

**Part 4**

# Lesson

# 9

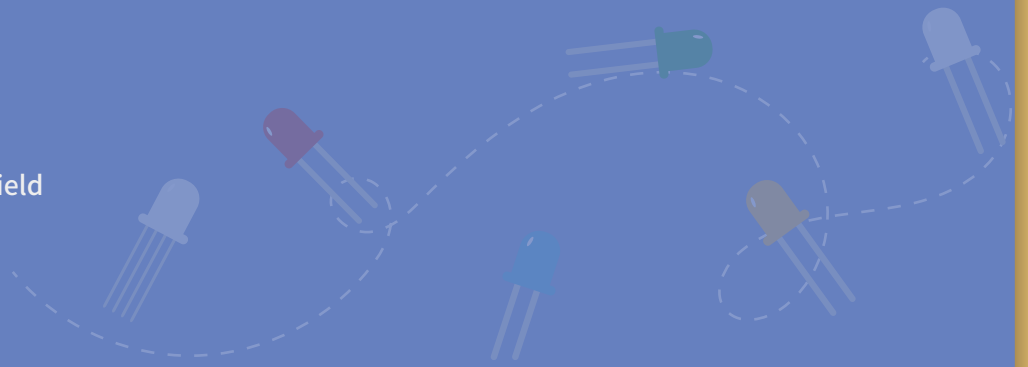
## Body-sensing Nightlight

## Introduction:

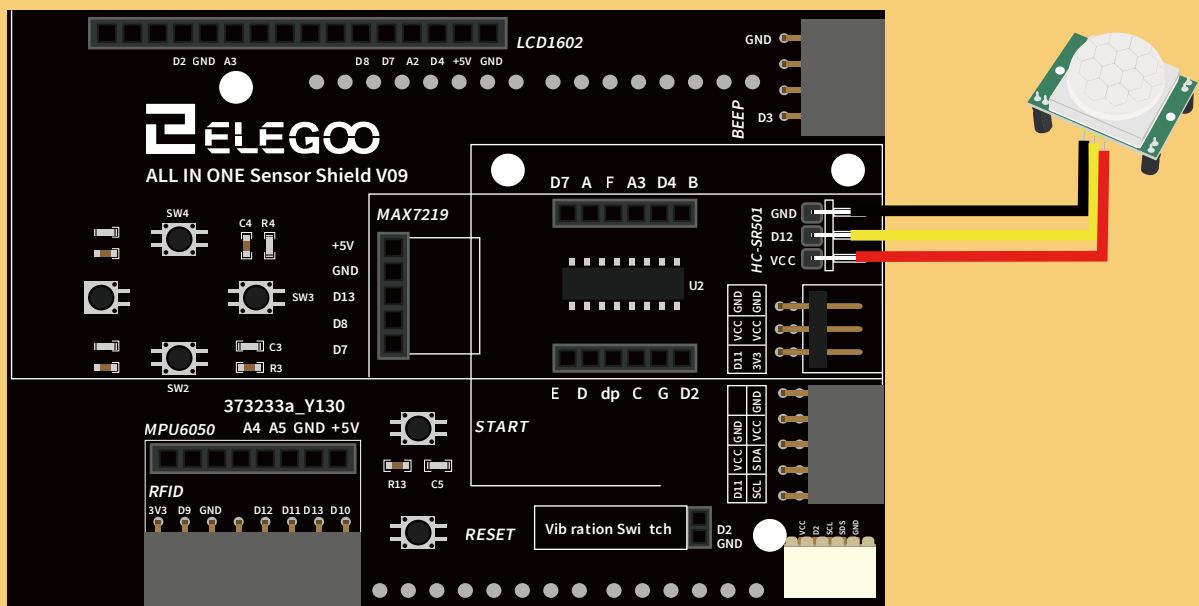
By the human body infrared induction module, the movement of people is detected, and the RGB lights are automatically lit to achieve luminous lighting.

## Component:

- (1) x ELEGOO UNO R3
- (1) x ALL IN ONE Sensor Shield
- (1) x HC-S501



## Wiring Diagram:



## Realization of Body-sensing Nightlight:

Detects if someone is moving, lights up if someone is moving, lights out if no one is moving. After lighting the light for 20s, check again if anyone is moving, if so, keep the light on, if not, turn it off.

## Programming Code:

### ■ Part1

Read the infrared signal, if the signal is 1 which is the departure state, then turn on the light, otherwise turn off the light.

```
pirValue = digitalRead(pirPin);
if(pirValue==1){
  analogWrite(BLUE, 255);
  analogWrite(RED, 255);
  analogWrite(GREEN, 255);}
else{
  analogWrite(BLUE, 255);
  analogWrite(RED, 255);
  analogWrite(GREEN, 255);
}
```

### ■ Part2

When the light is on, the outside world is detected once every second, and if the infrared module is triggered again (that is, someone moves again), the “i” in the loop should be set to zero and the 20-second timer is restarted.

```
for(int i=0;i<20;i++){
  analogWrite(BLUE, 255);
  analogWrite(RED, 255);
  analogWrite(GREEN, 255);
  delay(1000);
  pirValue = digitalRead(pirPin);
  if(pirValue==1){
    i=0;
  }

}
```