

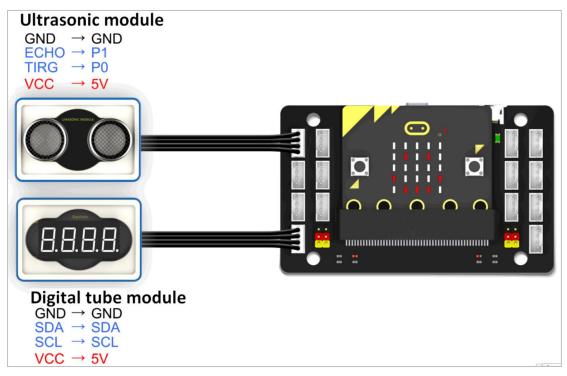
# Handheld rangefinder

# 1.Learning target

In this course, we will learn how to use Micro:bit, ultrasonic module and digital tube module to achieve ranging function.

# 2. Preparation

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



## 3. About code

```
# -*- coding: utf-8-*-# Encoding cookie added by Mu Editor
from microbit import *
import WOM_Sensor_Kit

display.off()
WOM_Sensor_Kit.WOM_init_display(7)

while True:
    WOM_Sensor_Kit.WOM_display(WOM_Sensor_Kit.WOM_ultrasonic(pin1, pin0))
    sleep(100)
```

Display the return distance of the ultrasonic wave on the digital tube, and adjust the display brightness of the digital tube to the brightest.

# 4. Writing and download code

4.1 You should open the Mu software, and enter the code in the edit window, , as shown below. Note! All English and symbols should be entered in English, use the Tab key (tab key) to indent and the last line must be a space.



4.2 You can click the "Check" button to check if our code has an error.

If a cursor or underline appears on a line, it indicates a syntax error, please check and modify. If there is no error in the program, the bottom left of the interface will prompt that there is no problem in detection.

```
0
                                   REPL
                                             Zoom-in
Light_up_a_RGB.py 🗶
    import WOM_Sensor_Kit
 4
    display.off()
 5
 6
    while True:
         # Parameter definition: WOM_rgb (red, green, blue
 8
         WOM_Sensor_Kit.WOM_rgb(1023, 1023, 1023)
 9
         sleep(100)
 10
 11
Nice one! Zero problems detected.
                                                                   Microbit 🐔
```

4.3 Click the 'REPL' button to check whether the WOM\_Sensor\_Kit Python library has been downloaded.

If not, please refer to [Preparation before class] --> [Python Programming Guide] .



```
Flash Files
                            REPL
                                 Plotter
                                       Zoom-in
                                             Zoom-out
                                                   Theme
     # -*- coding: utf-8-*-# Encoding cookie added by Mu Editor △
     from microbit import *
     import WOM Sensor Kit
  4
    display.off()
    while True:
         #Parameter definition: WOM rgb (red, green, blue) colo
         WOM_Sensor_Kit.WOM_rgb(1023,1023,1023)
  9
         sleep(100)
  10
  11
BBC micro:bit REPL
MicroPython v1.15-64-g1e2f0d280 on 2021-07-20; WOM Sensor Kit v2.0.0
with modified by Yahboom Team
Type "help()" for more information.
>>>
>>>
                                                                Microbit 💍
```

4.4 After the program is written, use a micro USB cable to connect the computer and the micro:bit board. Please click the 'Flash' button to download the program to the micro:bit motherboard (You need to click the 'REPL' button again to close the function of importing library files before you download the program).

```
0
                                   #####
                                   REPL
                                        Plotter
                                                                      Help
                                             Zoom-in Zoom-out
    import WOM_Sensor_Kit
 3
 4
    display.off()
 5
 6
    while True:
         # Parameter definition: WOM_rgb (red, green, blue
 8
         WOM_Sensor_Kit.WOM_rgb(1023, 1023, 1023)
 9
         sleep(100)
 10
 11
Copied code onto micro:bit.
                                                                   Microbit 📆
```



4.5 If the download failed, please confirm whether the micro:bit is connected to the computer through the micro USB data cable, and confirm whether the **WOM\_Sensor\_Kit Python library** has been imported.

# 5. Phenomenon

After the program is downloaded successfully. The digital tube will display the distance.