

Photosensitive resistor experiment

Introduction of photosensitive resistor

As we all know, in addition to the sound control lamp in the corridor there is a sensor, that is the light sensor (Photovaristor) also known as the photosensitive resistor. It is usually made from cadmium sulfide. When the incident light rises, the resistance decreases. The incident light decreases and the resistance increases. Photosensitive resistance is commonly used to measure, control and convert (light and power) changes between the change will change (light changes into electricity), it can also be widely used in a variety of light control circuits, control and adjust the light switch lights.

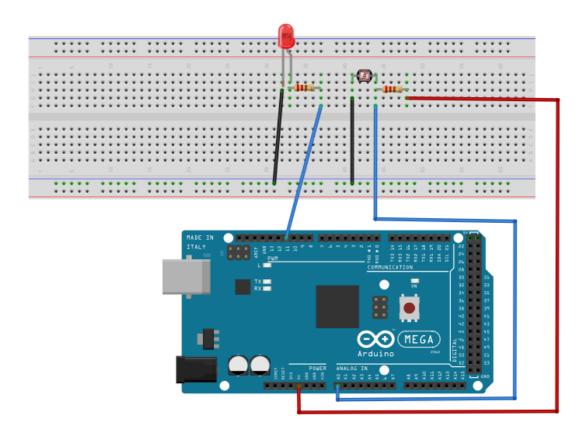
We first conducted a relatively simple experiment using a photosensitive resistor. Since the photosensitive resistor is a device that can be controlled by the intensity of light, it is necessary to read the analog value through the analog interface. Based on the previous PWM interface experiments, we can replace the potentiometer with a photosensitive resistor, and then change the intensity of the light, the brightness of the led will change accordingly.

Component List

- Keywish Arduino Mega 2560 Mainboard
- Breadboard
- USB cable
- Photosensitive Resistor *1
- ◆ LED*1
- 10kΩ Resistor *1
- 220Ω Resistor *1
- Several jumper wires



Wiring of Circuit

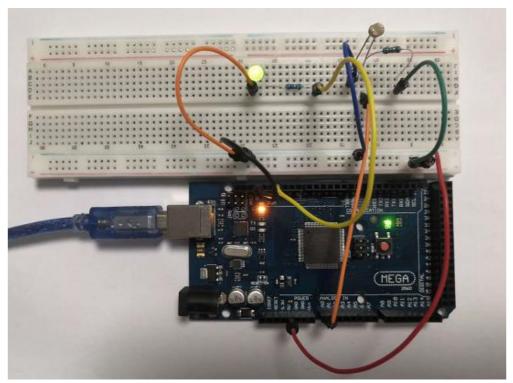




Code

```
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);
}
```

Exeripment Result





Mblock programming program

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

```
sensor Program

Set Baud Rate 9600'

forever

set value* to Read Analog Pin (A) 0

set voltage* to value / 1023

Serial Print String voltage*

Serial Print Number voltage

set value* to voltage * 256

Serial Print String value =

Serial Print Number value

Set pwm pin 11 output as value
```

Mixly programming program

```
Declare value as int ▼ value 📜 0
Declare voltage as float value
value
        AnalogRead PIN# 📗 🗚 🔻
voltage
                     value 🗦 🔻
                                   1023
           float 🔻
                   "
voltage =
       🔽 println
Serial
Serial
       ☑ println
                   voltage
value]
         int 🔻
                   voltage × *
                                 256
                   " value = "
Serial v println
Serial ▼ println
                  value
AnalogWrite PIN#
                 11 🔻
                        value
                                value
```



MagicBlock programming program

