

## Photosensitive Resistor

### Introduction

As we all know, the voice control lamp in a corridor has a sensor in addition to the voice control, that is photosensitive sensor(Photovaristor) is also known as photosensitive resistor. It(photoresistor or light - dependent resistor, which is abbreviated as LDR), is commonly made of cadmium sulphide. When the incident light rises, the resistance will reduce; the incident light weakens, the resistance will increase. Photovaristor is commonly used in light measurement, controlling and conversion( the change between light and electricity ) would change (changes in the light into electricity), it also can be widely applied in all kinds of light-controlled electric circuit, say, the control and regulating of lamp as well as optical switch.

We first carry out a relatively simple experiment of using Photovaristor. Since photovaristor is an element which can be controlled by the intensity of light, naturally it requires to read analogue value via analog interface. According to the PWM interface experiment before, we can change the potentiometer to a photovaristor, then when changing the intensity of the light, the brightness of LEDs will shift corresponding.

### Component List

- ◆ Keywish Arduino UNO R3 Mainboard
- ◆ Breadboard
- ◆ USB cable
- ◆ Photosensitive Resistor \*1
- ◆ Red LED\*1
- ◆ 10k $\Omega$  Resistor \*1
- ◆ 220 $\Omega$  Resistor \*1
- ◆ Several jumper wires

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## Wiring of Circuit

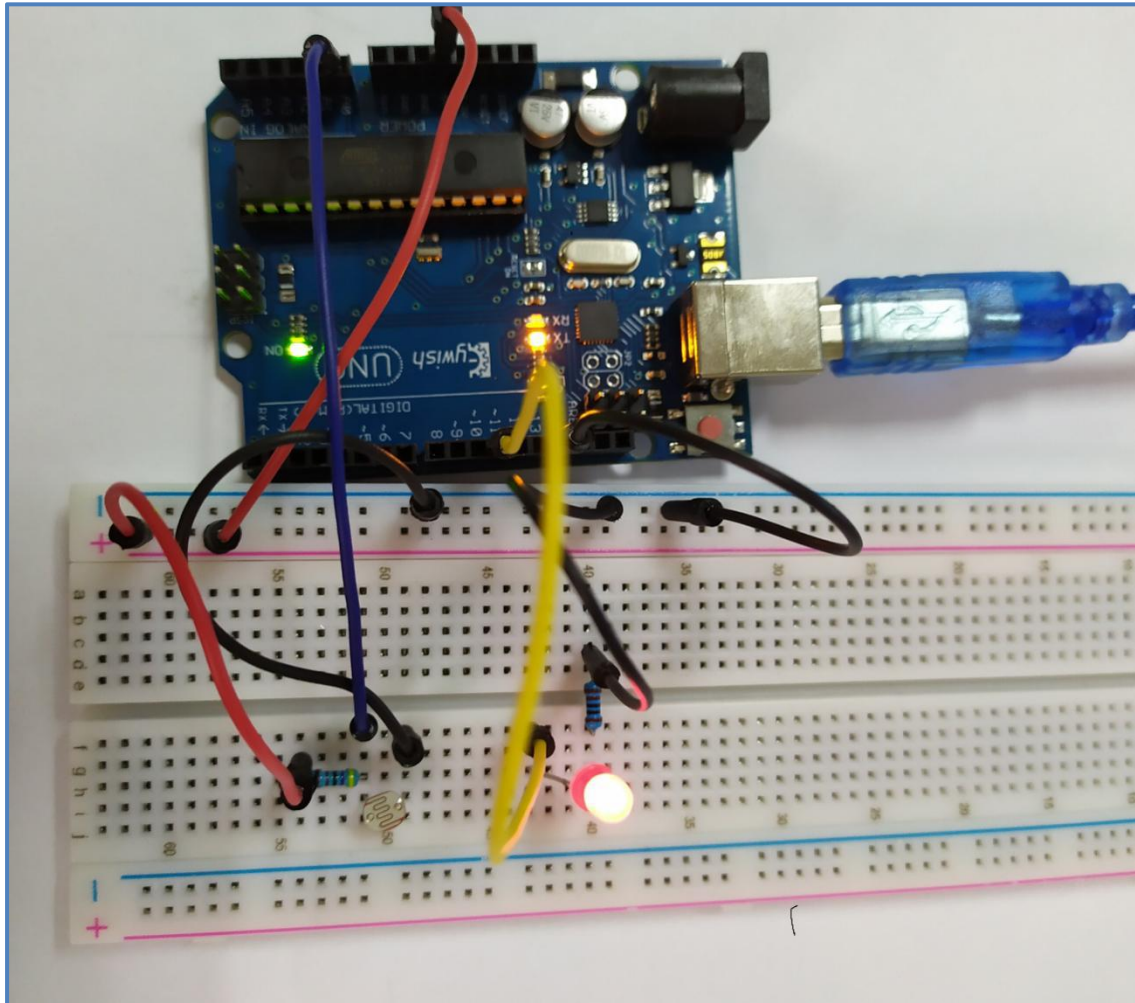
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## Code

```
int ADPIN = A0 ;
int LEDPIN = 11 ;
int value = 0 ;
float voltage = 0.0 ;
void setup()
{
    pinMode(LEDPIN,OUTPUT) ;
    Serial.begin(9600);    //Serial Baud rate is 9600
}
void loop()
{
    value = analogRead(ADPIN) ;
    voltage = ( ( float )value )/1023 ;
    value = (int)voltage * 256 ;           //convert voltage to value
    analogWrite(LEDPIN,value) ;
    delay(1000) ;
}
```

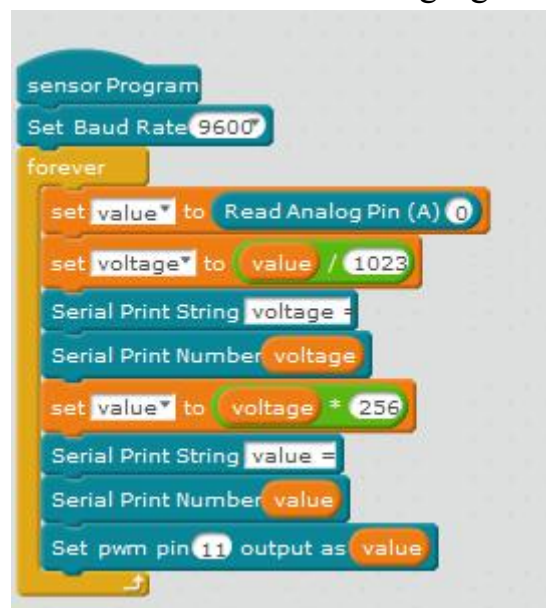
Now we measure the photovaristor with a multimeter, then cover the photovaristor and we can clearly see the change of the resistance by lighting.

## Exeripment Result



## Mblock programming program

The program written by Mblock is show in the following figure:



You can also use Mblock to open a finished program ,which is a .Sb2 file. Here's how too open it :

