

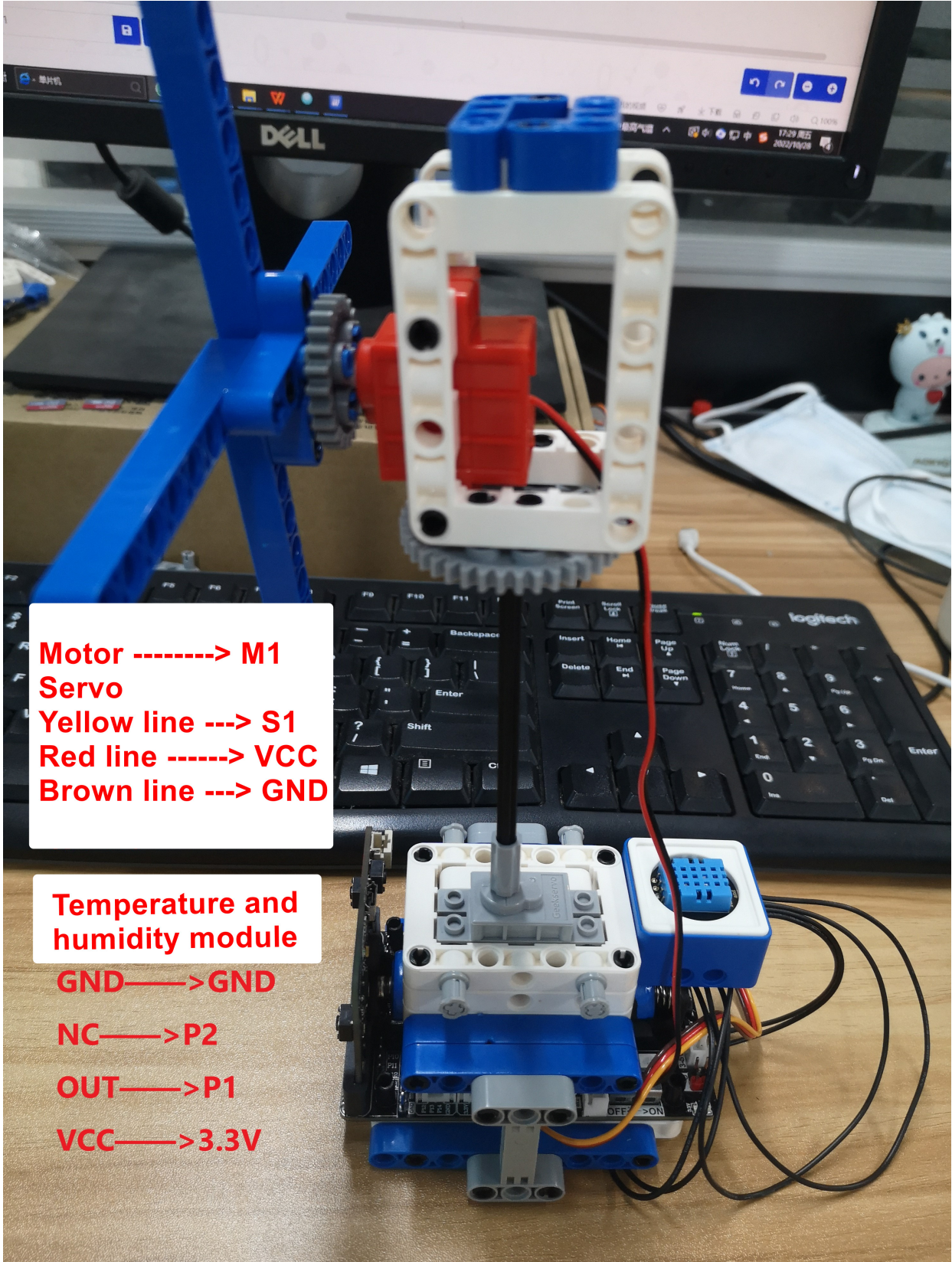
Temperature control fan

1. Learning target

In this course, we will learn how to use Micro:bit and temperature and humidity sensor and key module to make a temperature control fan.

2. Preparation

Connect the module to Micro:bit board by expansion board, as shown below.



Motor -----> M1
Servo
Yellow line ---> S1
Red line -----> VCC
Brown line ---> GND

Temperature and
humidity module

GND——>GND

NC——>P2

OUT——>P1

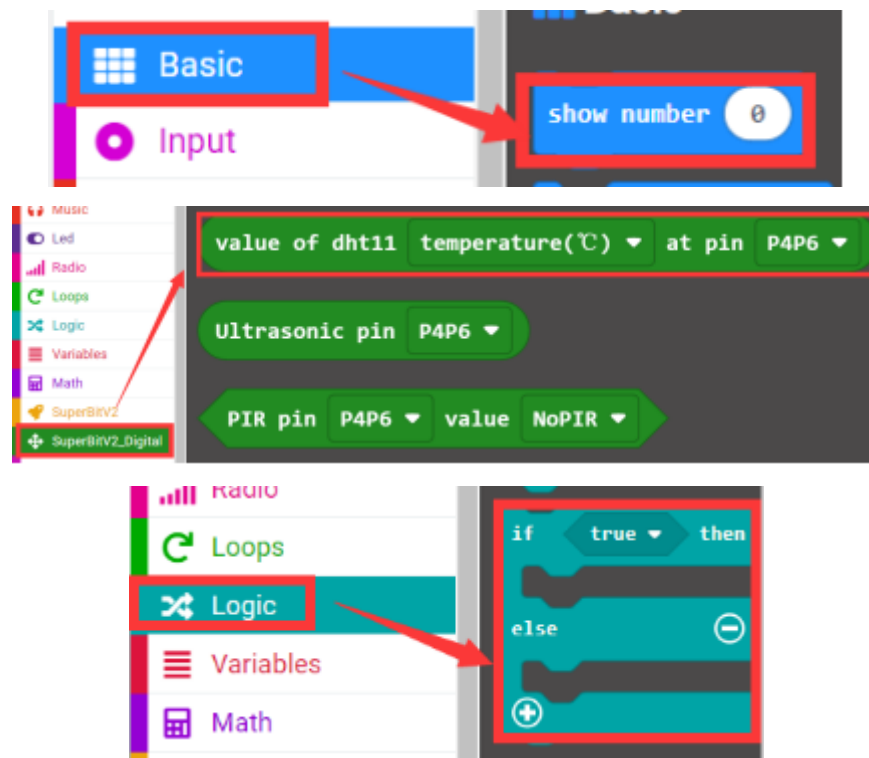
VCC——>3.3V

3. Programming method

Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: <http://microbit.org/> , enter the programming interface, Add the Yahboom package <https://github.com/YahboomTechnology/SuperBitLibV2> to program.

Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click 【New Project】 , add Yahboom package: <https://github.com/YahboomTechnology/SuperBitLibV2>, you can start programming.

4.Looking for blocks



Search...

- Basic
- Input
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SuperBitV2

RGB_Program

Music dadadum ▾

Servo(180°) num S1 ▾ value 0

Servo(360°) num S1 ▾ pos forward ▾ value 0

Servo(270°) num S1 ▾ value 0

Motor M1 ▾ speed (-255~255) 0

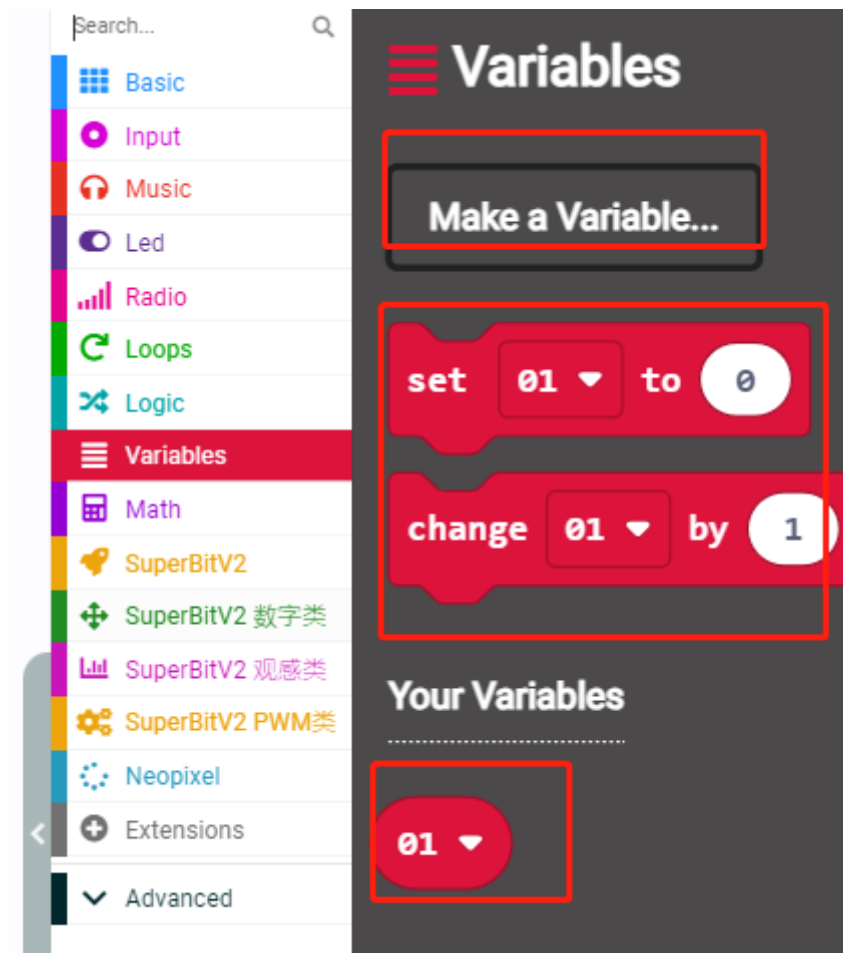
Motor

M1 ▾

speed 0

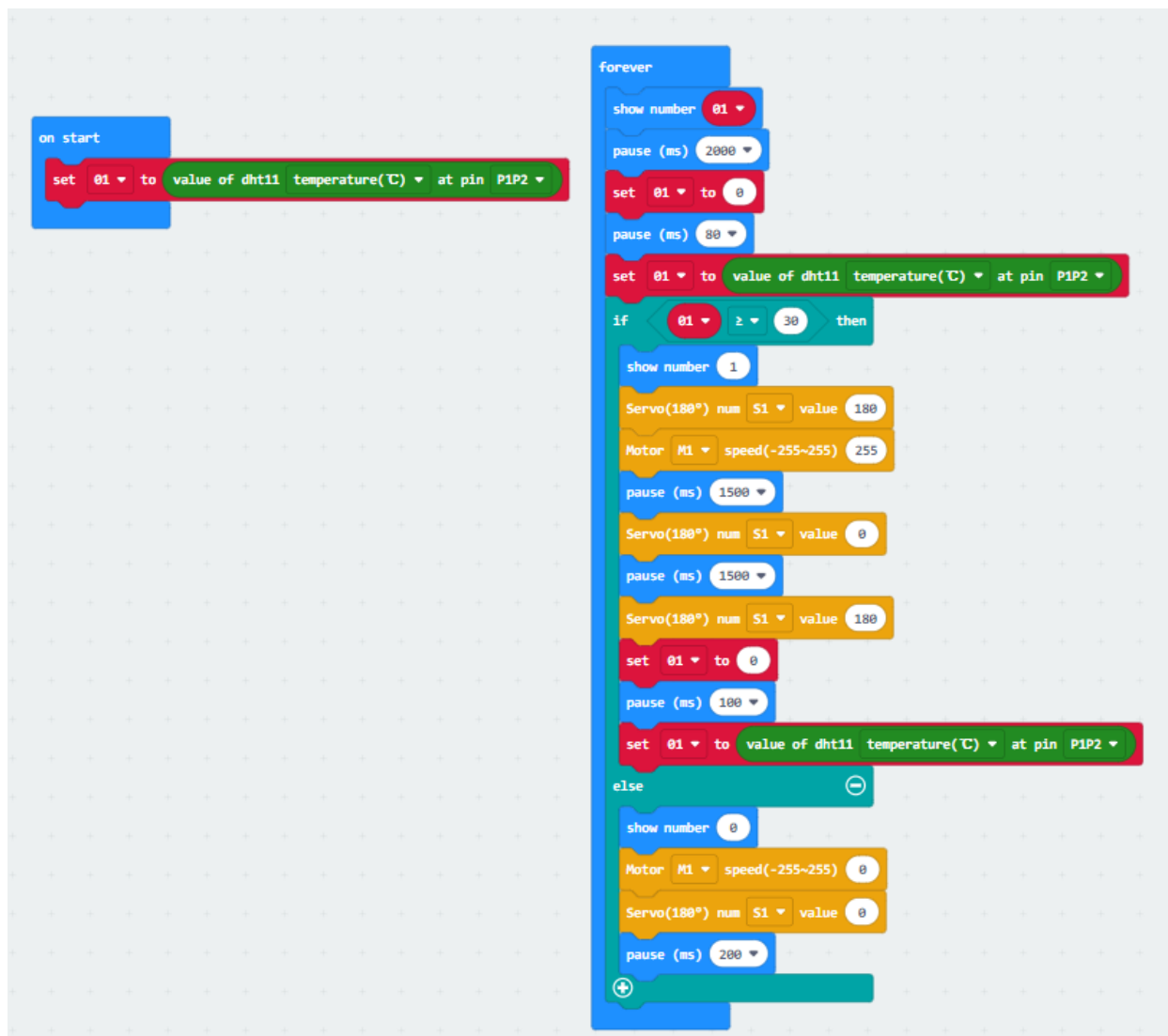
M1 ▾

speed 0



5.Combine block

The summary program is shown below.



Since the temperature and humidity module is affected by the temperature and humidity of the environment, the values obtained will also be different. Please modify the sensor threshold according to your actual environment.

6. Experimental phenomena

After the program runs successfully, the current ambient temperature will be printed on the microbit motherboard. If you hold the temperature and humidity module in your hand and heat it, after a period of time, when the temperature reaches 30 degrees Celsius. The motherboard dot matrix displays 1, the fan starts to rotate, and the servo turns from 180 degrees to 0 degrees and then returns to 180 degrees. When the temperature is lower than 30 degrees, the fan stops rotating and the servo returns to 0 degrees. At this time, the motherboard dot matrix displays 0.

Note: Temperature detection will have a slow heating and cooling process, and the effect is slightly lower than the real-time performance of humidity detection. If humidity control is required, you can use the case source code provided by the network disk under the same wiring situation, and continue to breathe into the temperature and humidity module for a few seconds, and the trigger condition will be reached. The code summary for humidity detection is as follows:

```
on start
  set 01 to value of dht11 humidity(0~100) at pin P1P2
```

```
forever
  show number 01
  pause (ms) 1500
  set 01 to value of dht11 humidity(0~100) at pin P1P2
  if 01 ≥ 88 then
    show number 1
    Motor M1 speed(-255~255) 250
    Servo(180°) num S1 value 0
    pause (ms) 1500
    Servo(180°) num S1 value 180
    pause (ms) 1500
    Servo(180°) num S1 value 0
  else
    show number 0
    Servo(180°) num S1 value 0
    Motor M1 speed(-255~255) 0
```