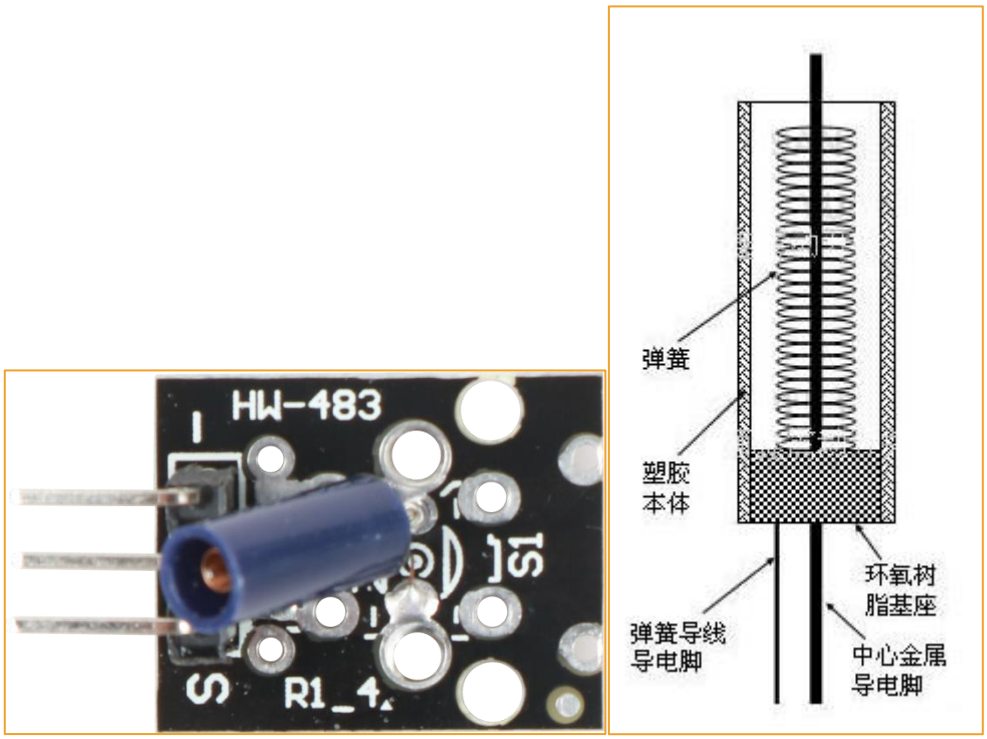
Vibration sensor module anti-theft alarm experiment

Introduction of vibration sensor module

The essence of the vibration sensor module is a switch, and its internal is a metal sheet and a spring. When the product does not vibrate, the vibration switch is disconnected, and the output end outputs a high level. When the product vibrates, the vibrate switch is transiently switched on due to the spring and metal sheet, and the output end outputs low level; The output terminal can be directly connected with the single-chip microcomputer, through the single-chip microcomputer to detect the high and low level, from this to detect whether the environment has vibration, play an alarm role.



vibration sensor module

Internal picture of vibration sensor

Experimental purpose

- Understand the working principle of vibration sensor module;
- Use Arduino to control vibration sensor to realize anti-theft alarm function.

The component list

- Keywish Arduino Uno R3 motherboard *1
- Breadboard
- USB cable *1
- Vibration sensor module* 1
- LED module*1
- Jumper wires
- active buzzer *1

The experimental principle

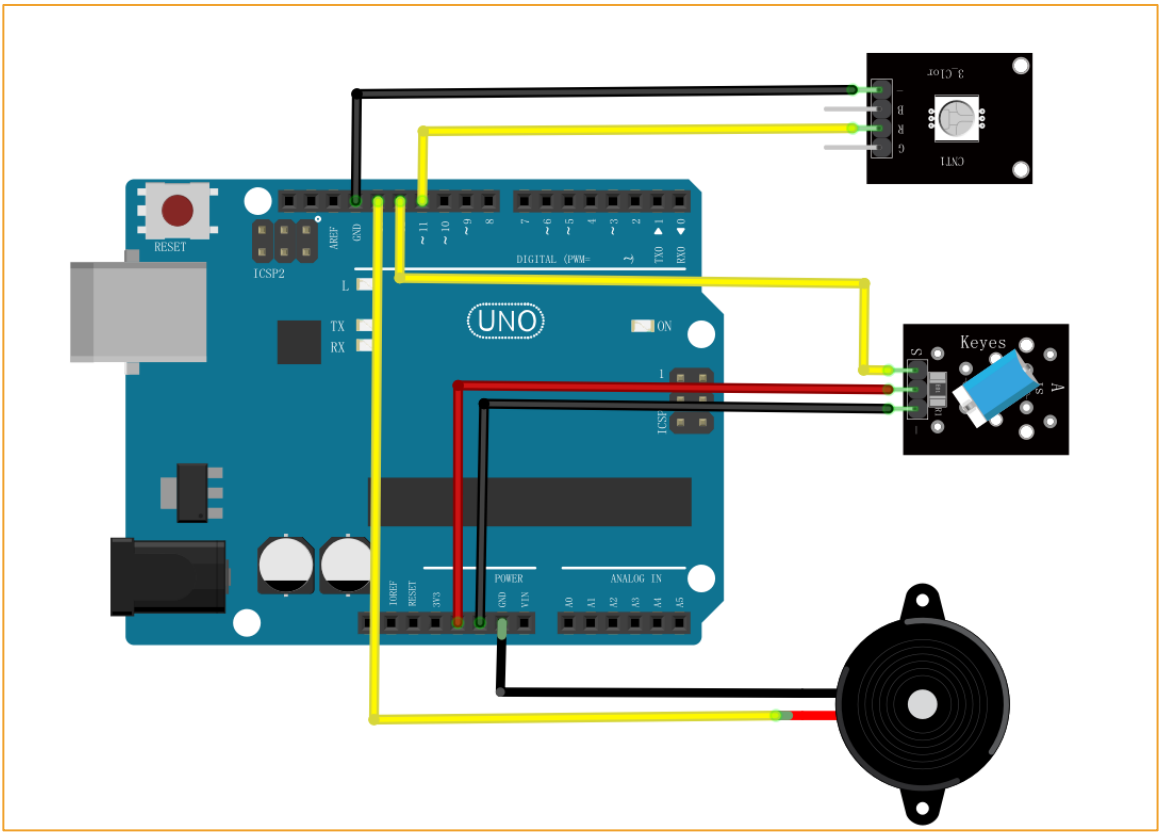
Using the working characteristics of the vibration switch, when the circuit board is in the static state, the vibration switch is in the off state. When an external force touches the circuit board, the spring vibrates, causing the spring and the wire to contact, thus leading to the alarm, the LED lights, and the buzzer sounds. When the vibration switch returns to a static state, the LED goes off and the buzzer stops ringing.

Wiring

Arduino UNO	Active buzzer
13	+
GND	-

Arduino UNO	LED
12	+
GND	—

Arduino UNO	Vibration switch module
nkai12	DO
5V	VCC(+)
GND	GND(-)

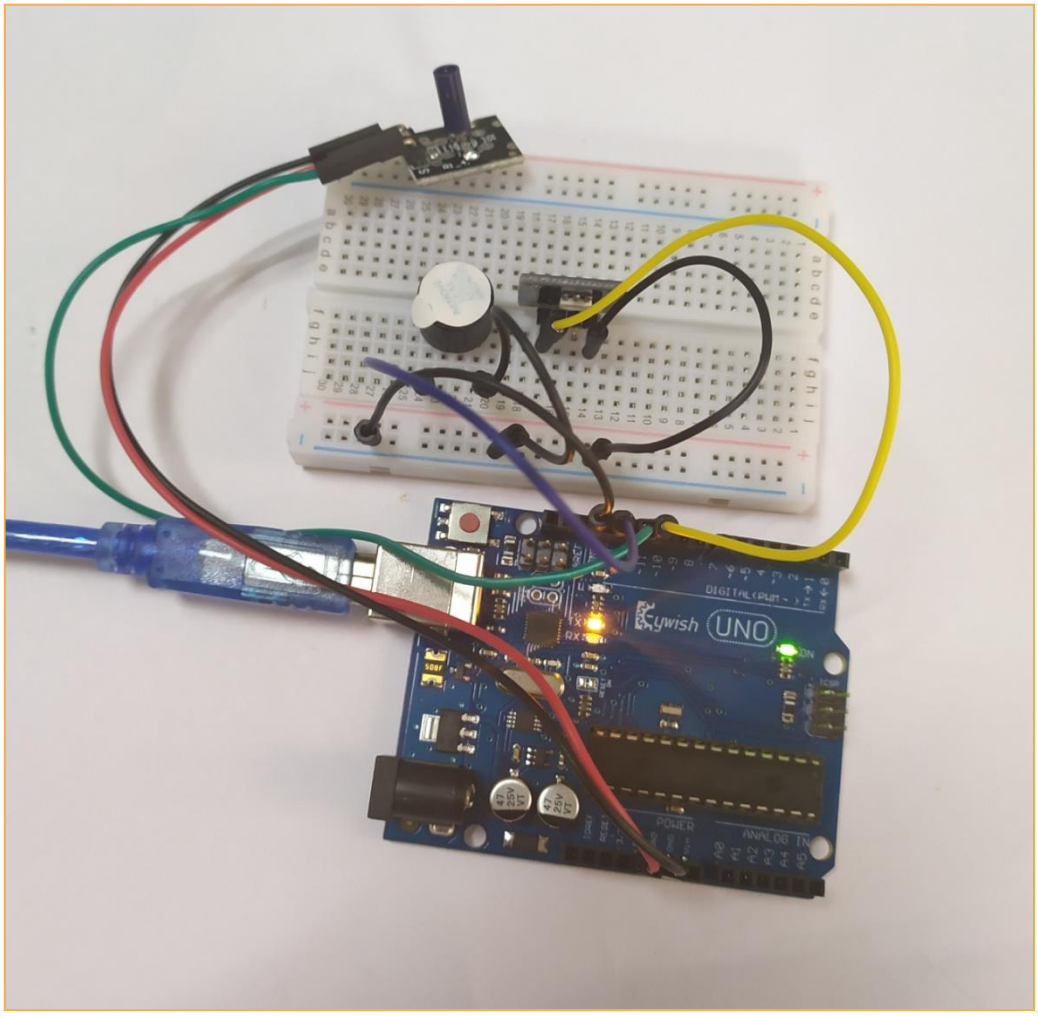


Anti-theft alarm program Code

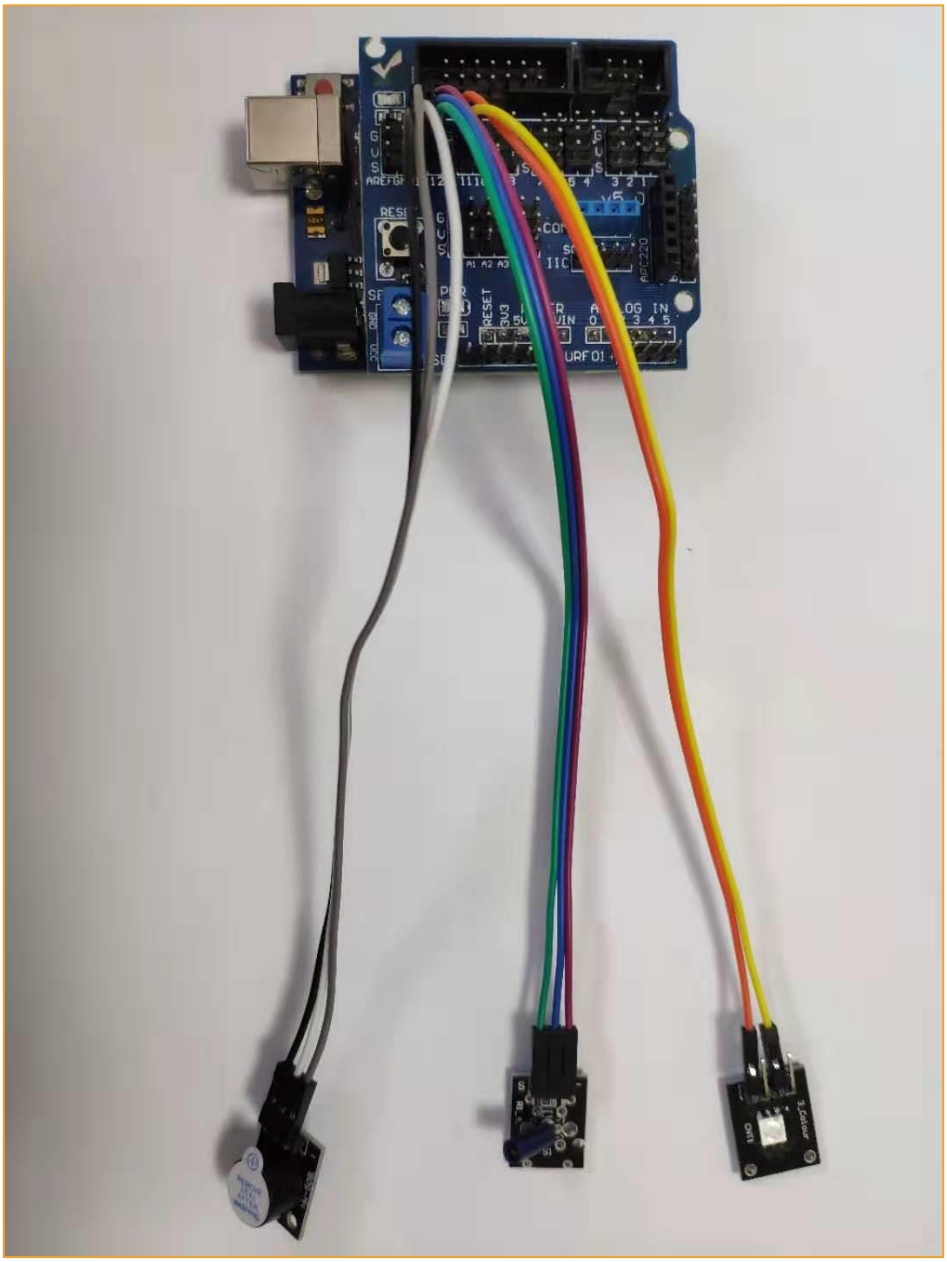
```
int Led=11;
```
```
int
```

```
int Buzzer_pin=13;
int buttonpin=12;
int val=0;
void setup()
{
  pinMode(Led,OUTPUT);
  pinMode(Buzzer_pin,OUTPUT);
  pinMode(buttonpin,INPUT);
}
void loop()
{
  val=digitalRead(buttonpin);
  if(val==0)
     {
       digitalWrite(Led,HIGH);
      digitalWrite(Buzzer_pin,HIGH);
      delay(3000);
     }
  else
     {
       digitalWrite(Led,LOW);
       digitalWrite(Buzzer_pin,LOW);
     }
}
```

Experiment Result



If you have an extension board for Sensor V5.0 in your kit, you can wire it as shown in the figure below.

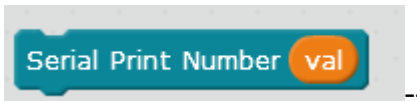


Mlock programming program

MBlock writes the program as shown in the figure below:

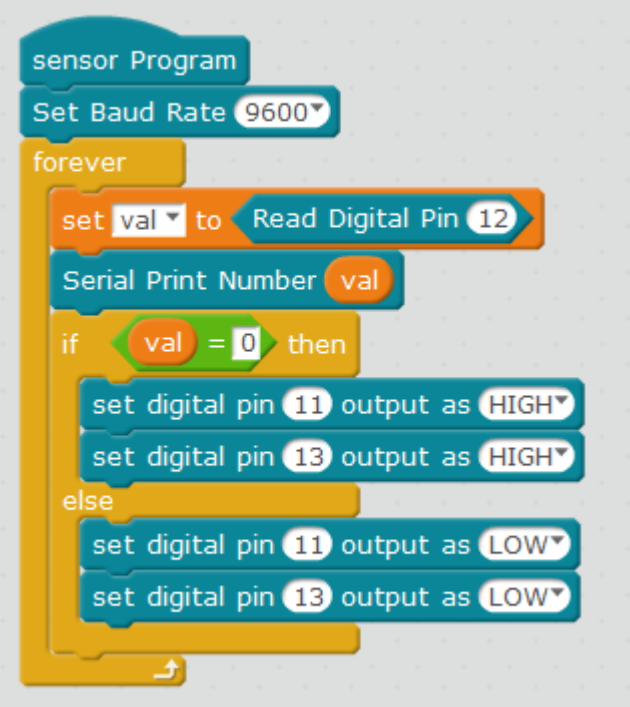
--Set variable read values

--Read the value of the numeric pin

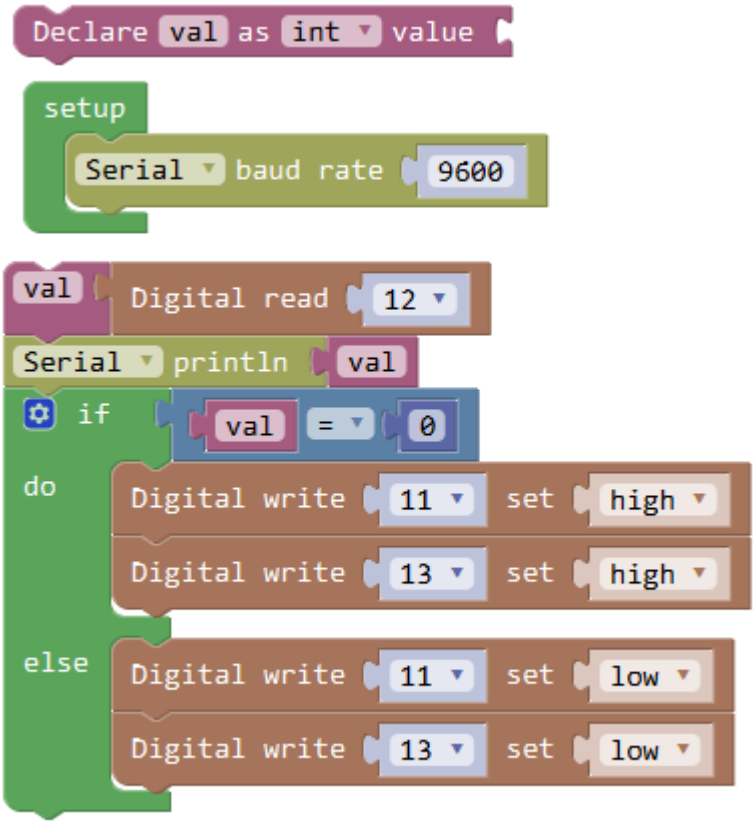


--Serial print variables

--Sets the state of the digital pin output



Mixly graphical programming program



MagicBlock graphical programming program