

Project 22: 1602 LCD (python version)

```
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ ls
b1602.py c1602.py
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ nano b1602.py
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ nano c1602.py
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ nano guide22
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ nano guide22
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ nano c1602.py
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ nano guide22
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ 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	OUT	0	7	8	1	ALTO	15	14
		0v			9	10	1	ALTO	16	15
17	0	GPIO. 0	OUT	0	11	12	0	OUT	GPIO. 1	1
27	2	GPIO. 2	OUT	0	13	14		0v		
22	3	GPIO. 3	OUT	0	15	16	1	OUT	GPIO. 4	4
		3.3v			17	18	1	OUT	GPIO. 5	5
10	12	MOSI	OUT	0	19	20		0v		
9	13	MISO	OUT	0	21	22	0	OUT	GPIO. 6	6
11	14	SCLK	OUT	0	23	24	1	ALTO	CE0	10
		0v			25	26	1	ALTO	CE1	11
28	17	GPIO.17	IN	0	51	52	0	IN	GPIO.18	18
30	19	GPIO.19	IN	0	53	54	0	IN	GPIO.20	20

```
pi@raspberrypi: ~/树莓派基础套件程序资料/第二十二课 1602液晶python版本 $ sudo python b1602.py
b1602.py:68: RuntimeWarning: This channel is already in use, continuing anyway. Use GPIO.setwarnings(False) to disable warnings.
  self.GPIO.setup(self.pin_e, GPIO.OUT)
b1602.py:69: RuntimeWarning: This channel is already in use, continuing anyway. Use GPIO.setwarnings(False) to disable warnings.
  self.GPIO.setup(self.pin_rs, GPIO.OUT)
b1602.py:72: RuntimeWarning: This channel is already in use, continuing anyway. Use GPIO.setwarnings(False) to disable warnings.
  self.GPIO.setup(pin, GPIO.OUT)
```

Pic. 1

```
pi@raspberrypi: ~/... 1602 又 式 ython 脚本
GNU nano 2.2.6 File: c1602.py

LCD_CURSORMOVE = 0x00

# flags for display/cursor shift
LCD_DISPLAYMOVE = 0x08
LCD_CURSORMOVE = 0x00
LCD_MOVERIGHT = 0x04
LCD_MOVELEFT = 0x00

# flags for function set
LCD_8BITMODE = 0x10
LCD_4BITMODE = 0x00
LCD_2LINE = 0x08
LCD_1LINE = 0x00
LCD_5x10DOTS = 0x04
LCD_5x8DOTS = 0x00

def __init__(self, pin_rs=14, pin_e=15, pins_db=[17, 18, 27, 22], GPIO = None):
    # Emulate the old behavior of using RPi.GPIO if we haven't been given
    # an explicit GPIO interface to use
    if not GPIO:
        import RPi.GPIO as GPIO
        self.GPIO = GPIO
        self.pin_rs = pin_rs
        self.pin_e = pin_e
        self.pins_db = pins_db

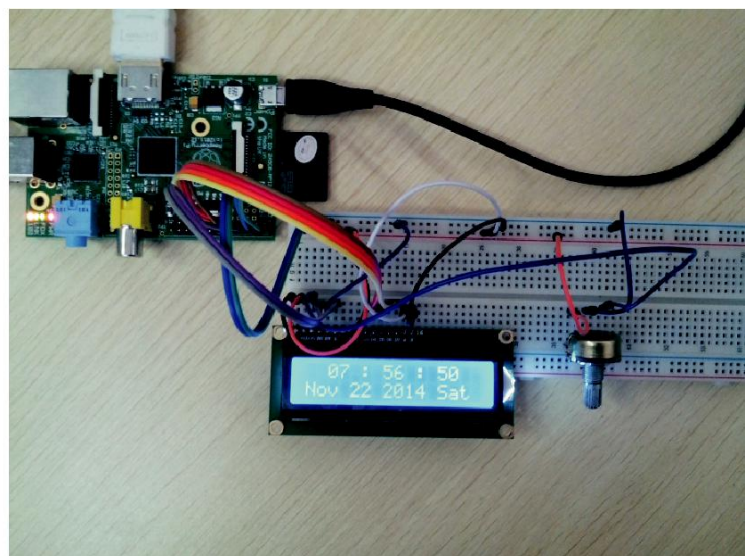
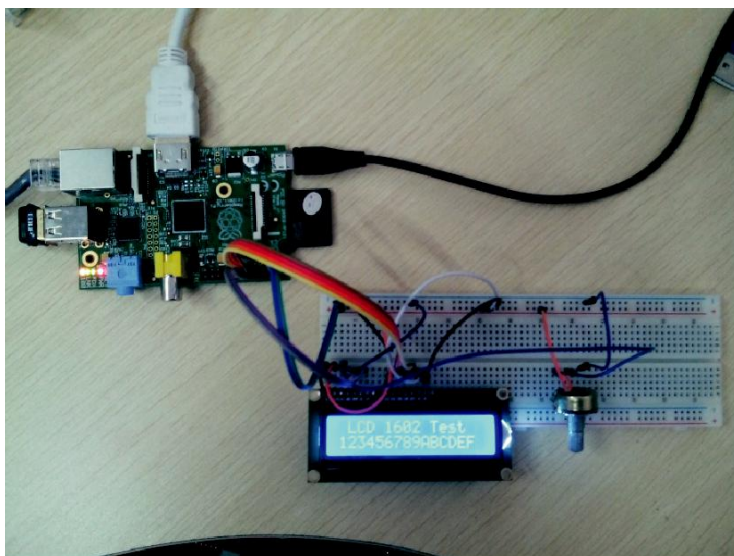
        self.GPIO.setmode(GPIO.BCM)
        self.GPIO.setup(self.pin_e, GPIO.OUT)
        self.GPIO.setup(self.pin_rs, GPIO.OUT)

        for pin in self.pins_db:
            self.GPIO.setup(pin, GPIO.OUT)

        self.write4bits(0x33) # initialization
        self.write4bits(0x32) # initialization
        self.write4bits(0x28) # 2 line 5x7 matrix
        self.write4bits(0x0C) # turn cursor off 0x0E to enable cursor
        self.write4bits(0x06) # shift cursor right

[ Read 264 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