4.Read pin high and low levels

1. Create and open the readgpio.py file

```
nano readgpio.py
```

2. Write program

```
import wiringpi

GPIO_Output_Pin = 0   #Define GPIO_Output_Pin as pin 0
GPIO_Intput_Pin = 1   #Define GPIO_Intput_Pin as 1 pin
OUTPUT = 1            #Define OUTPUT to be 1, that is, output
INPUT = 0             #Define INPUT to be 0, that is, input
HIGH = 1              #Define HIGH as 1, that is, the high point is flat
LOW = 0               #Define HIGH as 1, that is, the high point is flat

wiringpi.wiringPiSetup()                        #Set the GPIO number to wPi
mode
wiringpi.pinMode(GPIO_Output_Pin,OUTPUT)        #Set GPIO_Output_Pin to OUTPUT
output mode
wiringpi.pinMode(GPIO_Intput_Pin,INPUT)         #Set GPIO_Intput_Pin to INPUT
input mode

while 1:
    wiringpi.digitalWrite(GPIO_Output_Pin,HIGH)   #Set GPIO_Output_Pin to output
high level
    print('GPIO_Output_Pin OUTPUT =>HIGH')
    print('GPIO_Intput_Pin INPUT <=',wiringpi.digitalRead(GPIO_Intput_Pin))
#Print the data read from GPIO_Intput_Pin
    wiringpi.delay(1000)        #Delay 1000ms
    print()

    wiringpi.digitalWrite(GPIO_Output_Pin,LOW)        #Set GPIO_Output_Pin output
low level
    print('GPIO_Output_Pin OUTPUT =>LOW')
    print('GPIO_Intput_Pin INPUT <=',wiringpi.digitalRead(GPIO_Intput_Pin))
#Print the data read from GPIO_Intput_Pin
    wiringpi.delay(1000)        #Delay 1000ms
    print()
```

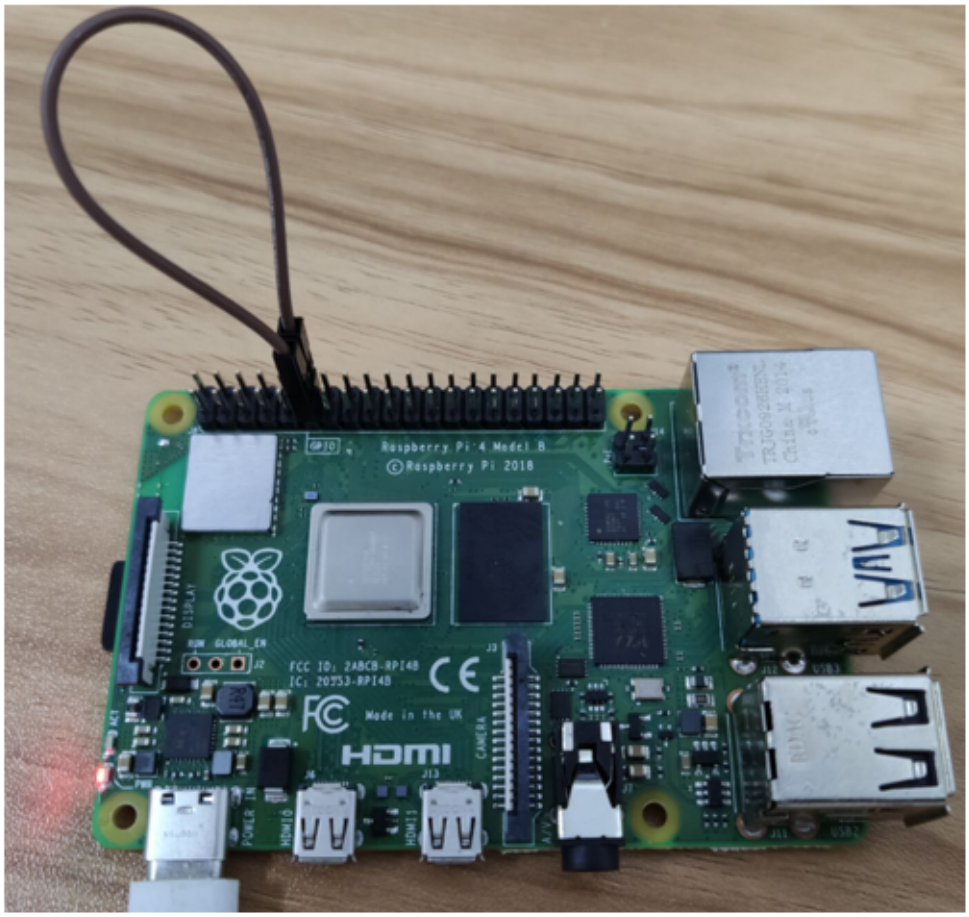
After writing is completed, press the shortcut key to exit

"Ctrl+X"

The system will prompt you whether you need to save, press Y and press Enter to save and exit.

"Y"

3. Use Dupont cable to connect GPIO0 and GPIO1 of Raspberry Pi



4. Run python code

```
readgpio.py
```

```
pi@raspberrypi:~/work/example/Python $ python3 readgpio.py
GPIO_Output_Pin OUTPUT =>HIGH
GPIO_Intput_Pin INPUT <= 1

GPIO_Output_Pin OUTPUT =>LOW
GPIO_Intput_Pin INPUT <= 0

GPIO_Output_Pin OUTPUT =>HIGH
GPIO_Intput_Pin INPUT <= 1

GPIO_Output_Pin OUTPUT =>LOW
GPIO_Intput_Pin INPUT <= 0

GPIO_Output_Pin OUTPUT =>HIGH
GPIO_Intput_Pin INPUT <= 1
```

The GPIO_Input_Pin pin changes as the GPIO_Output_Pin output changes

- Appendix: GPIO pin reference diagram

```
pi@raspberrypi:~ $ gpio readall
 +-----+-----+---------+------+---+---Pi 4B--+---+------+---------+-----+-----+
 | BCM | wPi |   Name  | Mode | V | Physical | V | Mode | Name    | wPi | BCM |
 +-----+-----+---------+------+---+----++----+---+------+---------+-----+-----+
 |     |     |    3.3v |      |   |  1 || 2  |   |      | 5v      |     |     |
 |   2 |   8 |   SDA.1 |   IN | 1 |  3 || 4  |   |      | 5v      |     |     |
 |   3 |   9 |   SCL.1 |   IN | 1 |  5 || 6  |   |      | 0v      |     |     |
 |   4 |   7 | GPIO. 7 |   IN | 1 |  7 || 8  | 1 | IN   | TxD     | 15  | 14  |
 |     |     |      0v |      |   |  9 || 10 | 1 | IN   | RxD     | 16  | 15  |
 |  17 |   0 | GPIO. 0 |   IN | 1 | 11 || 12 | 1 | OUT  | GPIO. 1 | 1   | 18  |
 |  27 |   2 | GPIO. 2 |   IN | 0 | 13 || 14 |   |      | 0v      |     |     |
 |  22 |   3 | GPIO. 3 |   IN | 0 | 15 || 16 | 0 | IN   | GPIO. 4 | 4   | 23  |
 |     |     |    3.3v |      |   | 17 || 18 | 0 | IN   | GPIO. 5 | 5   | 24  |
 |  10 |  12 |    MOSI |   IN | 0 | 19 || 20 |   |      | 0v      |     |     |
 |   9 |  13 |    MISO |   IN | 0 | 21 || 22 | 0 | IN   | GPIO. 6 | 6   | 25  |
 |  11 |  14 |    SCLK |   IN | 0 | 23 || 24 | 1 | IN   | CE0     | 10  | 8   |
 |     |     |      0v |      |   | 25 || 26 | 1 | IN   | CE1     | 11  | 7   |
 |   0 |  30 |   SDA.0 |   IN | 1 | 27 || 28 | 1 | IN   | SCL.0   | 31  | 1   |
 |   5 |  21 | GPIO.21 |   IN | 1 | 29 || 30 |   |      | 0v      |     |     |
 |   6 |  22 | GPIO.22 |   IN | 1 | 31 || 32 | 0 | IN   | GPIO.26 | 26  | 12  |
 |  13 |  23 | GPIO.23 |   IN | 0 | 33 || 34 |   |      | 0v      |     |     |
 |  19 |  24 | GPIO.24 |   IN | 0 | 35 || 36 | 0 | IN   | GPIO.27 | 27  | 16  |
 |  26 |  25 | GPIO.25 |   IN | 0 | 37 || 38 | 0 | IN   | GPIO.28 | 28  | 20  |
 |     |     |      0v |      |   | 39 || 40 | 0 | IN   | GPIO.29 | 29  | 21  |
 +-----+-----+---------+------+---+----++----+---+------+---------+-----+-----+
 | BCM | wPi |   Name  | Mode | V | Physical | V | Mode | Name    | wPi | BCM |
 +-----+-----+---------+------+---+---Pi 4B--+---+------+---------+-----+-----+
```