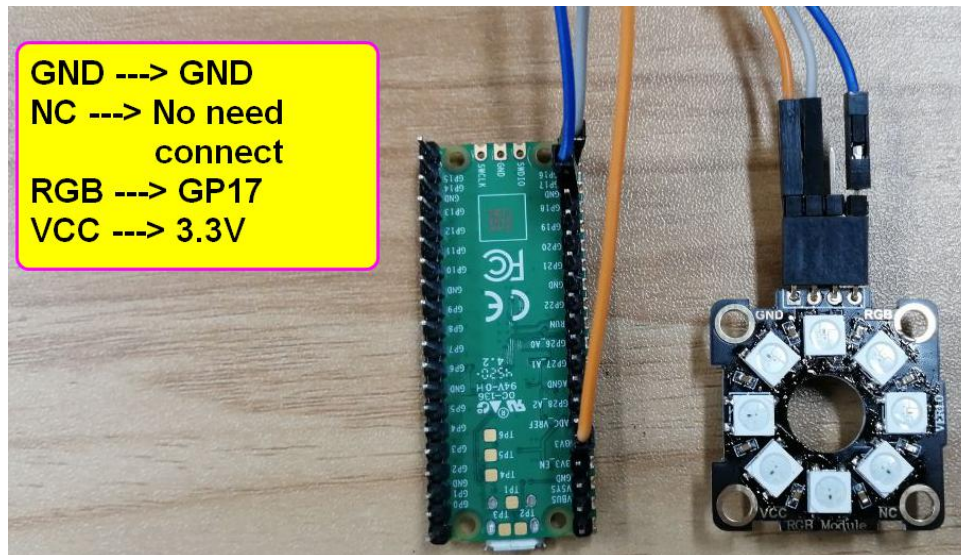# Light up all light

1. Learning target

In this course, we will learn how to use Raspberry Pi Pico and RGB halo module to achieve light up all RGB lights.

2. Preparation

Connect the module to Raspberry Pi Pico board by expansion board, as shown below.


3. About code

```
All_light.py ×
1   import time
2   import ws2812b
3   import random
4
5   numpix = 8   # Number of NeoPixels
6   # Pin where NeoPixels are connected
7   strip = ws2812b.ws2812b(numpix, 0,17)
8
9   strip.fill(0,0,0)
10
11  while True:
12      for i in range(numpix):
13          #pixel_num, red, green, blue
14          strip.set_pixel(i, 0, 255, 0)
15          time.sleep(0.005)
16          strip.show()
17
```
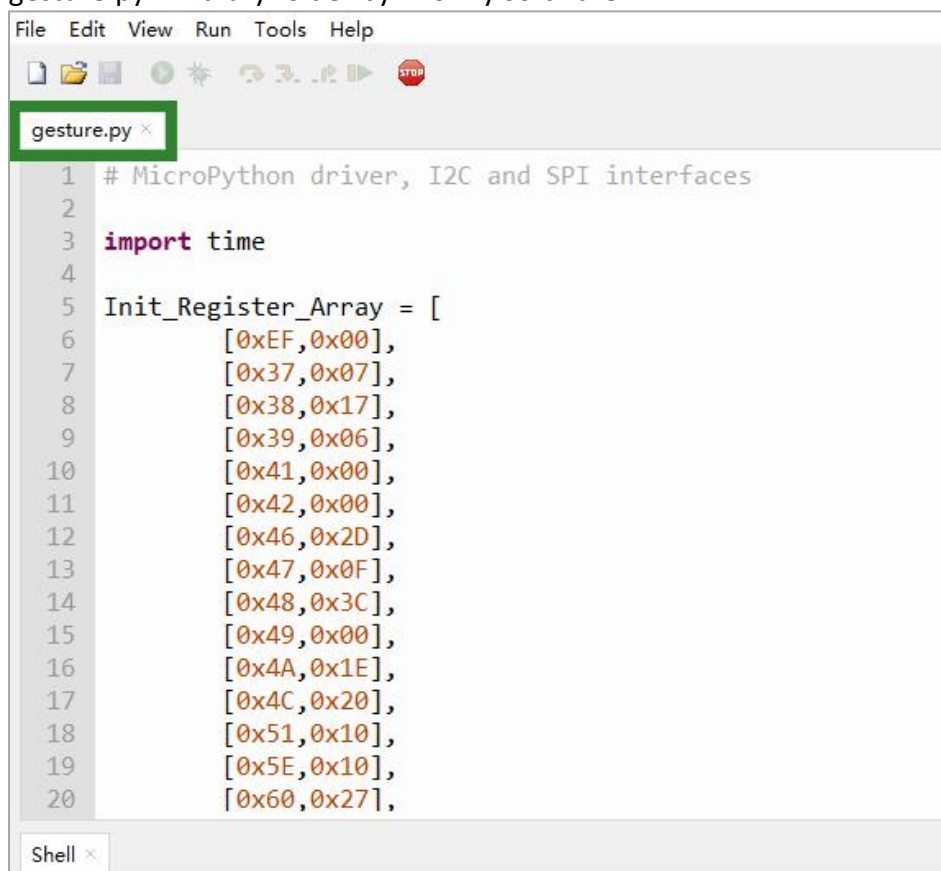
4. Import library file

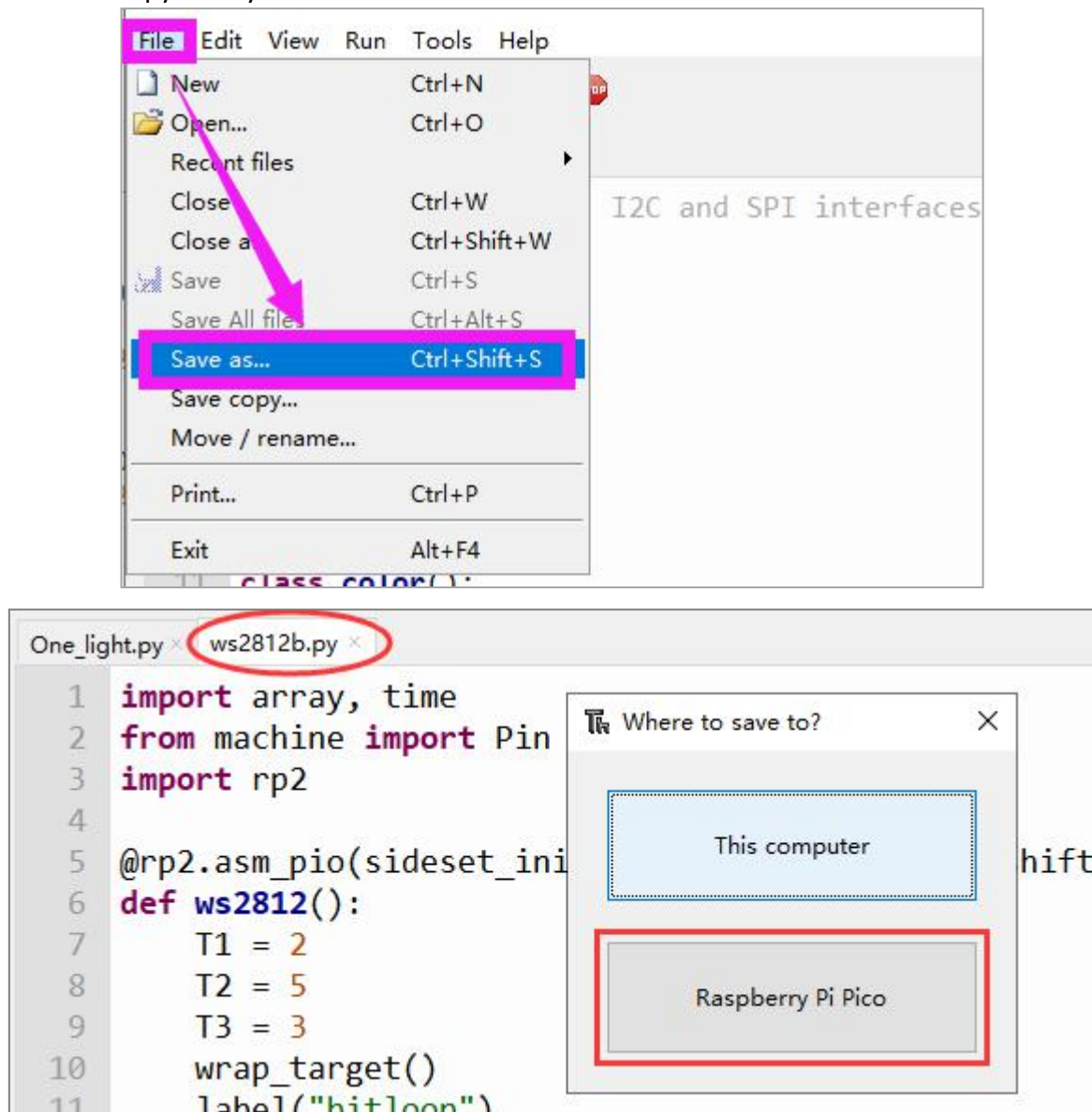4.1 Connect Pico to your computer, as shown below.
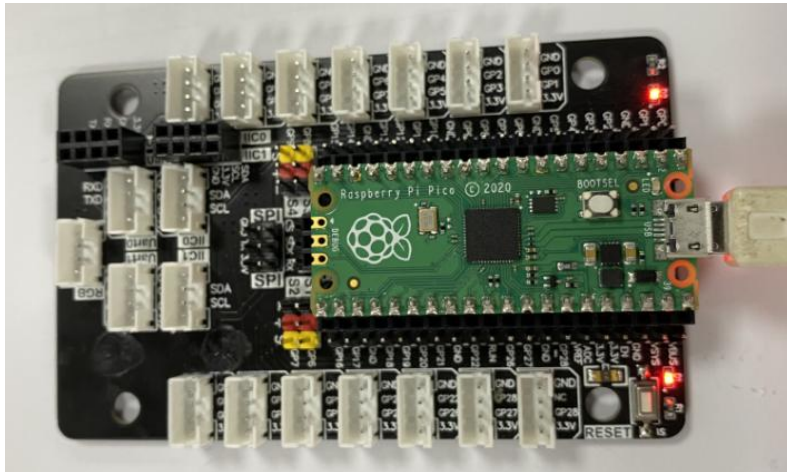
4.2 Open the Thonny software, click the lower right corner to connect the Pico board.
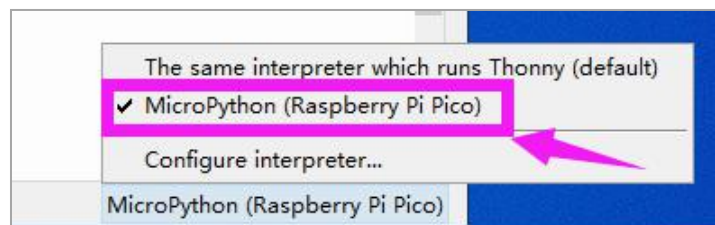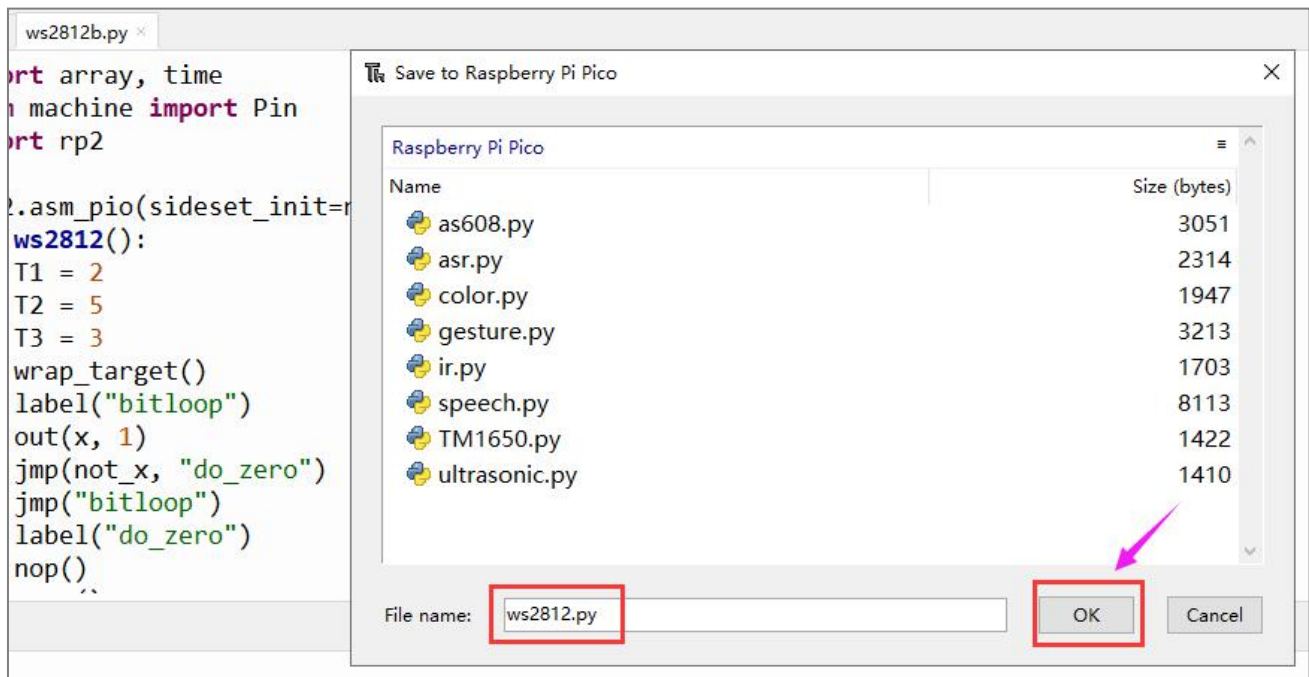

4.3 Open the gesture.py in library folder by Thonny software.

4.4 Save as this .py library file into Pico.

4.5 Enter the same file name as the library file. Then, click "OK".

5. Compiling and downloading code

5.1 We can open the One_light.py file by Thonny software.


```python
import time
import ws2812b
import random

numpix = 8   # Number of NeoPixels
# Pin where NeoPixels are connected
strip = ws2812b.ws2812b(numpix, 0,17)

strip.fill(0,0,0)

while True:
    for i in range(numpix):
        #pixel_num, red, green, blue
        strip.set_pixel(i, 0, 255, 0)
        time.sleep(0.005)
        strip.show()
```
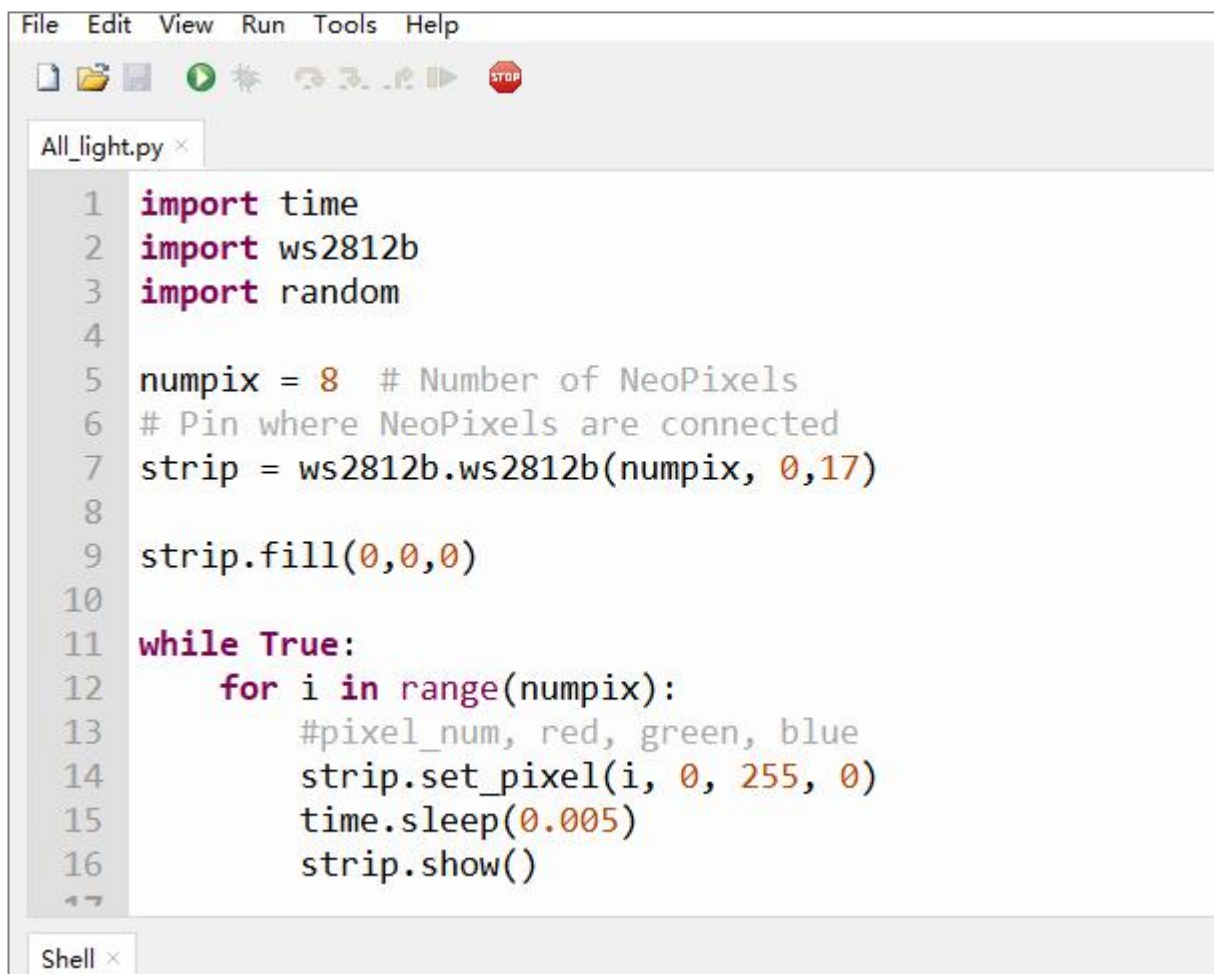
5.2 In Thonny menu bar, we need to click run button to run this program.
"%Run -c $EDITOR_CONTENT" will be displayed. As shown below.

```
MicroPython v1.13-290-g556ae7914 on 2021-01-21; Raspberry Pi Pico with RP2040
Type "help()" for more information.
>>> %Run -c $EDITOR_CONTENT
>>>
```

6. Phenomenon

After the program is run successfully. All lights on the module become green.