

# keyestudio

## Project 1: Seven-Color LED

### 1. Description



First we're going to finish the classic Arduino lit LED. Here we will use seven-color LEDs, which are components with a white appearance and display seven colors.

Furthermore, the module can automatically flash the built-in colors, which can be used to make charming lighting effects. It is the same as the normal LED driver, which will automatically flash seven colors when we input high level and stop flashing when at low level.

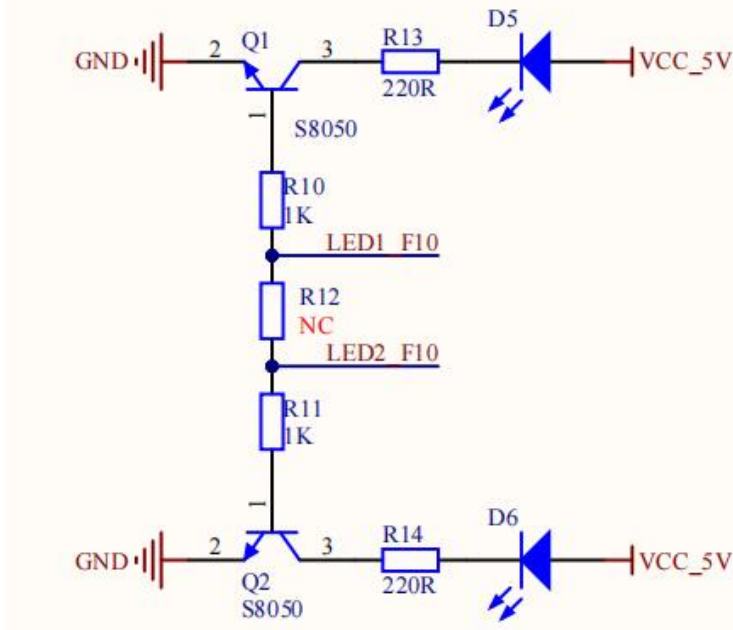
We have integrated the seven-color LEDs into our motor driver board. In the first project, we will use a basic test code to control it to blink for 3 seconds, off for 1 second to achieve the control effect.

You can also change the time of the LEDs on and off in your code to achieve different duration effects. When in control, the LEDs will be on if S end is high level; otherwise, it will go off.

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## 2. Component Knowledge

### LED F10



The two seven-color LEDs are controlled by triode respectively, and the signal end is respectively connected to P5.4 and P5.5, thereby we solely need to control the two pins to output high and low levels to control the LEDs.

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## 3. Test Code

```
/**
 *
 * Keyestudio 4WD Mecanum Robot for Arduino
 * lesson 1
 * Color LED
 * http://www.keyestudio.com
 */
#include "MecanumCar_v2.h"
mecanumCar mecanumCar(3, 2); //sda-->D3, scl-->D2

void setup() {
    mecanumCar.Init();//Initialize the motors and the seven-color LEDs
}

void loop() {
    mecanumCar.right_led(1); //Turn on the right seven-color LED
    mecanumCar.left_led(1); //Turn on the left seven-color LED
    delay(3000); //Delay in 3000 ms
    mecanumCar.right_led(0); //Turn off the right seven-color LED
    mecanumCar.left_led(0); //Turn off the left seven-color LED
    delay(1000); //Delay in 1000 ms
}
/**
```

## 4. Test Result

First, make sure the library files are installed, otherwise the code will fail to compile. Here we use the library file **MecanumCar\_v2**, please refer to the **development environment configuration** for installation. After compiling and uploading the code, turn the DIP switch to the ON end and power on, then we can see that the two seven-color LEDs on the base board will blink for 3s and then go off for 1s, then repeat this all the time.

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## 5. Code Explanation

|  |  |
|--|--|
| <b>#include</b><br><b>"MecanumCar_v2.h"</b>                        | Import the MecanumCar_v2 file  |
| <b>void setup()</b>  | Initialize the setup code, which runs only once  |
| <b>mecanumCar</b><br><b>mecanumCar(sda, scl);</b>                  | Create a car drive example to drive the motors and seven-color LEDs of the car, SDA is connected to D3, SCL is connected to D2, and the wirings can be changed.          |
| <b>void loop()</b>   | This is a main loop, which is equivalent to <b>while(1)</b> .  |
| <b>mecanumCar.Init();</b>  | Initialize the car drive.  |
| <b>mecanumCar.right_led(1);</b><br><b>mecanumCar.right_led(0);</b> | When the parameter is 1, output high level to the signal pin of the right seven-color LED, it will be on; When is 0, output low level to the signal pin, it will be off. |
| <b>mecanumCar.left_led(1);</b><br><b>mecanumCar.left_led(0);</b>   | When the parameter is 1, output high level to the signal pin of the left seven-color LED, it will be on; When is 0, output low level to the signal pin, it will be off.  |
| <b>delay(1000);</b>  | Delay in 1000ms  |