Lesson 8 Read Bus Servo Status

1. Working Principle

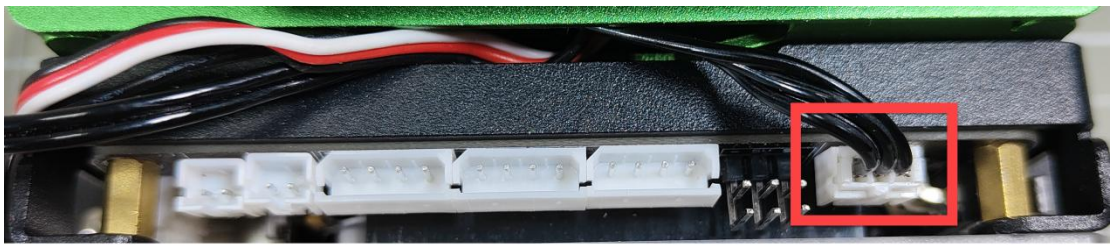
Bus servo has voltage, temperature, position feedback and other functions so that we can read its status in real time.

The path to the source code of the program is 5.Hardware Basic Learning/Python Development/Program Files/Read Bus Servo Status/ main.py

```
1  import time
2  from BusServo import BusServo
3
4  # Read the bus servo state
5
6  bus_servo = BusServo()
7
8  if __name__ == '__main__':
9
10   print('Position:', bus_servo.get_position(1)) # Get the position of ID1 servo
11
12   print('Vin:', bus_servo.get_vin(1)/1000)     # Get the voltage of ID1 servo
13
14   print('Offset:', bus_servo.get_offset(1))    # Get the deviation value of ID1 servo
```

2. Preparation

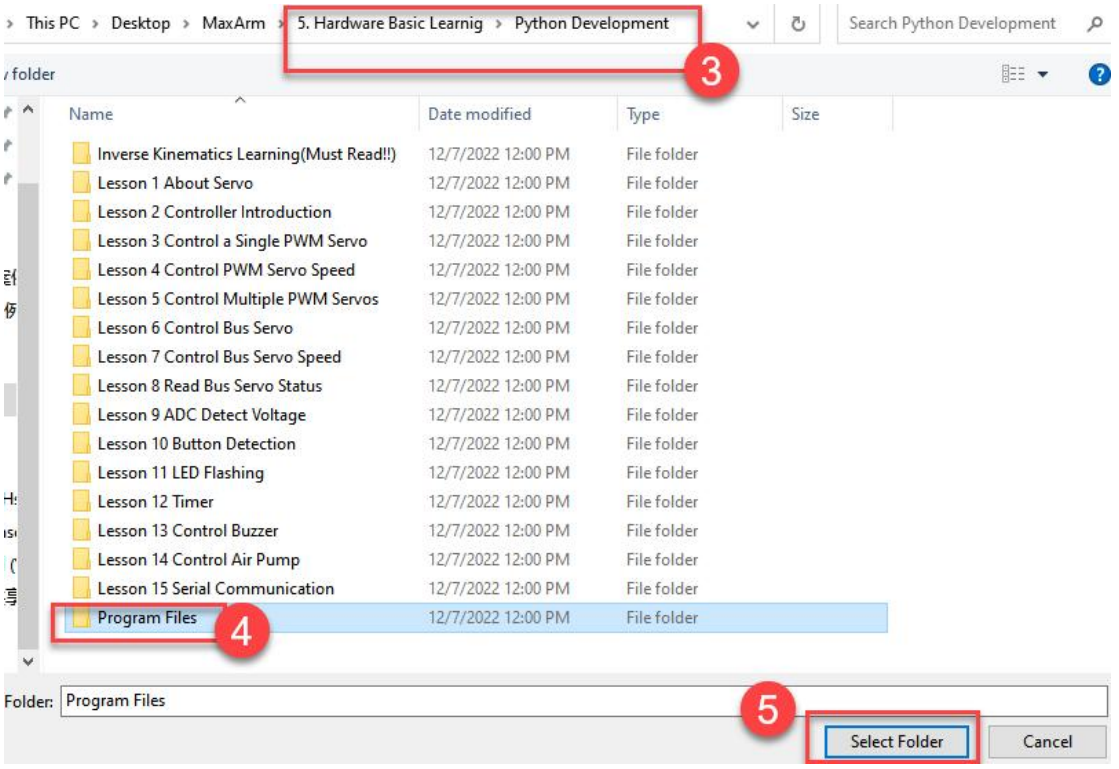
Connect the bus servo to the MaxArm controller. The wiring method is as follow:



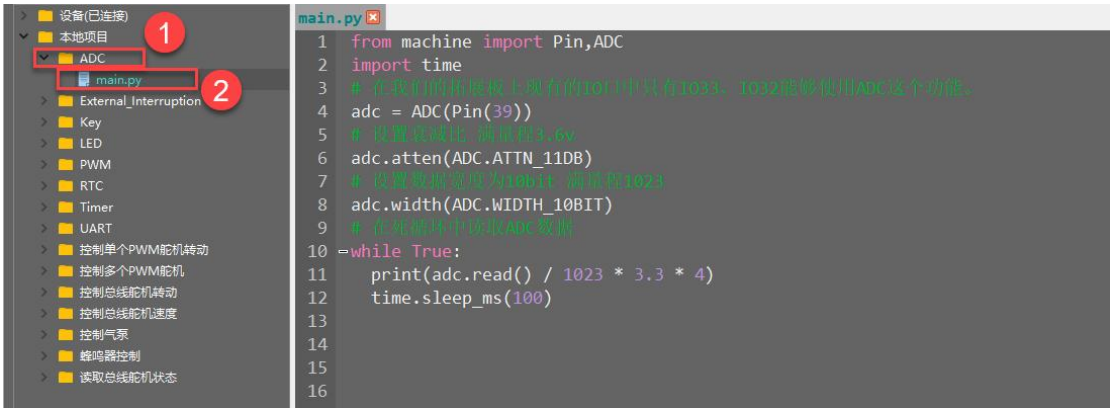
3. Operation Steps

Please connect MaxArm to Python editor according to the tutorial in folder “4. Underlying Program Learning/Python Development/Lesson 1 Set Development Environment”.

1) After connecting, change the path of Workspace to “5.Hardware Basic Learning/Python Development” and select “Program Files”.



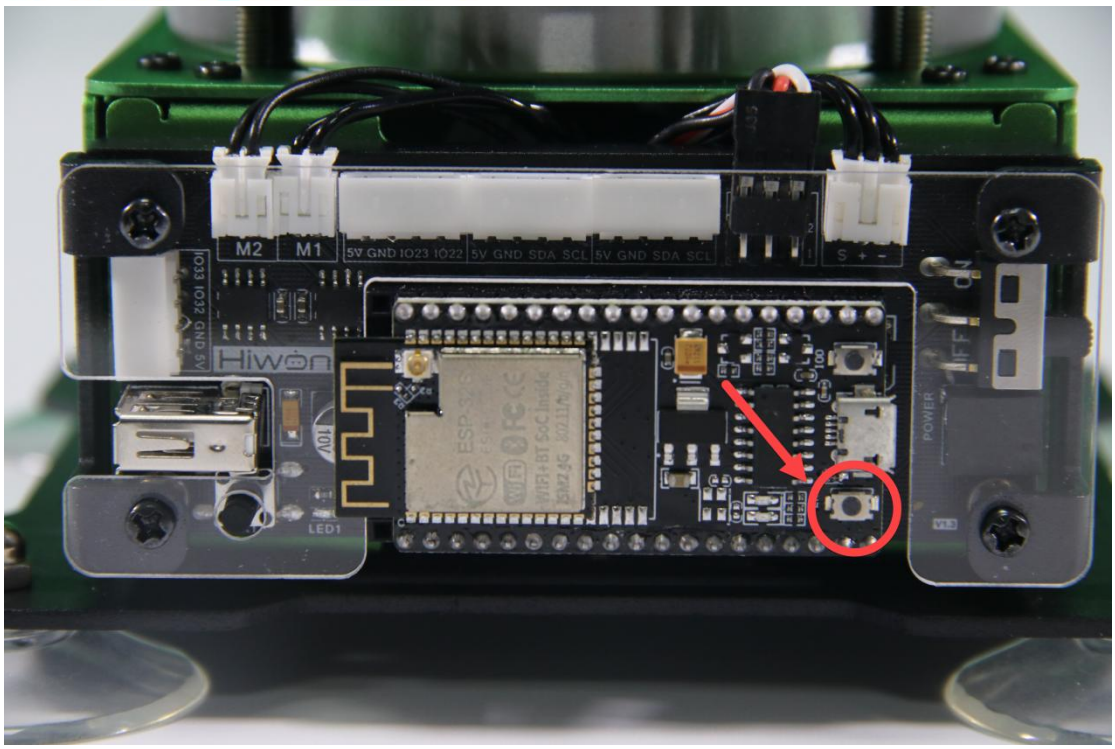
2) Click the folder “Read Bus Servo Status”, and then click “main.py” to open the program.



3) Click on the download icon to download program to ESP32 controller.

4) Click on the download icon to download program to ESP32 controller.

5) When the terminal prints the prompt, as shown in the image below, it means download completed.



4. Project Outcome

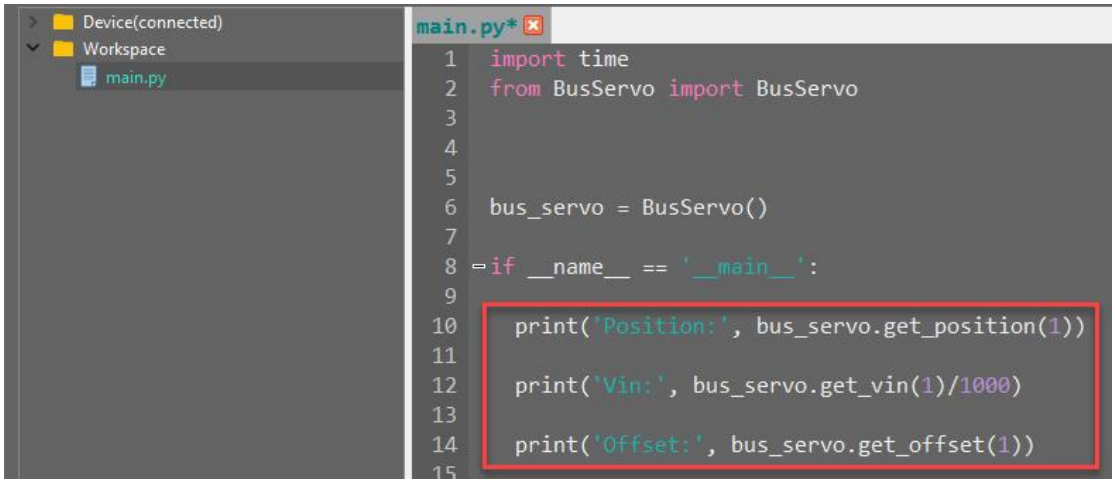
When running program, the terminal will print the current position, voltage and offset information.

```
Position: 501
Vin: 12.196
Offset: 0
```

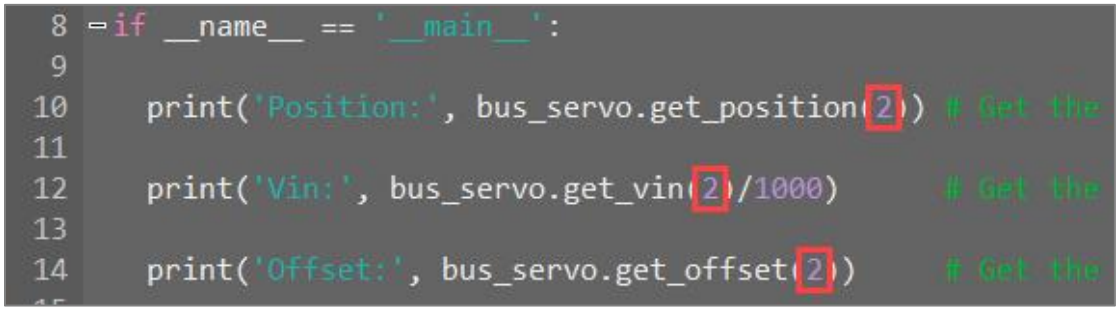
5. Function Extension

The program is set to read the information of ID1 servo. If want to read others, you can change to the corresponding code to implement. This lesson will change to read the information of ID2 servo. The specific operation steps are as follow:

1) Find the following code:



2) Change the ID number from 1 to 2, as shown in the figure below:



3) After modifying, click on  icon to check grammar. In the mean time, the terminal will show the following prompt.

4) Click on  icon.

5) Refer to “Operation Steps 4-6” to download and run the program to check the position, voltage, offset and other information.