

## Project 3: PWM LED brightness control

Dear all, now let's begin our second project of Raspberry Pi Starter Kit with Keyes robot. First, enter the project 2 file, same way as in project 1. In this project, we need to use Wiring Pi library (see attachment for detailed installation). Also, we will begin to learn about a simple Nano editor for checking and editing our C file. Of course, you can use Vim, a powerful editor.

```
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $ ls
pwm.c
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $ nano pwm.c
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $ gcc -Wall -o pwm pwm.c -lwiringPi
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $ ls
pwm  pwm.c
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $ gpio readall
```

BCM	wPi	Name	Mode	V	Physical	V	Mode	Name	wPi	BCM
		3.3v			1	2		5v		
2	8	SDA.1	ALTO	1	3	4		5V		
3	9	SCL.1	ALTO	1	5	6		0v		
4	7	GPIO. 7	IN	1	7	8	1	ALTO	15	14
		0v			9	10	1	ALTO	16	15
17	0	GPIO. 0	IN	0	11	12	0	IN	1	18
27	2	GPIO. 2	IN	0	13	14		0v		
22	3	GPIO. 3	IN	0	15	16	0	IN	4	23
		3.3v			17	18	0	IN	5	24
10	12	MOSI	ALTO	0	19	20		0v		
9	13	MISO	ALTO	0	21	22	0	OUT	6	25
11	14	SCLK	ALTO	0	23	24	1	ALTO	10	8
		0v			25	26	1	ALTO	11	7
28	17	GPIO.17	IN	0	51	52	0	IN	18	29
30	19	GPIO.19	IN	0	53	54	0	IN	20	31
BCM	wPi	Name	Mode	V	Physical	V	Mode	Name	wPi	BCM

```
pi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $ sudo ./pwm
Raspberry Pi wiringPi PWM test program
^Cpi@raspberrypi: ~/树莓派基础套件程序资料/第三课 PWM灯控制/ $
```

Pic. 1

```
pi@raspberrypi: ~/... PWM 带灯
GNU nano 2.2.6 File: pwm.c

int bright ;

printf ("Raspberry Pi wiringPi PWM test program\n") ;

if (wiringPiSetup () == -1)
    exit (1) ;

pinMode (1, PWM_OUTPUT) ;

for (;;)
{
    for (bright = 0 ; bright < 1024 ; ++bright)
    {
        pwmWrite (1, bright) ;
        delay (1) ;
    }

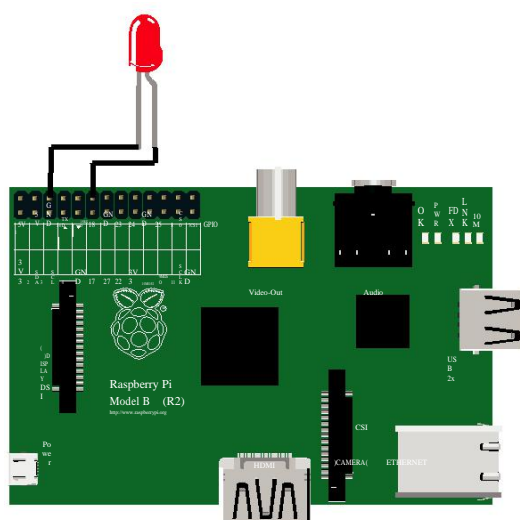
    for (bright = 1023 ; bright >= 0 ; --bright)
    {
        pwmWrite (1, bright) ;
        delay (1) ;
    }
}

return 0 ;
}
```

[ Read 58 lines ]

^G Get Help	^O WriteOut	^R Read File	^Y Prev Page	^K Cut Text	^C Cur Pos
^X Exit	^J Justify	^W Where Is	^V Next Page	^U UnCut Text	^T To Spell

Pic. 2



Pic. 3