Relay

Overview

This course will use relay module to control LED.

Experimental Materials:

Raspberry Pi *1

5mm red LED light *1

T-type expansion board *1

220 ohm resistor *1

Breadboard*1

Relay *1

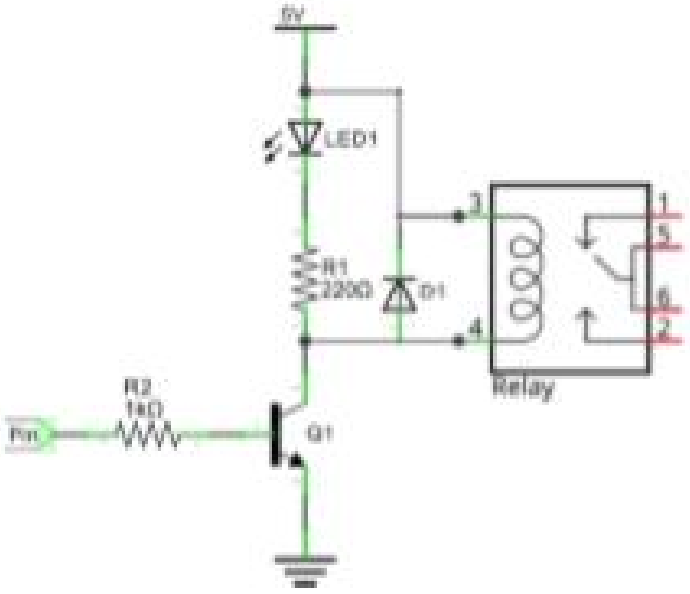
Some DuPont lines

Product description：

Relay

Relay is a safe switch which can use low power circuit to control high power circuit.

The reference circuit for relay is as follows:



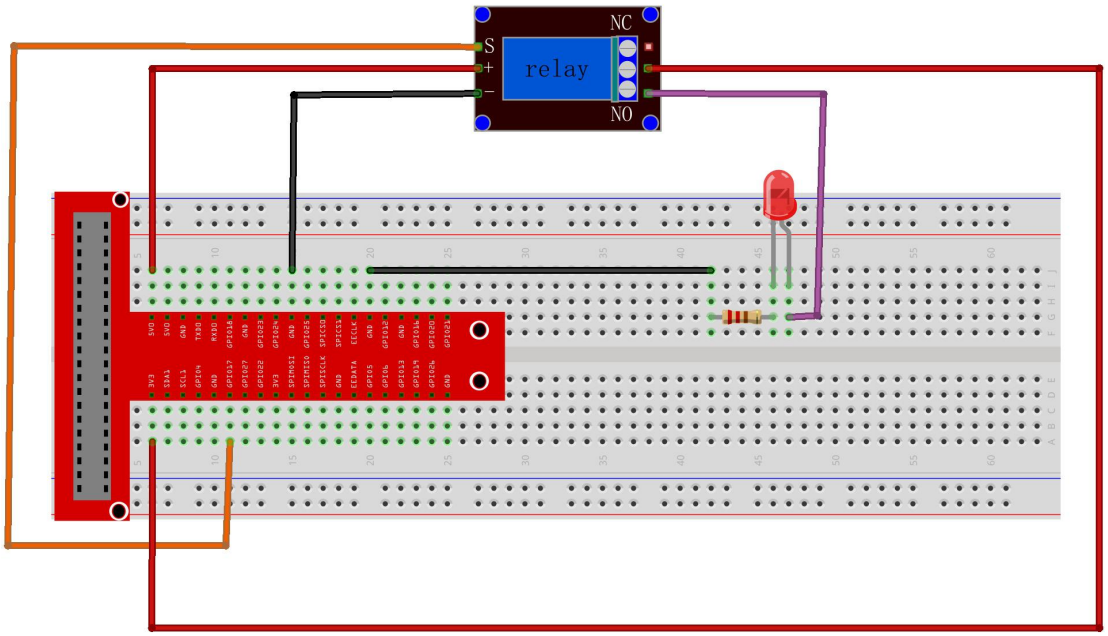
Technical Parameters:

Trigger mode:High level trigger

Voltage:5V

Maximum load: AC 250V/10A- DC 30V/10A

Wiring diagram：



C code：

```
#include <wiringPi.h>
#include <stdio.h>

#define RelayPin      0

int main(void)
{
    if(wiringPiSetup() == -1){ //when initialize wiring failed,print messageto
screen
        printf("setup wiringPi failed !");
        return 1;
    }


    pinMode(RelayPin, OUTPUT);
```

```
    while(1){
            digitalWrite(RelayPin, HIGH);
            delay(1000);
            digitalWrite(RelayPin, LOW);
            delay(1000);
    }

    return 0;
}
```

Python code：

```
#!/usr/bin/env python
import RPi.GPIO as GPIO
import time

RelayPin = 11    # pin11

def setup():
    GPIO.setmode(GPIO.BOARD)       # Numbers GPIOs by physical location
    GPIO.setup(RelayPin, GPIO.OUT)
    GPIO.output(RelayPin, GPIO.HIGH)

def loop():
    while True:
        print '...relayd on'
        GPIO.output(RelayPin, GPIO.HIGH)
        time.sleep(0.5)
        print 'relay off...'
        GPIO.output(RelayPin, GPIO.LOW)
        time.sleep(0.5)

def destroy():
    GPIO.output(RelayPin, GPIO.HIGH)
    GPIO.cleanup()                     # Release resource

if __name__ == '__main__':     # Program start from here
    setup()
    try:
        loop()
    except KeyboardInterrupt:  # When 'Ctrl+C' is pressed, the child program
```

```
destroy() will be  executed.
        destroy()
```

Experimental results:

In the directory where the code file is located, execute the following command

C:

```
gcc -Wall -o relay relay.c -lwiringPi
sudo ./relay
```

Python:

```
python relay.py
```

When the relay opens, the LED lights up, and when the relay closes, the LED goes out.