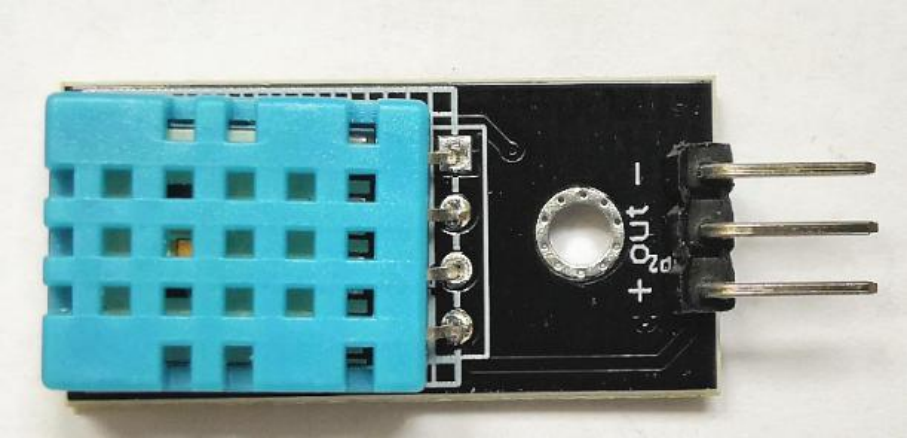
Detect temperature humidity

1. Learning target

1.1 In this course, we will learn how to use pins of the Raspberry Pi Pico board.
1.2 How to use temperature humidity DHT11 module.

2. Preparation

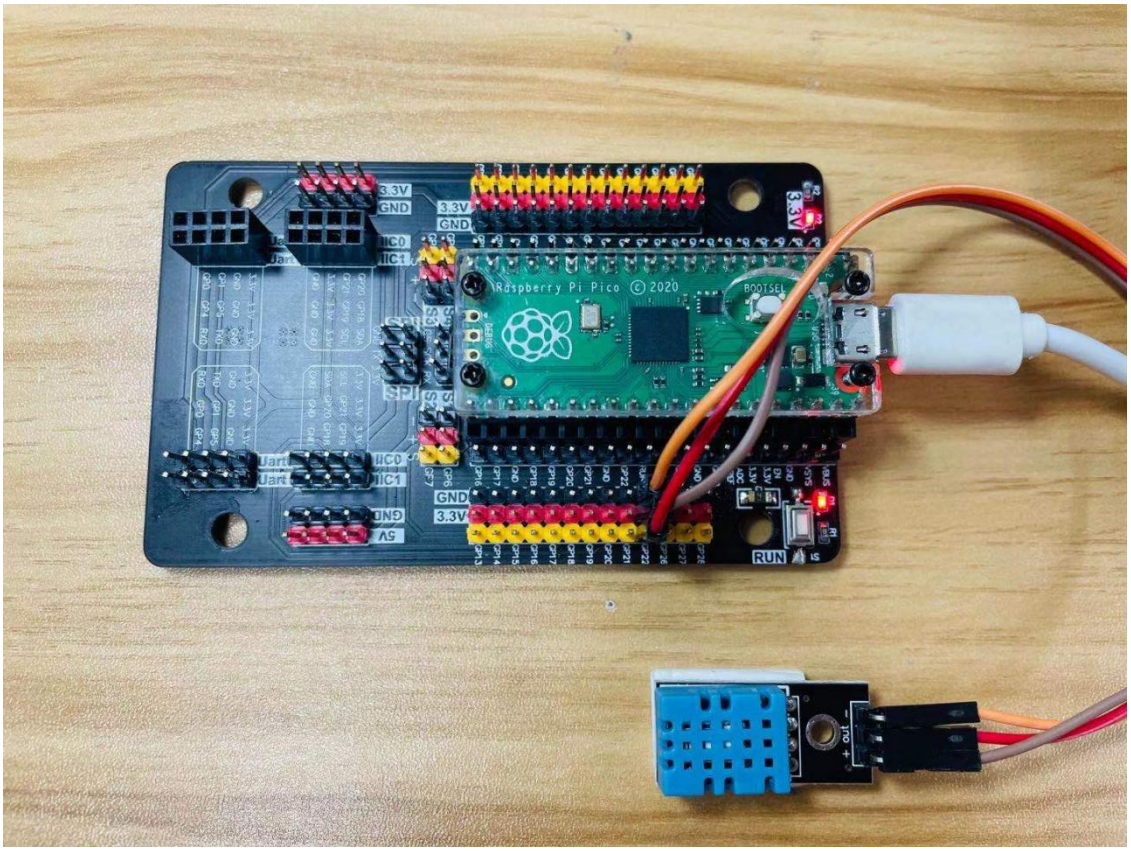
Raspberry Pi Pico board *1
Pico sensor expansion board *1
PC *1
USB data cable *1
Temperature humidity DHT11 module *1
Male-to-male DuPont line *3



The temperature and humidity module is a composite sensor that can output digital signals after calibration. It uses professional data acquisition technology and temperature and humidity sensing technology. It integrates resistance humidity sensing elements and NTC temperature measurement elements, and it is connected to a high-performance 8-bit MCU. During use, it can respond quickly and has strong anti-interference ability, which will help you create all kinds of interesting small experiments.

3. About wiring

DHT11 module	Pico sensor expansion board
OUT	GP22
VCC	3.3V
GND	GND



4. About code

Thonny programming

About how to using ThonnyIDE, please check the tutorials in【2.Development environment】

```
from machine import Pin
import time
from dht11 import DHT11
#Initialize temperature and humidity pins
pin = Pin(22, Pin.OUT)
#Initialize the temperature and humidity library
dht11 = DHT11(pin)

while True:
    #Print temperature and humidity values
    print("temperature is %d ℃" % dht11.temperature)
    time.sleep(.5)
    print("humidity is %d " % dht11.humidity)
    time.sleep(.5)
```

Before running this program, you need to load dht11 library, please check the specific steps in【2.Development environment】

5. Phenomenon

Click the green run button  of Thonny IDE to start running the program. Click the red stop button  to stop the program. When the program is running, the shell window of Thonny IDE will print the temperature and humidity value of the current environment.