Button

★ Overview

Pushbuttons or switches connect two points in a circuit when you press them. This example turns on the built-in LED on pin 13 when you press the button.

★ Specification

Size: 6 x 6 x 5mm

Temperature: -30 ~ +70 Centigrade

★ Hardware required

Material diagram	Material name	Number
	Button	1
	10KΩ resistor	1
	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

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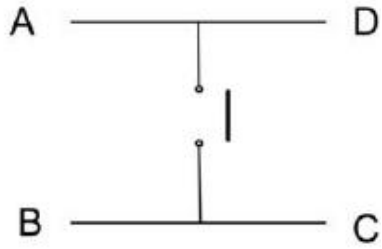
Component Introduction



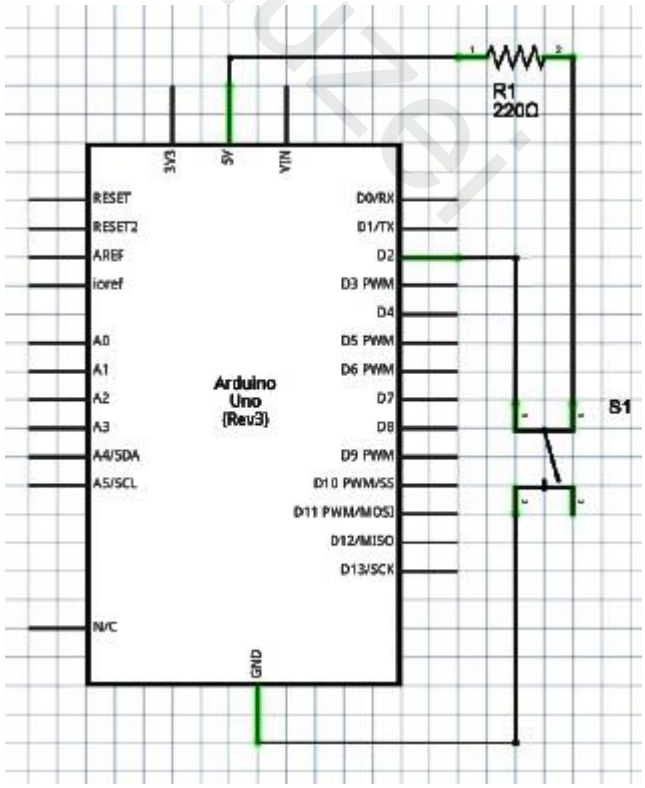
Actually, there are only really two electrical connections, as inside the switch package pins B and C are connected together, as are A and D.

Principle

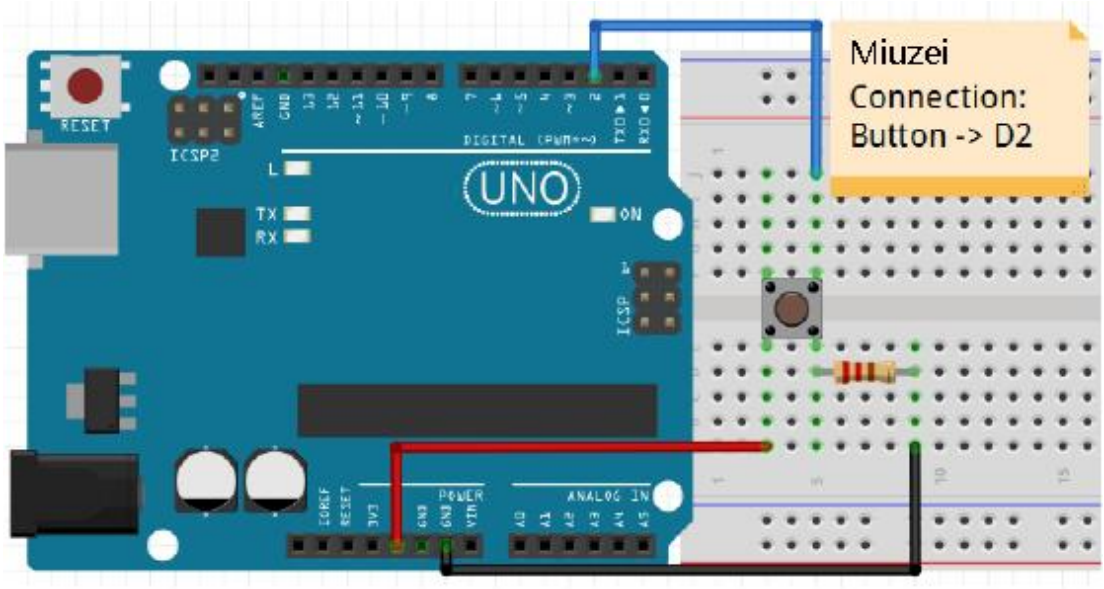
Button and number 13 port have the built-in LED simple circuit. To produce a switch flasher, we can use connect the digital port 13 to the built-in LED and connect the Button port to number2 port of Uno board. When the switch sensing, LED twinkle light to the switch signal.

Connection

★ **Schematic**



★ Connection diagram



Connect three wires to the board. The first two, red and black, connect to the two long vertical rows on the side of the breadboard to provide access to the 5 volt supply and ground. The third wire goes from digital pin 2 to one leg of the pushbutton. That same leg of the button connects through a pull-down resistor (here 10K ohm) to ground. The other leg of the button connects to the 5 volt supply.

When the pushbutton is open (unpressed) there is no connection between the two legs of the pushbutton, so the pin is connected to ground (through the pull-down resistor) and we read a LOW. When the button is closed (pressed), it makes a connection between its two legs, connecting the pin to 5 volts, so that we read a HIGH.

You can also wire this circuit the opposite way, with a pullup resistor keeping the input HIGH, and going LOW when the button is pressed. If so, the behavior of the sketch will be reversed, with the LED normally on and turning off when you press the button.

If you disconnect the digital I/O pin from everything, the LED may blink erratically. This is because the input is "floating" - that is, it will randomly return either HIGH or LOW. That's why you need a pull-up or pull-down resistor in the circuit.

★ Sample code

Note : sample code under the **Sample code** folder

```
// constants won't change. They're used here to
// set pin numbers:
const int buttonPin = 2;      // the number of the pushbutton pin
const int ledPin = 13;        // the number of the LED pin

// variables will change:
int buttonState = 0;
void setup() {
      // initialize the LED pin as an output:
      pinMode(ledPin, OUTPUT);
      // initialize the pushbutton pin as an input:
      pinMode(buttonPin, INPUT);
}

void loop() {
      // read the state of the pushbutton value:
      buttonState = digitalRead(buttonPin);
      // check if the pushbutton is pressed.
      // if it is, the buttonState is HIGH:
      if (buttonState == HIGH) {
            // turn LED on:
            digitalWrite(ledPin, HIGH);
      } else {
            // turn LED off:
            digitalWrite(ledPin, LOW);
      }
}
```

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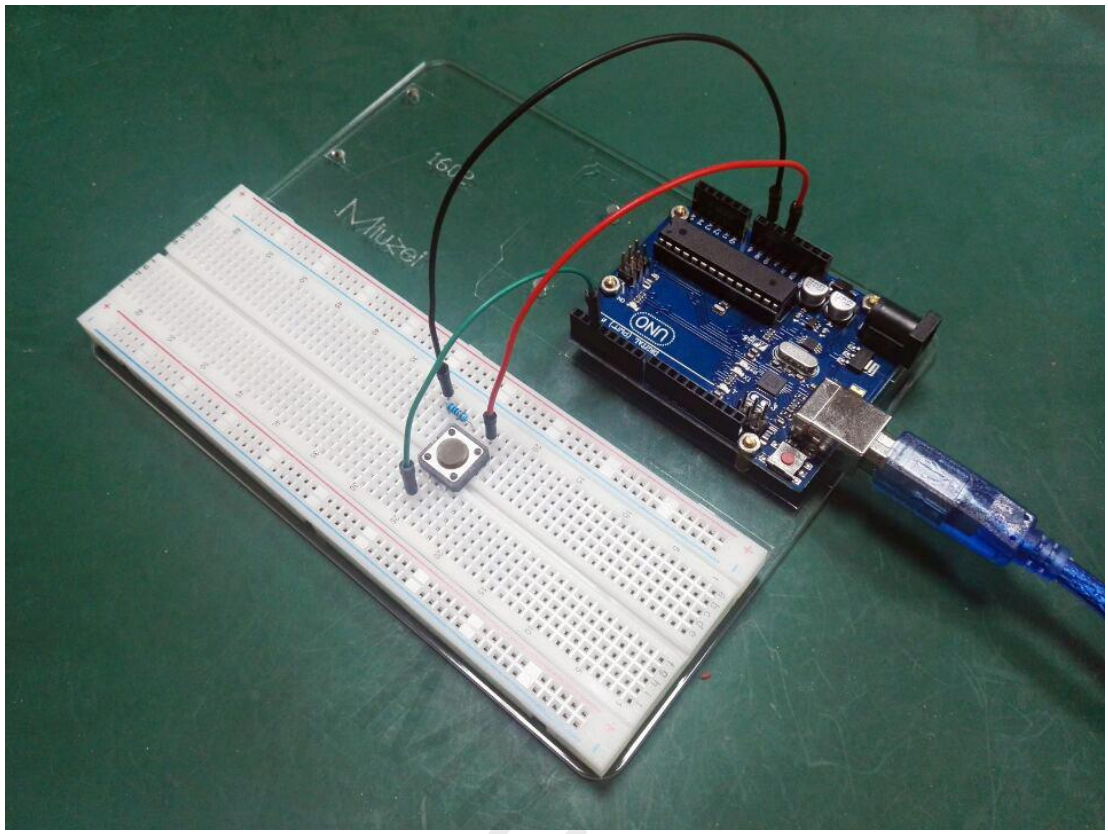
★ Example picture



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★ Language reference

Tips：click on the following name to jump to the web page.
If you fail to open, use the Adobe reader to open this document.

const
INPUT

★ Application effect

When you press the button, the built-in LED will light up, release is extinguished.

About Miuzei:

Miuzei found in 2011，which is a professional manufacturer and exporter that concerned with open-source hardware research & product development, We have more than hundred engineers devote to developing open source hardware like Arduino, Raspberry pi ,3d printers，robots.

Miuzei committed to make more creative open source products and provide richer knowledge for enthusiasts worldwide. No matter what your ideas are, we provide various mechanical parts and electronic modules to turn your ideas into success.

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