

# Lesson 10 Slide Switch

## Introduction

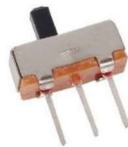
In this lesson, we will learn how to use a Slide Switch. Usually, the slide switch is soldered on PCB as a power switch, but here we need to insert it into the breadboard, thus it may not be tightened. And we use it on the breadboard is to show its function.

## Components

- 1 \* Raspberry Pi
- 1 \* T-Extension Board
- 1 \* 40-Pin GPIO Cable
- 1 \* Breadboard
- 1 \* Slide Switch
- 2 \* LED
- 3 \* Resistors (220Ω,10kΩ)
- 1 \* USB cable
- Jumper wires
- 1 \* 104 Capacitor Ceramic

## Principle

### Slide Switch

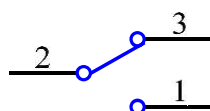


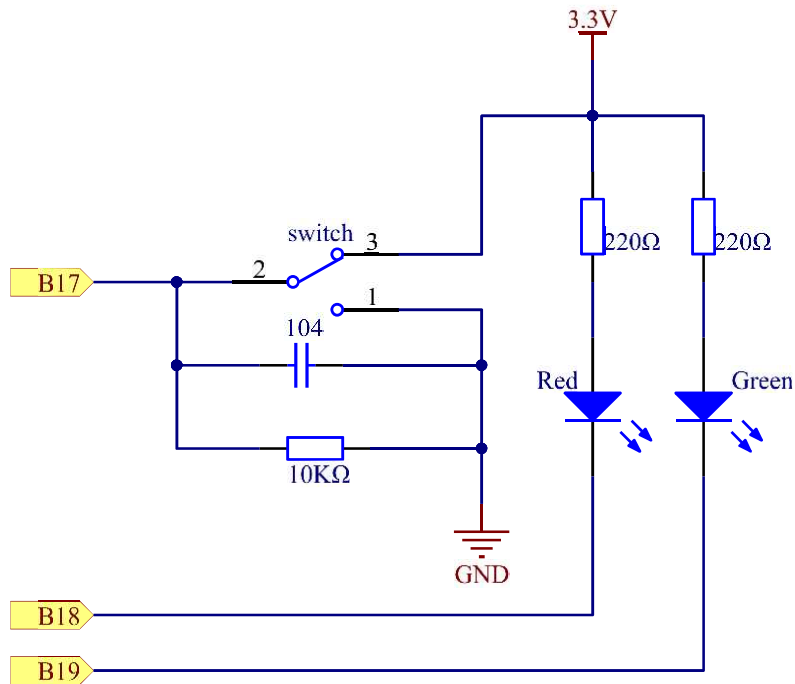
A slide switch, just as its name implies, is to slide the switch bar to **connect** or **break** the circuit, and further switch circuits. The common-used types are SPDT, SPTT, DPDT, DPTT etc. The Slide Switch is commonly used in low-voltage circuit. It features flexibility and stability, and widely applies in electric instruments and electric toys.

How it works: Use the middle pin as the fixed one. When you pull the slide to the left, the left two pins are connected; to the right, the right two pins connected. Thus, it connects and disconnects circuits as a switch. See the figure below:



The circuit symbol of the slide switch is as shown below. 2 in the figure means the middle pin.

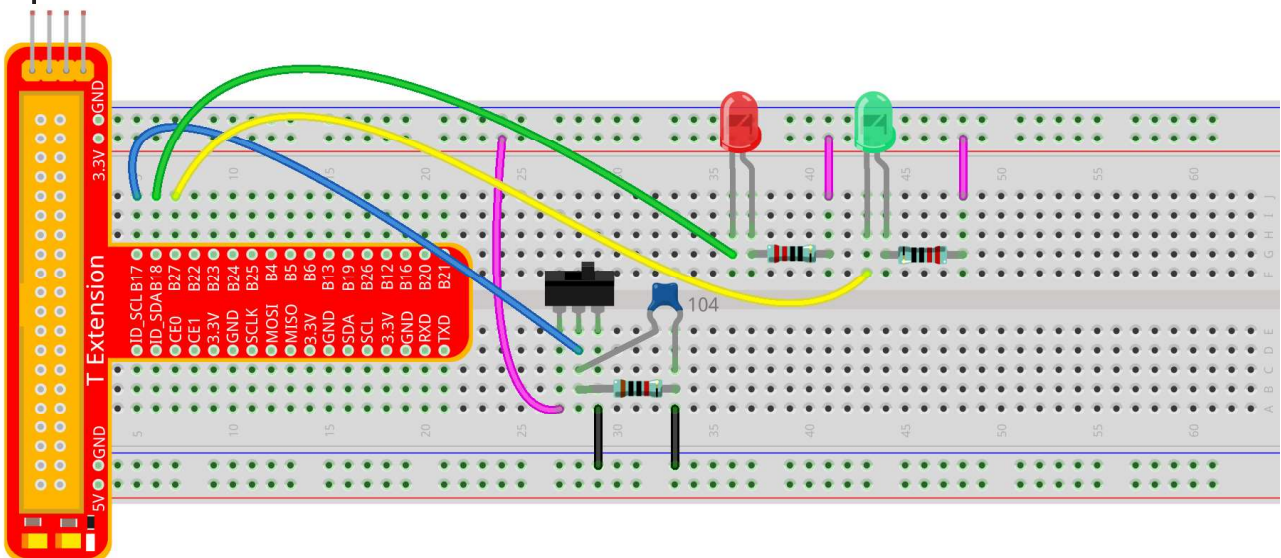




**Principle:** Connect the middle pin of the Slide Switch to B17, and two LEDs to pin B18 and B27 respectively. Then when you pull the slide, you can see the two LEDs light up alternately.

## Experimental Procedures

**Step 1:** Build the circuit



**For C language users:**

**Step 2:** Go to the folder of the code.

```
cd /home/pi/SunFounder_Super_Kit_V3.0_for_Raspberry_Pi/C
```

**Step 3:** Compile

```
make 10_slideSwitch
```

**Step 4:** Run the executable file above.

```
sudo ./10_slideSwitch
```

## Code Explanation

```
// When the slide is pulled to the left, the middle pin and left one are connected; the Raspberry Pi reads a high level at the middle pin, so the LED1 is on and LED2 off
if(digitalRead(slidePin) == 1){
    digitalWrite(led1, LOW);
    digitalWrite(led2, HIGH);
    printf("LED1 on\n");
}
// When the slide is pulled to the right, the middle pin and right one are connected; the Raspberry Pi reads a low, so the LED2 is on and LED1 off
if(digitalRead(slidePin) == 0){
    digitalWrite(led2, LOW);
    digitalWrite(led1, HIGH);
    printf(".....LED2 on\n");
}
```

## For Python users:

**Step 2:** Get into the folder of the code

```
cd /home/pi/SunFounder_Super_Kit_V3.0_for_Raspberry_Pi/Python
```

**Step 3:** Run

```
sudo python 10_slideSwitch.py
```

## Code Explanation

When the slide is pulled to the left, the middle pin and left one are connected; the Raspberry Pi reads a high level at the middle pin, so the LED1 is on and LED2 off.

```
if GPIO.input(slidePin) == 1:
    print 'LED1 ON (High Value)'
    GPIO.output(led1Pin, GPIO.LOW)
    GPIO.output(led2Pin, GPIO.HIGH)
```

When the slide is pulled to the right, the middle pin and right one are connected; the Raspberry Pi reads a low, so the LED2 is on and LED1 off.

```
if GPIO.input(slidePin) == 0:
    print 'LED2 ON (Low Value)'
    GPIO.output(led2Pin, GPIO.LOW)
    GPIO.output(led1Pin, GPIO.HIGH)
```

Now pull the slide, and you can see the two LEDs light up alternately.

