Adjust the brightness of LED light_RPi

1.Experiment purpose

Use the pin output pwm of Raspberry Pi to control the brightness of LED light, and also achieve the effect of breathing light.

2.Experiment preparation

Raspberry Pi board *1

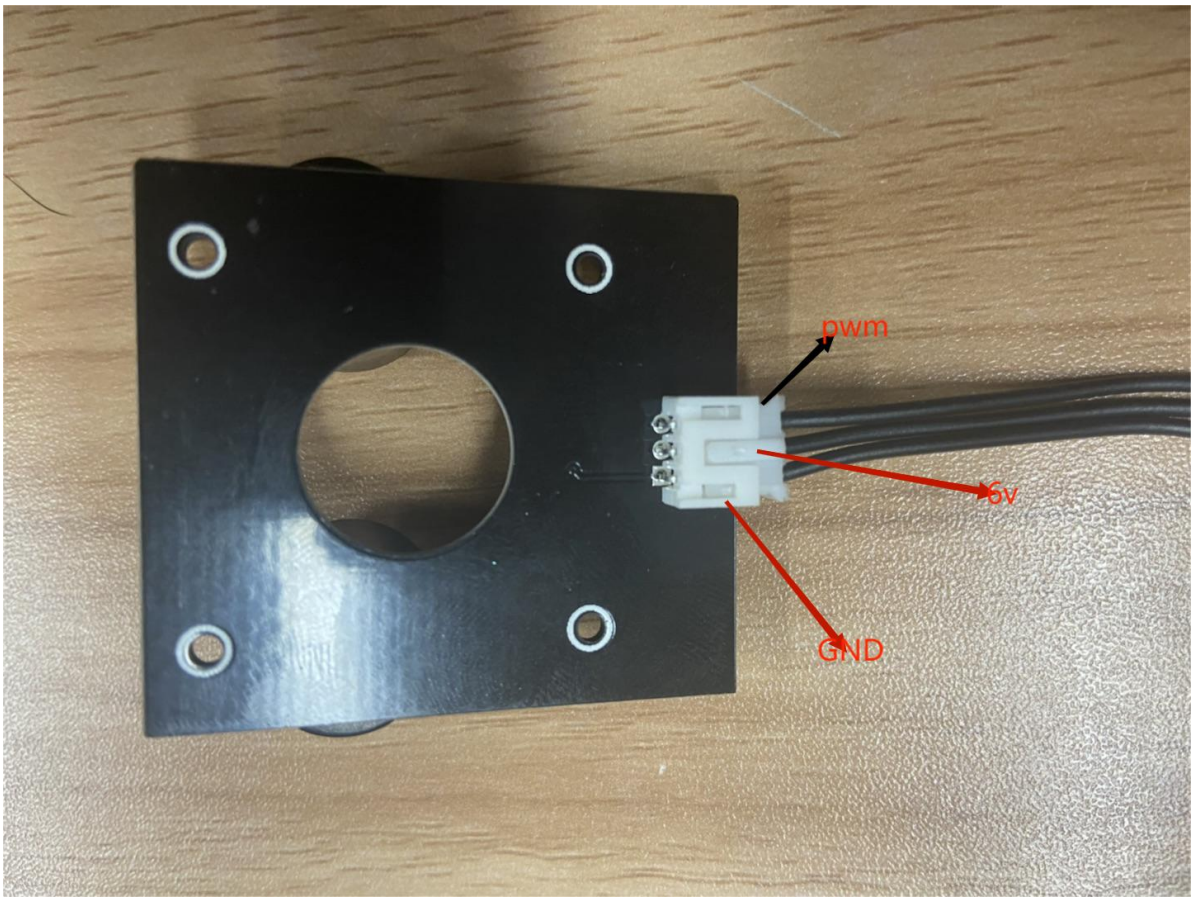
Searchlight module(working voltage:6V~30V) *1

External power supply with 6V output voltage *1

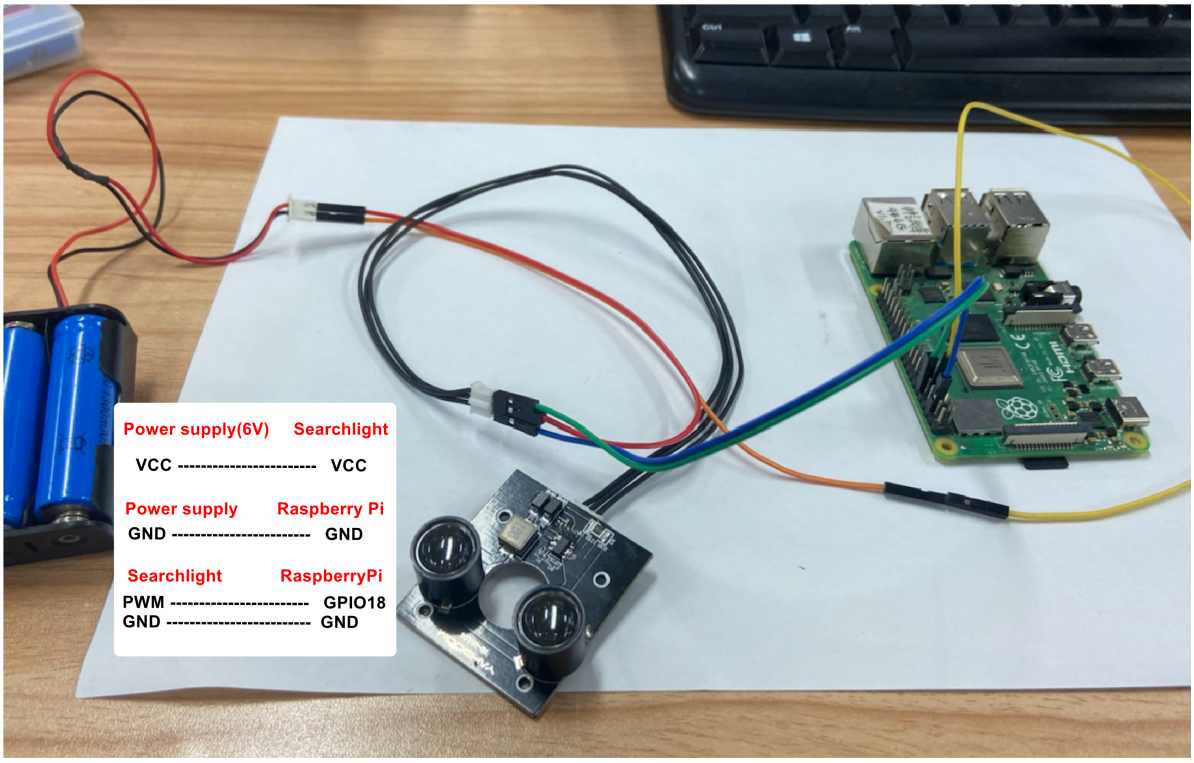
DuPont lines *N

The following is the connection diagram:

Pin of searchlight



The wiring is shown in the figure below:



3. About code

首先安装python版本的Wiringpi库，Wiringpi库提供了GPIO、I2C、SPI、UART和PWM等库，对于树莓派的GPIO编程相当方便。目前可在基于BCM2835、BCM2836和BCM2837的树莓派中使用。其他详细介绍请参看wiringPi官网介绍。

First, we need install the python version of Wiringpi library, which provides GPIO, I2C, SPI, UART and PWM libraries, which is quite convenient for raspberry GPIO programming.

At present, it can be used in raspberry pie based on BCM2835, BCM2836 and BCM2837. For other details, please refer to the introduction on wiringPi official website.

```
1.#python2.x version download
2.pip install wiringpi
3.
4.#python3.x version
5.pip3 install wiringpi
```

Step 1: Create a pwm. py file and open it to write the code as follows

```
import wiringpi
import time

OUTPUT = 1
PIN_TO_PWM = 1                                  #Define PIN_ TO_ PWM is 1 pin
wiringpi.wiringPiSetup()                        #Set GPIO number to wPi mode
wiringpi.pinMode(PIN_TO_PWM,OUTPUT)             #Set PIN_ TO_ PWM is OUTPUT
output mode
wiringpi.softPwmCreate(PIN_TO_PWM,0,100)        #Range is 0-100
while 1:
        wiringpi.softPwmWrite(PIN_TO_PWM,0)
        time.sleep(1)
```

```
        wiringpi.softPwmWrite(PIN_TO_PWM,50)
        time.sleep(1)
        wiringpi.softPwmWrite(PIN_TO_PWM,0)
```

You can set the duty cycle between 0-100 in the code, 0 is off, and 100 is the brightest

```
wiringpi.softPwmWrite(PIN_TO_PWM,50)
```

Step2: Save and run code

```
python3 pwm.py
```

4.Experimental effect

After running the program, you can see that the searchlight is on and off for one second.