Manual doorbell

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 vibration sensor, buzzer module, button module to make a manual doorbell.

2. Preparation

Raspberry Pi Pico board *1

Pico sensor expansion board *1

PC *1

USB data cable *1

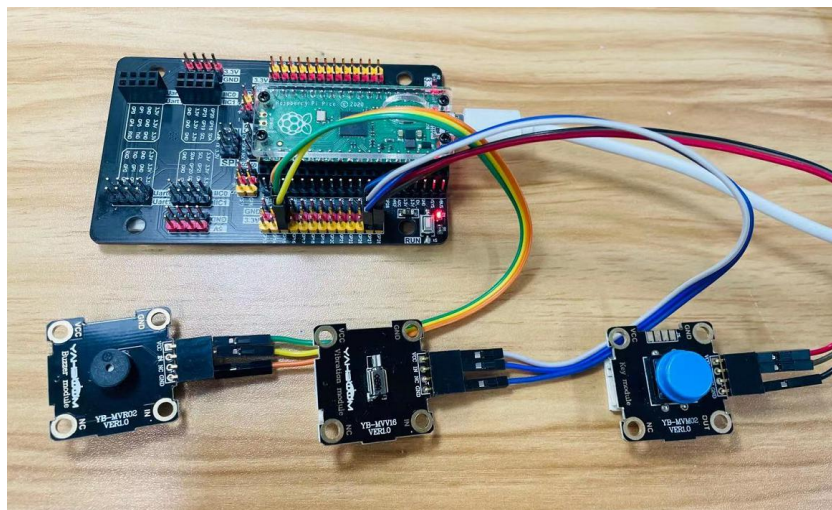Vibration motor module *1

Button module *1

Buzzer module *1

Female-to-male DuPont line *9

3. About wiring

Button module	Pico sensor expansion board
OUT	GP28
VCC	3.3V
GND	GND

Vibration motor module	Pico sensor expansion board
IN	GP27
VCC	3.3V
GND	GND

Buzzer module	Pico sensor expansion board
IN	GP15
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 utime

shake = Pin(27, Pin.OUT)
key = Pin(28, Pin.IN, Pin.PULL_UP)
buzzer = Pin(15, Pin.OUT)


while True:
    if key.value() == 0:
        shake.value(1)
        for i in range(10):
            buzzer.value(1)
            utime.sleep(0.0001)
            buzzer.value(0)
            utime.sleep(0.0001)
        utime.sleep(.001)
    shake.value(0)
```

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, when we press the button, the

buzzer will sound and the vibration motor module will vibrate.