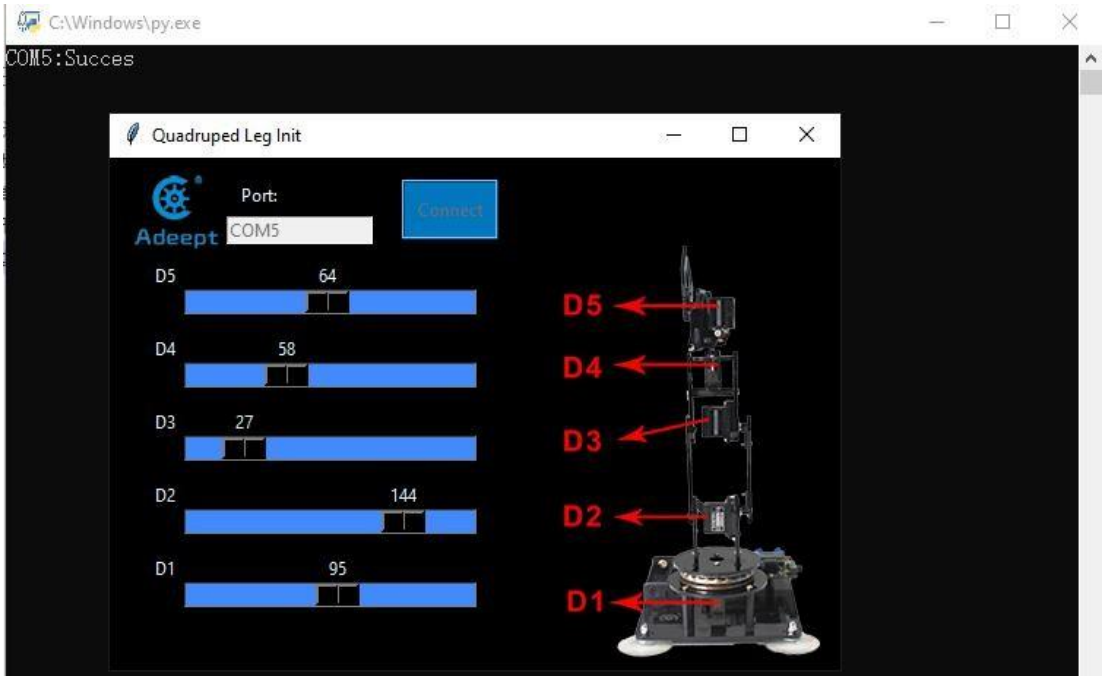
4. Controlling the robotic arm with the GUI interface

Note that the arm is still connected to the computer with the USB cable.

1. In the opened GUI interface, the left area is to control the movement of the servo D1~D5, and the right area is the structure diagram of the servo of the robotic arm.



2. When you need to control the robotic arm, you can slide the slider corresponding to the servo in the left area to control the movement of the robotic arm. When a certain position is slipped, a data will be displayed on the slider, this data represents the angle.


C:\Windows\py.exe
COM5:Succes
Quadruped Leg Init
Adeept
Port:
COM5
Connect
D5
64
D4
58
D3
27
D2
144
D1
95
D5
D4
D3
D2
D1