

RGB LED

Overview



In this lesson, you will learn how to use a RGB (Red Green Blue) LED with an Arduino. You will use the analogWrite function of Arduino to control the color of the LED.

Specification

RGB led:

Emitting Light Color: Blue, Red, Green

Size(Approx): 5 x 35mm/ 0.2" x 1.37" (D * L)

Forward Voltage: 3.0-3.4V

Luminous Intensity: 12000-14000mcd

Pin definition

It is the definition of RGB LED pin :








RGB LED		UNO R3
R	->	D11
GND	->	GND
G	->	D10
B	->	D9

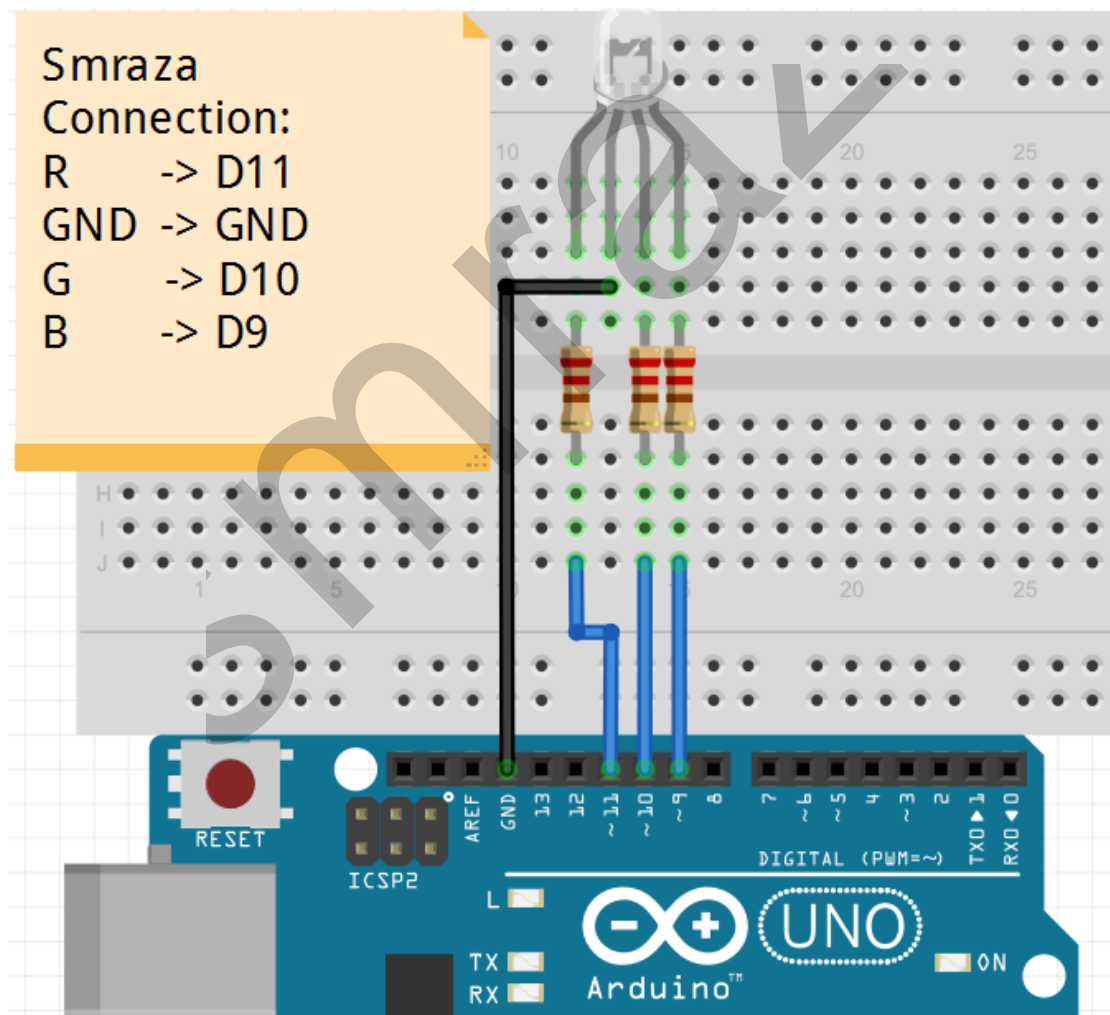
Hardware required

Material diagram	Material name	Number
	RGB LED	1

V1.0

	220Ω/330Ω resistor	3
	USB Cable	1
	UNO R3	1
	Breadboard	1
	Jumper wires	Several

Connection diagram



Note: The longest pin of the RGB LED is connected to the GND.

Sample code

Note: sample code under the **Sample code** folder

```
int redPin = 11;
int greenPin = 10;
int bluePin = 9;

//uncomment this line if using a Common Anode LED
//#define COMMON_ANODE

void setup()
{
  pinMode(redPin, OUTPUT);
  pinMode(greenPin, OUTPUT);
  pinMode(bluePin, OUTPUT);
}

void loop()
{
  setColor(255, 0, 0); // red
  delay(1000);
  setColor(0, 255, 0); // green
  delay(1000);
  setColor(0, 0, 255); // blue
  delay(1000);
  setColor(255, 255, 0); // yellow
  delay(1000);
  setColor(80, 0, 80); // purple
  delay(1000);
  setColor(0, 255, 255); // aqua
  delay(1000);
}

void setColor(int red, int green, int blue) // This is the function that we build.
{
  #ifndef COMMON_ANODE
    red = 255 - red;
    green = 255 - green;
    blue = 255 - blue;
  #endif
  analogWrite(redPin, red);
  analogWrite(greenPin, green);
  analogWrite(bluePin, blue);
}
```

Language reference

Tips : click on the following name to jump to the web page.

If you fail to open, use the Adobe reader to open this document.

[analogWrite\(\)](#)

[#define](#)

Application effect

When the program is uploaded, you will see the LED loop emit 7 different colors of light.

smraza