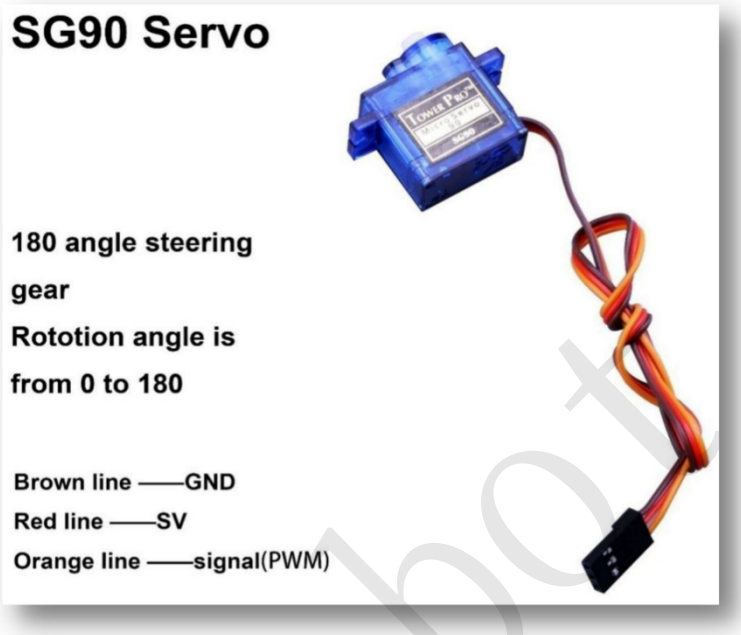
1.About MG90S servo

First, let's learn about SG90 servo：



Classification: 180° servo

Generally, the servo has three control lines: power line, ground line and signal line.

Servo pin definition: brown line - GND, red line - 5V, orange line – signal.

How the servo works：

The signal modulation chip in the servo receives the signal from the control board, and then the servo will obtain the basic DC voltage. There is also a reference circuit inside the servo, which can generate standard voltage. The two voltages will be compared with each other and output the difference. Then the motor chip will receive the difference and determine the speed, direction and angle. When there is no difference between the two voltages, the servo will stop.

How to control servo：

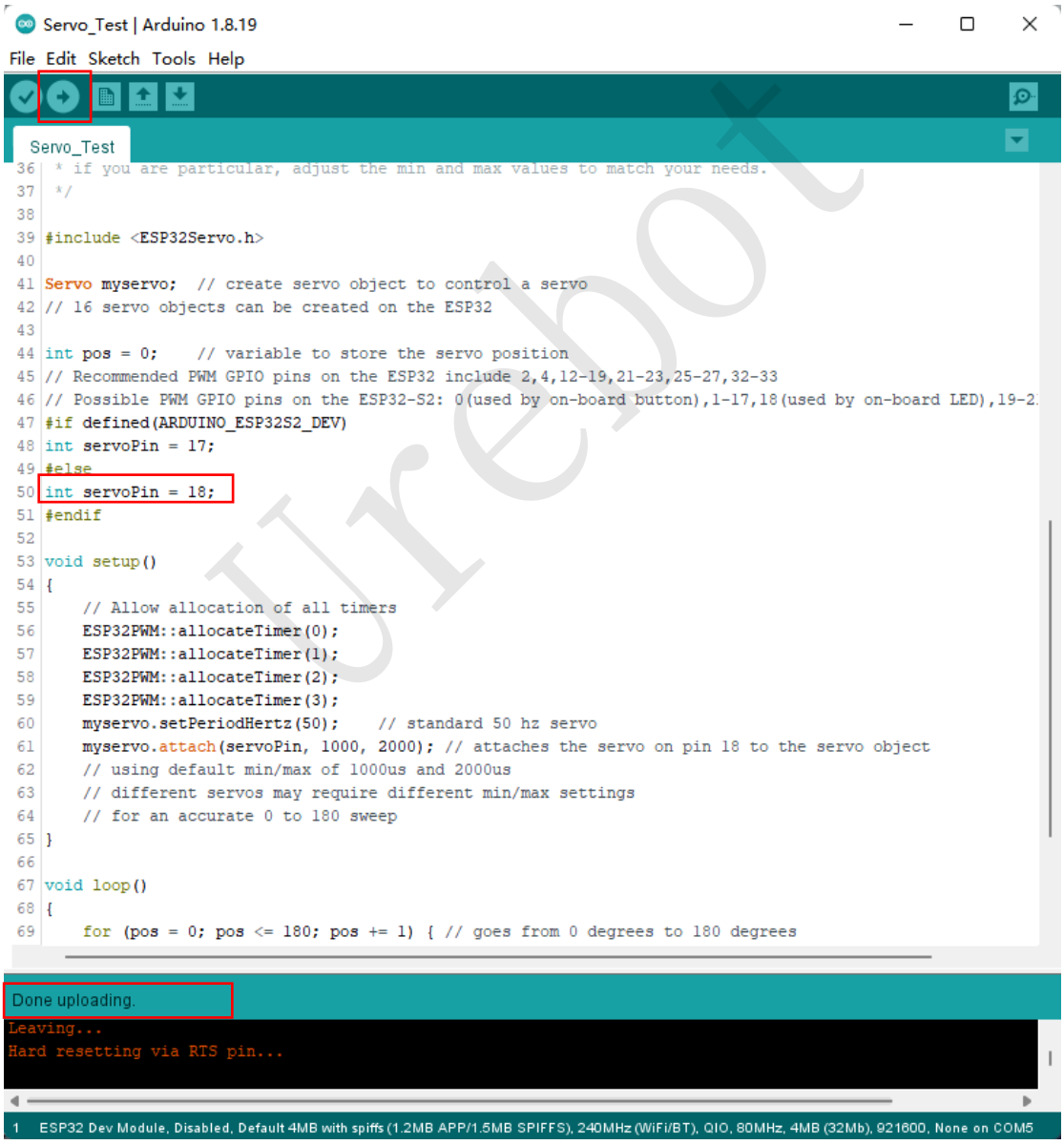
To control the servo rotation, it is necessary to make the time pulse about 20ms and the high level pulse width about 0.5ms~2.5ms, which is consistent with the servo angle limit.

Taking 180 degree servo as an example, the corresponding control pulse time is as follows

0.5ms	0
1.0ms	45
1.5ms	90
2.0ms	135
2,5ms	180

2.Example

Open the tutorial provided by us, and open the Servo_Test.ino file under "03_Tutorial_&_Code → Lesson1 Drives a Single Servo → Servo_Test". Connect the ESP32 development board and computer with USB cable, select the correct development board, processor and port. Download the code into the ESP32, as shown in the figure below.



After the code is downloaded, pull out the USB cable and connect the MG90S servo and expansion board. The connection relationship is shown below.

MG90S servo servo shield

Brown line ----------G

Red line----------V

Orange line ----------18

Insert the battery into the expansion board. If the servo is normal, it should rotate from 0 degrees to 180 degrees, and then rotate from 180 degrees to 0 degrees, and keep cycling. Disassemble the 12 servos provided in the kit and test them according to the same operation to ensure that each servo is normal.。