

## Project 4: Traffic Light

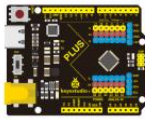

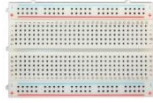









### 1. Project Introduction

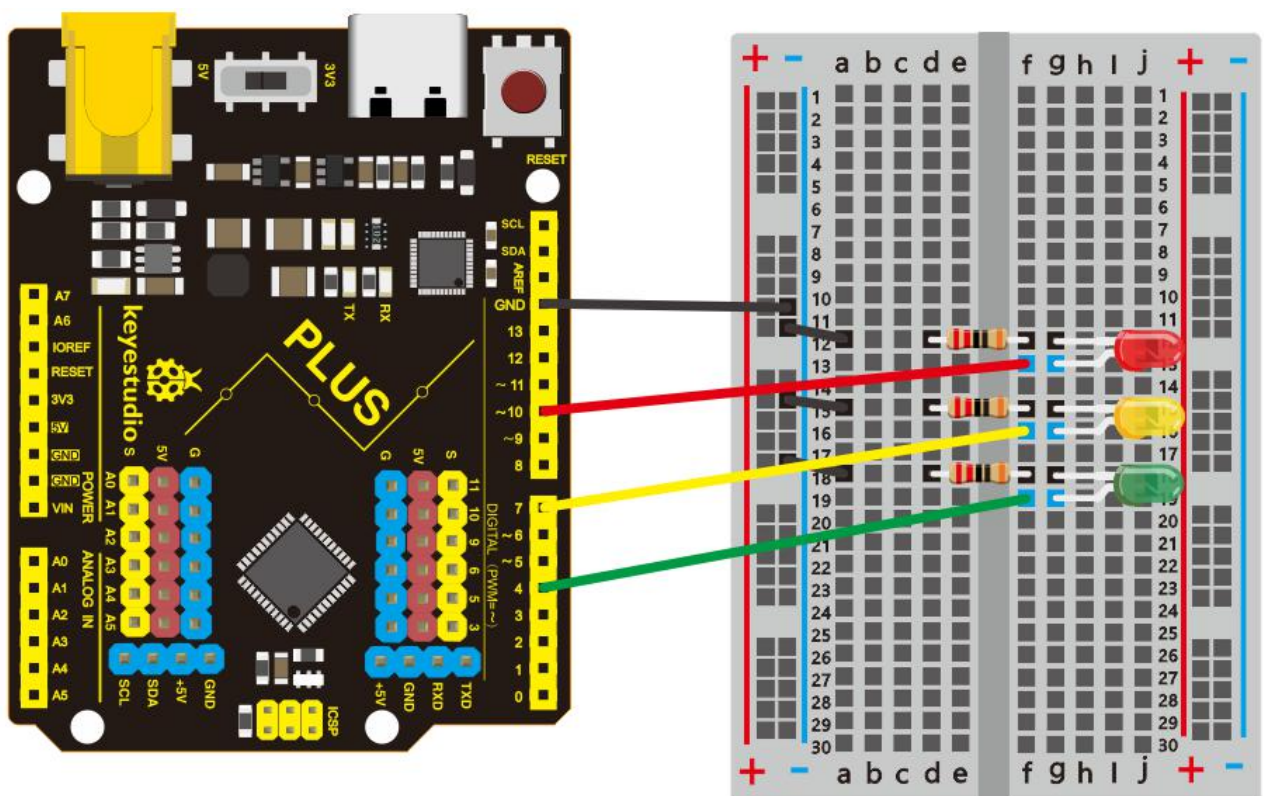
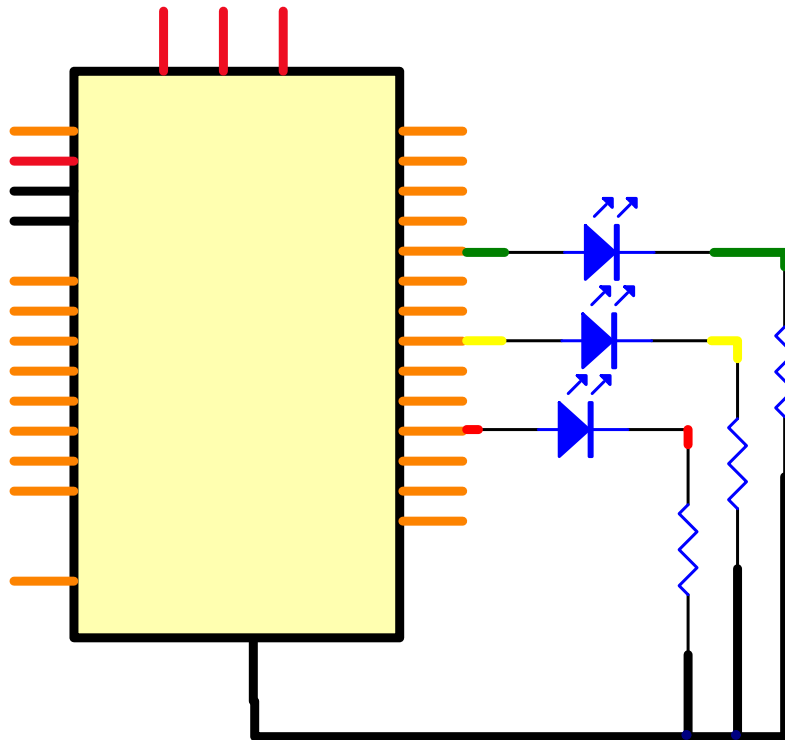
Traffic lights are prevalent in our ordinary life. According to a certain time rule, lights operate traffic lights with three colors of red, yellow, and green. Everyone shall abide by traffic regulations, which can avoid many traffic accidents.

In this project, we will use a plus development board, a traffic light card, and some LEDs (red, yellow, and green) to simulate a traffic light.

## 2.Project Hardware

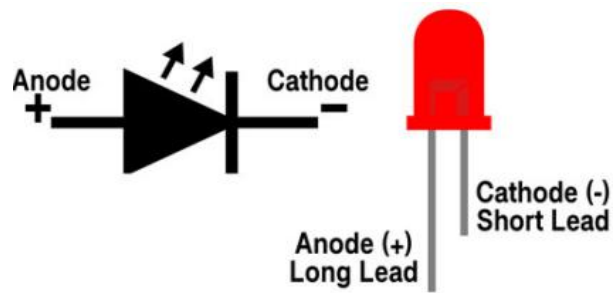
				
Plus Board*1	Plus Board Holder	400-Hole Breadboard	USB Cable*1	Yellow M5 LED*1
				
Green M5 LED*1	Red M5 LED*1	220Ω Resistor*3	Preformed Jumper Wire*3  Flexible jumper Wire*4	Traffic Light*1

## 3.Circuit Connection

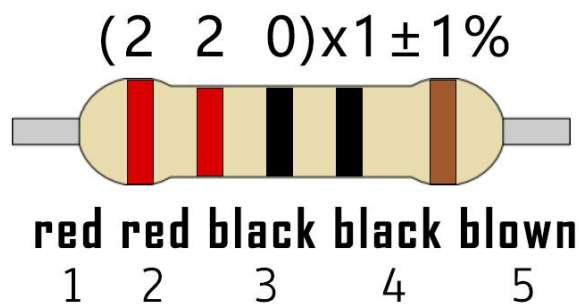


**NOTE:**

How to connect an LED



How to identify 5 band 220Ω Resistor



#### 4.Project Code

Since it is a simulation of traffic lights, the blinking time of each LED should be the same as those in traffic lights system.

In this program, we use Arduino **delay ()** function to control delay time, which is much simpler than C language.

```
/*
```

```
keyestudio STEM Starter Kit
```

```
Project 4
```

```
traffic light
```

```
http://www.keyestudio.com
```

```
*/
```

```
int redled =10; // initialize digital pin 10.
int yellowled =7; // initialize digital pin 7.
int greenled =4; // initialize digital pin 4.
void setup()
{
  pinMode(redled, OUTPUT); // set the pin with red LED as
  "output"
  pinMode(yellowled, OUTPUT); // set the pin with yellow LED
  as "output"
  pinMode(greenled, OUTPUT); // set the pin with blue LED as
  "output"
}
void loop()
{
  digitalWrite(greenled, HIGH); // turn on green LED
  delay(5000); // wait 5 seconds
  digitalWrite(greenled, LOW); // turn off green LED
  for(int i=0;i<3;i++) // blinks for 3 times
  {
    delay(500); // wait 0.5 second
    digitalWrite(yellowled, HIGH); // turn on yellow LED
    delay(500); // wait 0.5 second
```

```

digitalWrite(yellowled, LOW); // turn off yellow LED
}
delay(500); // wait 0.5 second
digitalWrite(redled, HIGH); // turn on red LED
delay(5000); // wait 5 second
digitalWrite(redled, LOW); // turn off red LED
}
////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////////

```

1. Open up the Arduino IDE and copy the above code into a new sketch.
2. Select the correct Board type and COM port for the Arduino IDE.
3. Click Upload button on Arduino IDE to upload code.

## 5. Project Result

Done uploading. Put the traffic light card on top of the three LEDs, and you have successfully made a traffic light.

1. First, the green light will be on for 5 seconds, and then off.
2. Second, the yellow light will blink for 3 times, and then off.
3. Third, the red light will be on for 5 seconds, and then off.
4. Continue to run the above 1-3 steps until you cut off the power to the plus development board.

