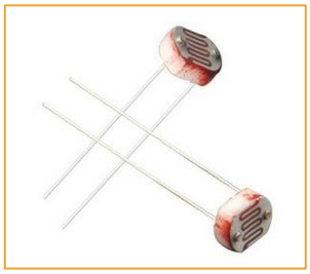
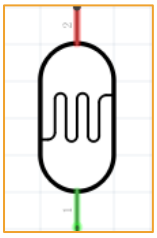
Photosensitive Light Experiment

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.





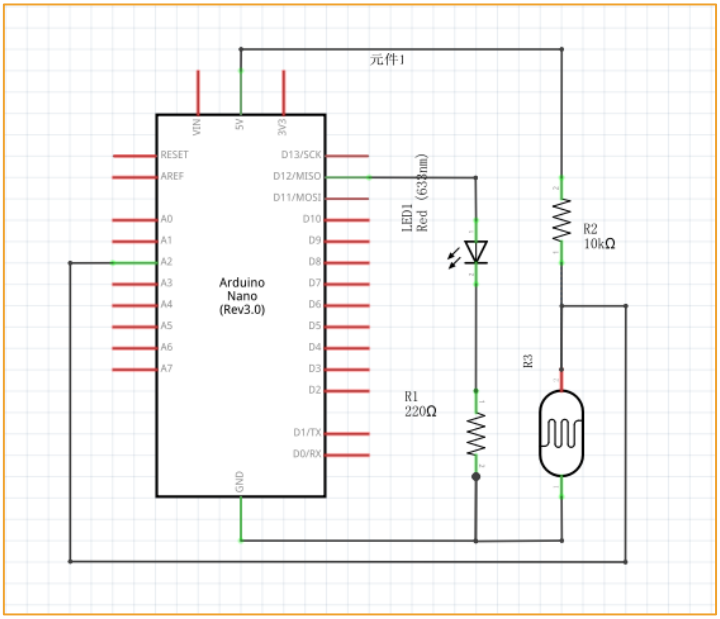
Experiment Purpose

What is a photosensitive experiment? The LED light is turned on or off by the light-sensitive resistor to the surrounding ambient light.

Component List

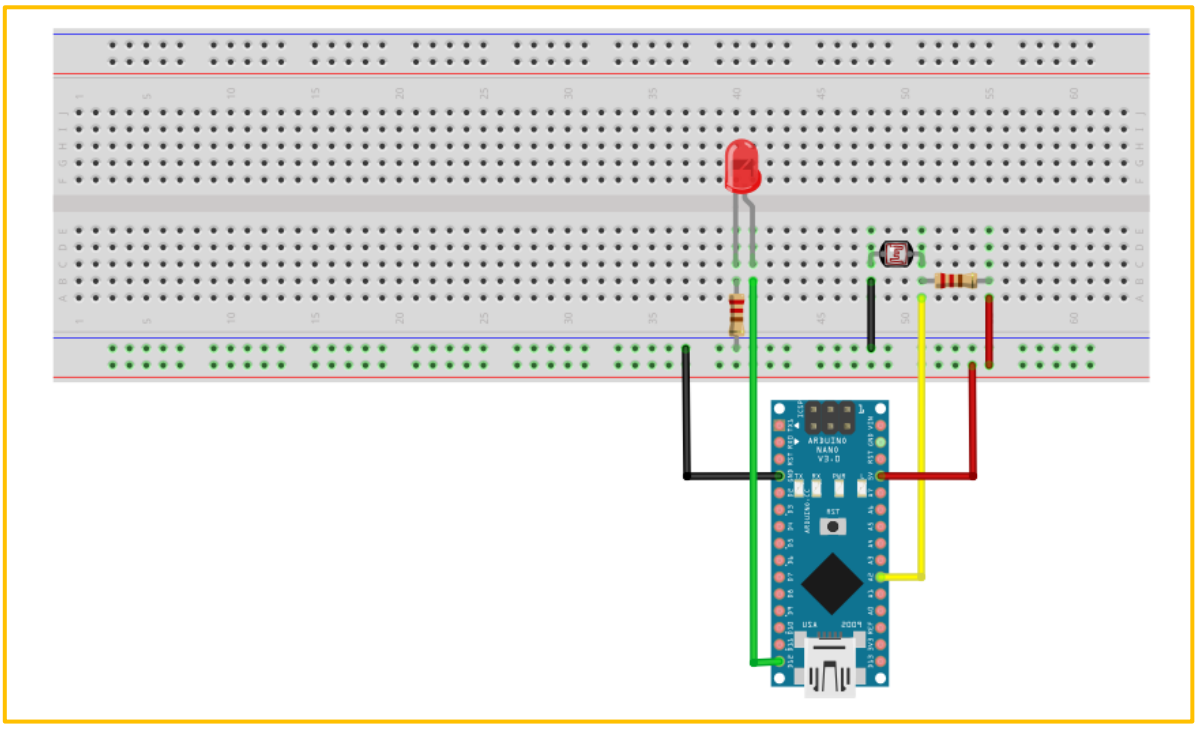
- Arduino Nano Mainboard
- Breadboard
- USB cable
- Photovaristor*1
- Red LED*1

- 10kΩ Resistor *1
- 220Ω Resistor *1
- Several wiresSchematic Diagram



Wiring of Circuit

220Ω	LED
10KΩ	Photovaristor



Code

```
int photocellPin = 2; // photocell to anallog pin 2
int photocellVal = 0; // photocell variable
int minLight = 200;
int ledPin = 12;
int ledState = 0;

void setup() {
   pinMode(ledPin, OUTPUT);
   Serial.begin(9600);
}

void loop() {
   photocellVal = analogRead(photocellPin);
   Serial.println(photocellVal);

   if (photocellVal < minLight && ledState == 0) {
      digitalWrite(ledPin, HIGH); // turn on LED
      ledState = 1;
  }

   if (photocellVal > minLight && ledState == 1) {
      digitalWrite(ledPin, LOW); // turn off LED
      ledState = 0;
  }
   delay(100);
}
```

Now we cover the photovaristor and we will clearly see the extinction of the light.

Experiment Result