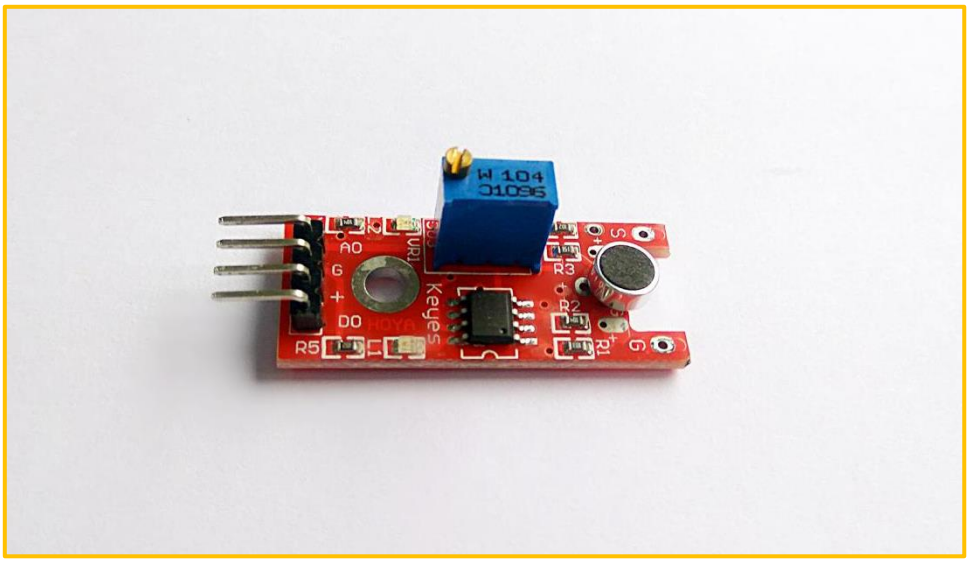
Sound sensor module experiment

Introduction of sound sensor module

The sound sensor module acts as a microphone. It is used to receive sound waves and display vibration images of sound, but it cannot measure the intensity of noise.

The sensor incorporates a sound sensitive capacitive electret microphone. Sound waves cause the electret film in the microphone to vibrate, causing a change in capacitance that produces a small voltage corresponding to the change. This voltage is then converted into A voltage of 0-5v, which is accepted by the data collector through A/D conversion and transmitted to the master chip.



sound sensor module

The experiment purpose

- Understand how sound sensors work;
- Arduino UNO board and sound sensor module are used to realize the function of sound control LED lamp.

Component List

- Keywish Arduino Uno R3 mainboard
- Breadboard
- USB cable
- LED Module*1
- Sound sensor module *1

- Jumper wires

Wiring of Circuit

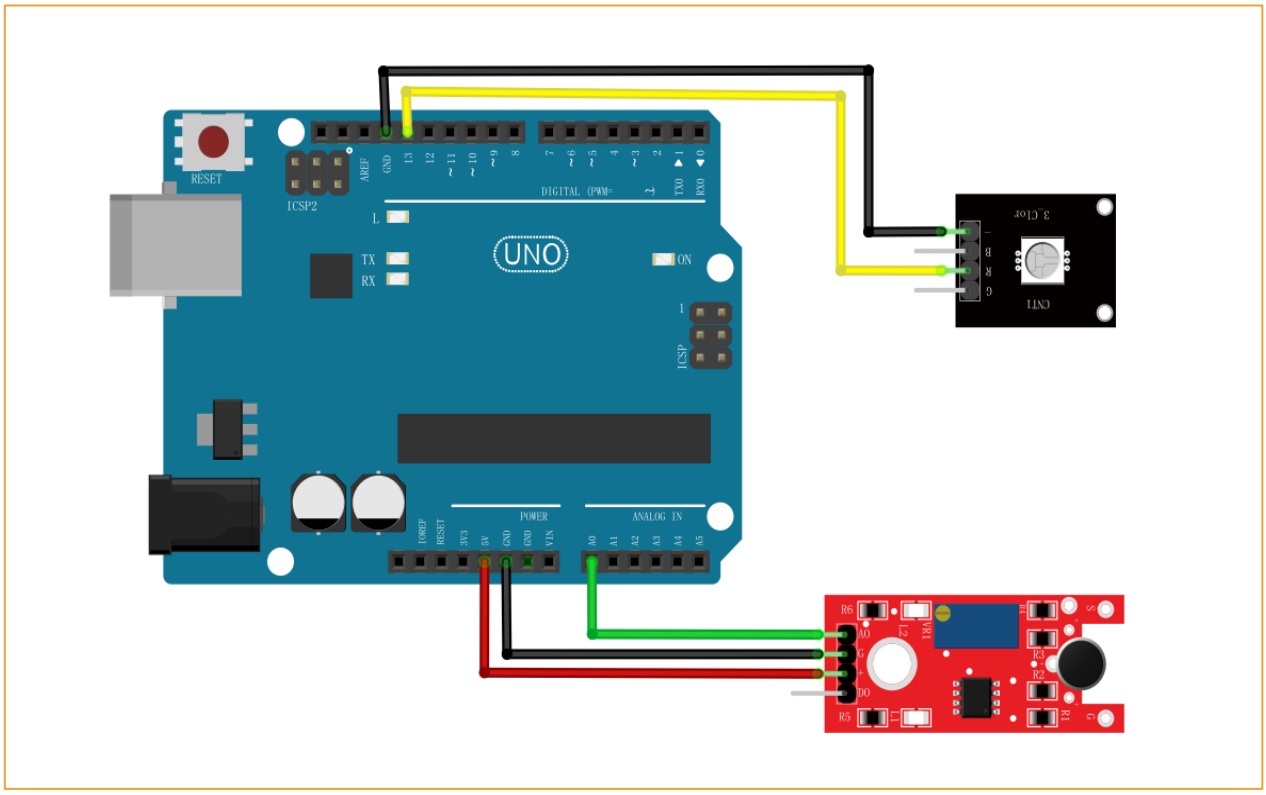
Connecting The pin AO of the sound sensor sensor to pin A0 of Arduino UNO , and the positive pole of the LED lamp was connected to pin 13 of the Arduino UNO board to complete the whole wiring of the experiment.

the sound sensor sensor

Arduino Uno	the sound sensor sensor
A5	AO
GND	G
+5V	+

LED module

Arduino Uno	LED module
GND	G
13	R



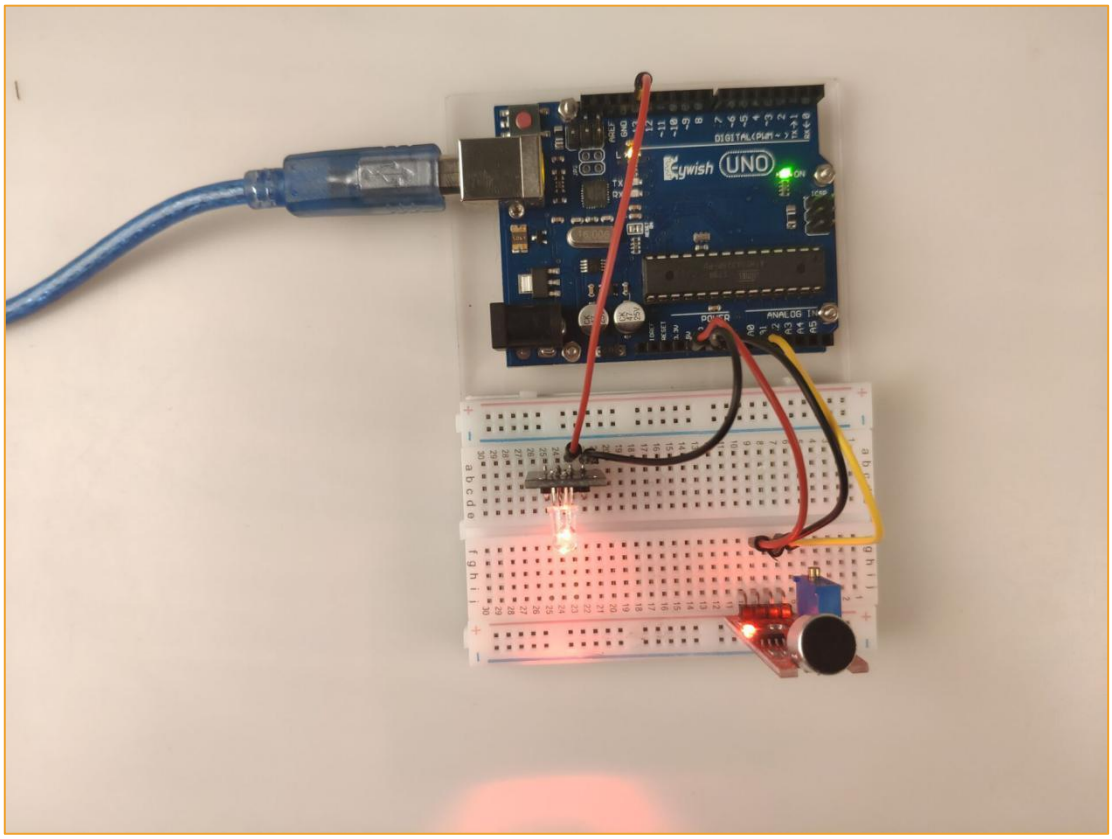
The experimental principle

When the sound sensor detects that the surrounding sound is greater than the value of the valve, it turns on the LED light, otherwise it turns off the LED light.

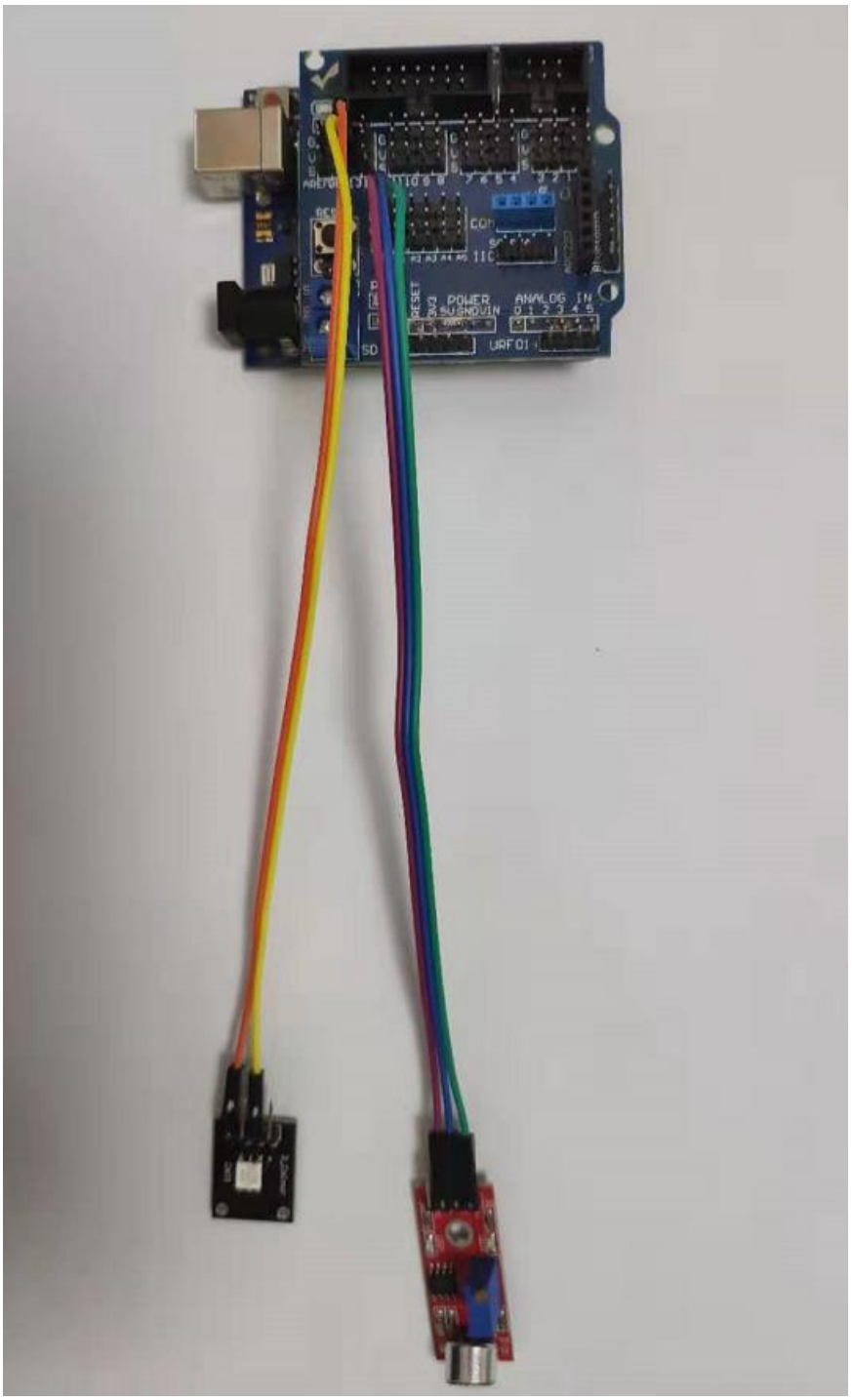
Arduino IDE Code

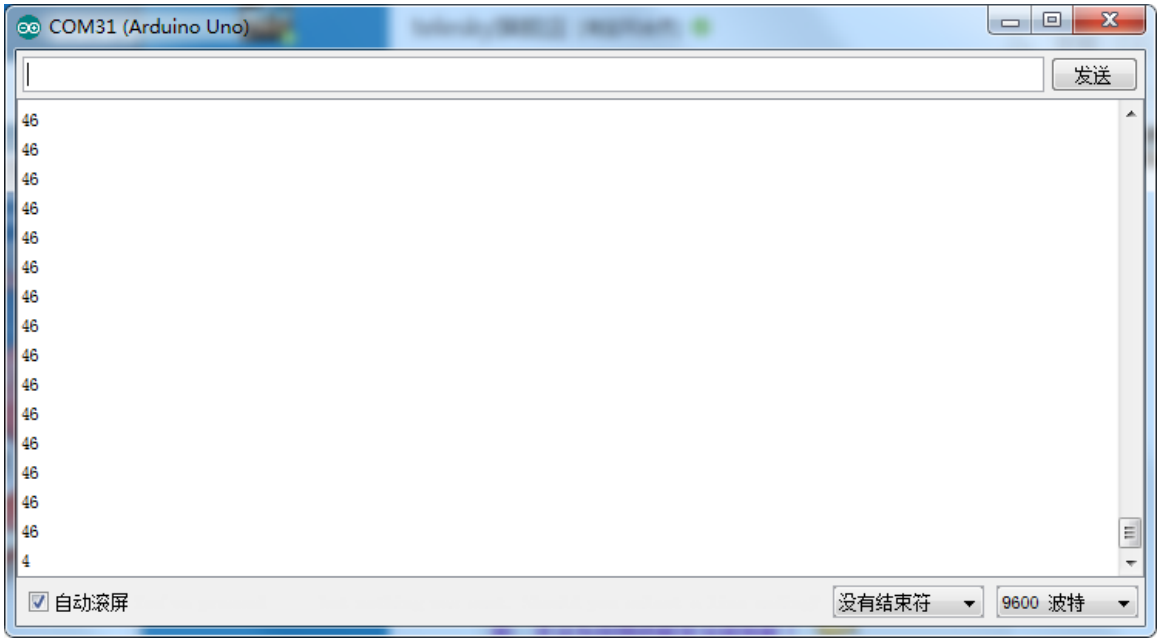
```
int Voice_pin = A0 ;     // define analog 0 pin for voice-sensor pin
int LED_PIN=13;
int val = 0;
void setup()
{
    pinMode(LED_PIN,OUTPUT);
    pinMode(Voice_pin,INPUT);
    digitalWrite(LED_PIN,LOW);
    Serial.begin(9600);
}
void loop()
{
   // val = digitalRead(Voice_pin);    // get voice-sensor analog value
     val = analogRead(Voice_pin);
    Serial.println(val);
    if( val >48)
    {
          digitalWrite(LED_PIN,HIGH);
          delay(3000);
    }
    else
    {
      digitalWrite(LED_PIN,LOW);
    }
}
```

Experiment Result



If there is a Sensor V5.0 expansion board in the kit, it is more convenient to connect according to the wiring method shown below.


POWER
ANALOG IN
RESET
3V3
5V
GND
VIN
SD



Read the decibel value of the sound sensor

MBlock graphical programming program

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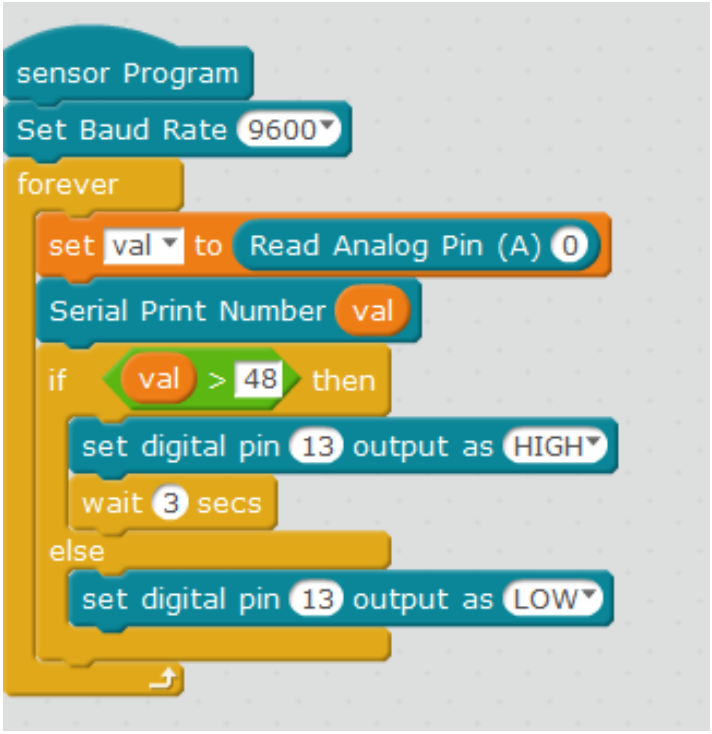
--- Read the value of the sound sensor module
- 

--- set the digital pin and output the level value
- 

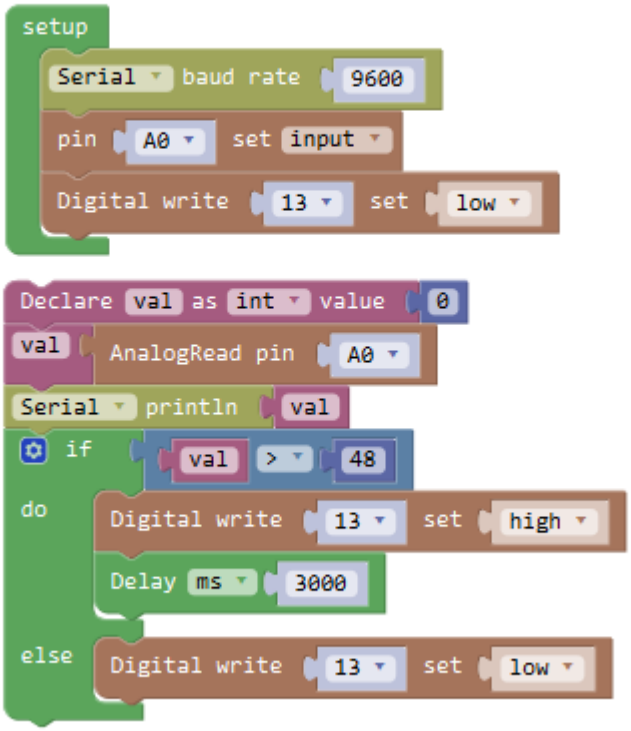
-- set baud rate
- 

-- Determine if the decibel level reaches the threshold

MBlock programmed the voice control switch as shown in the figure below:



Mixly graphical programming program



MagicBlock graphical programming program