RGB colorful lights

1. Learning goal

In this lesson, we will learn how to realize RGB colorful lights on Omniduino car by Graphical programming.

2. Looking for building blocks

The following is the location of the building blocks required for this programming.
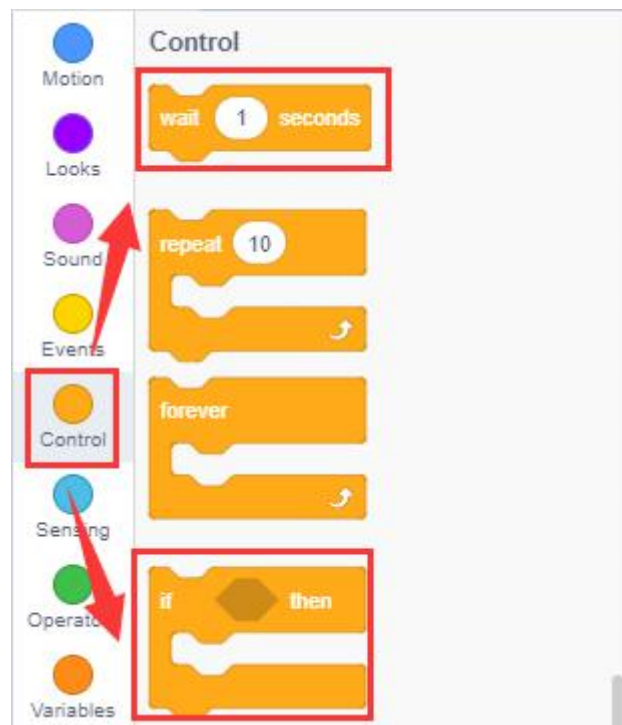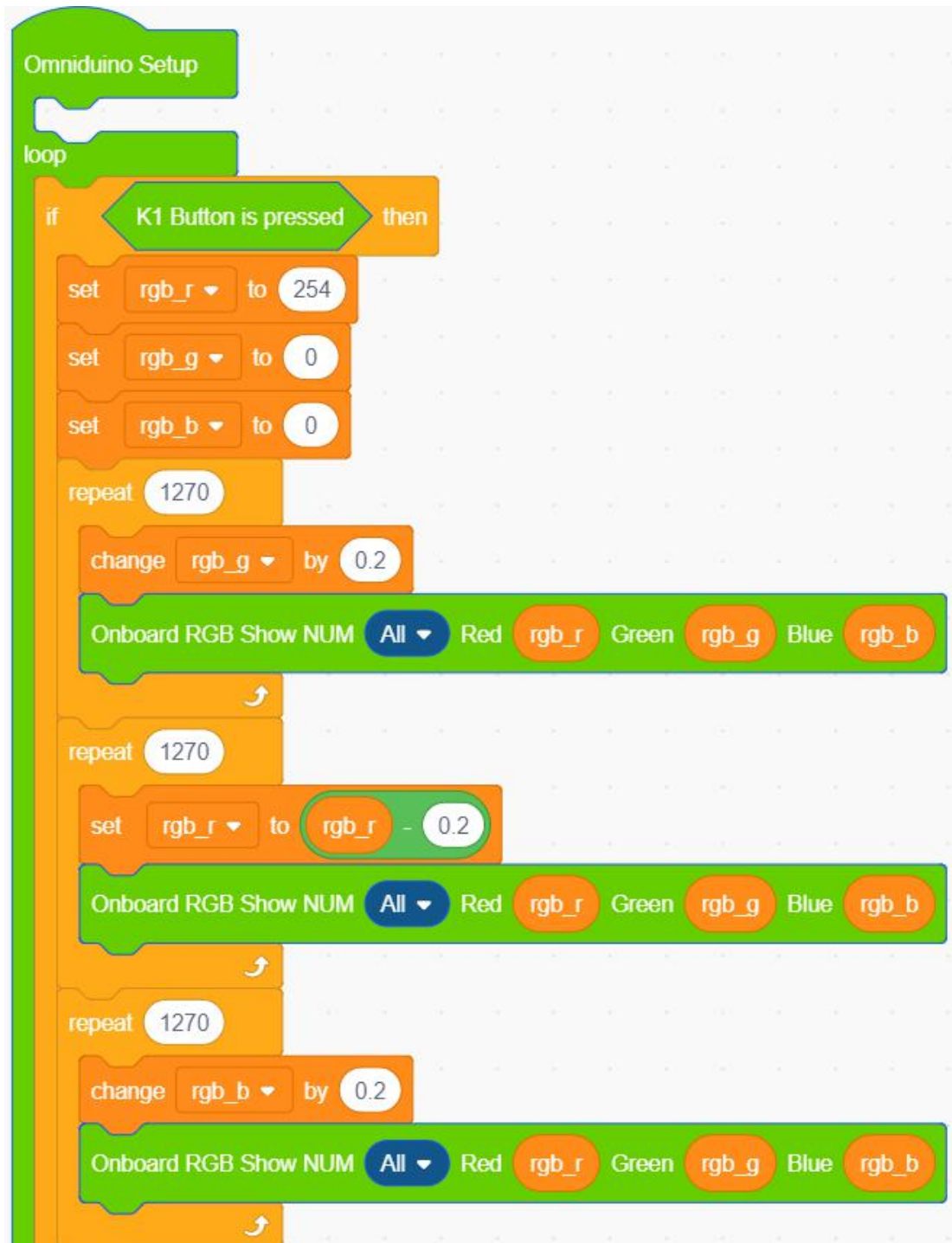
2.1 New create variable
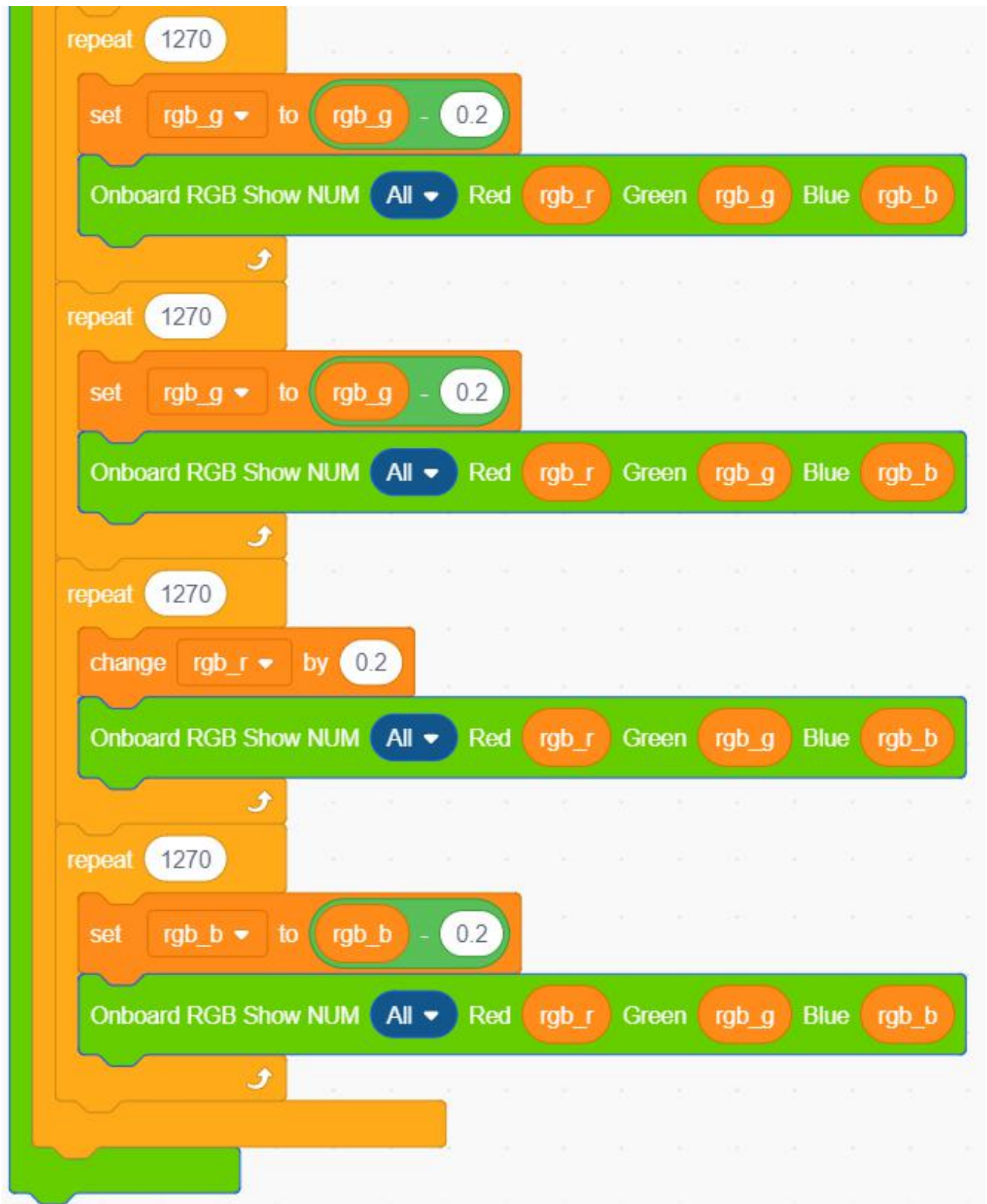

2.2 Select k1 Button and Onboard RGB blocks.

2.3 Control category: if...then and wait...times.

Combine blocks

```
Omniduino Setup

loop
    if        K1 Button is pressed    then
        set    rgb_r ▼    to    254
        set    rgb_g ▼    to    0
        set    rgb_b ▼    to    0
        repeat    1270
            change    rgb_g ▼    by    0.2
            Onboard RGB Show NUM    All ▼    Red    rgb_r    Green    rgb_g    Blue    rgb_b
        repeat    1270
            set    rgb_r ▼    to    rgb_r  -  0.2
            Onboard RGB Show NUM    All ▼    Red    rgb_r    Green    rgb_g    Blue    rgb_b
        repeat    1270
            change    rgb_b ▼    by    0.2
            Onboard RGB Show NUM    All ▼    Red    rgb_r    Green    rgb_g    Blue    rgb_b
```
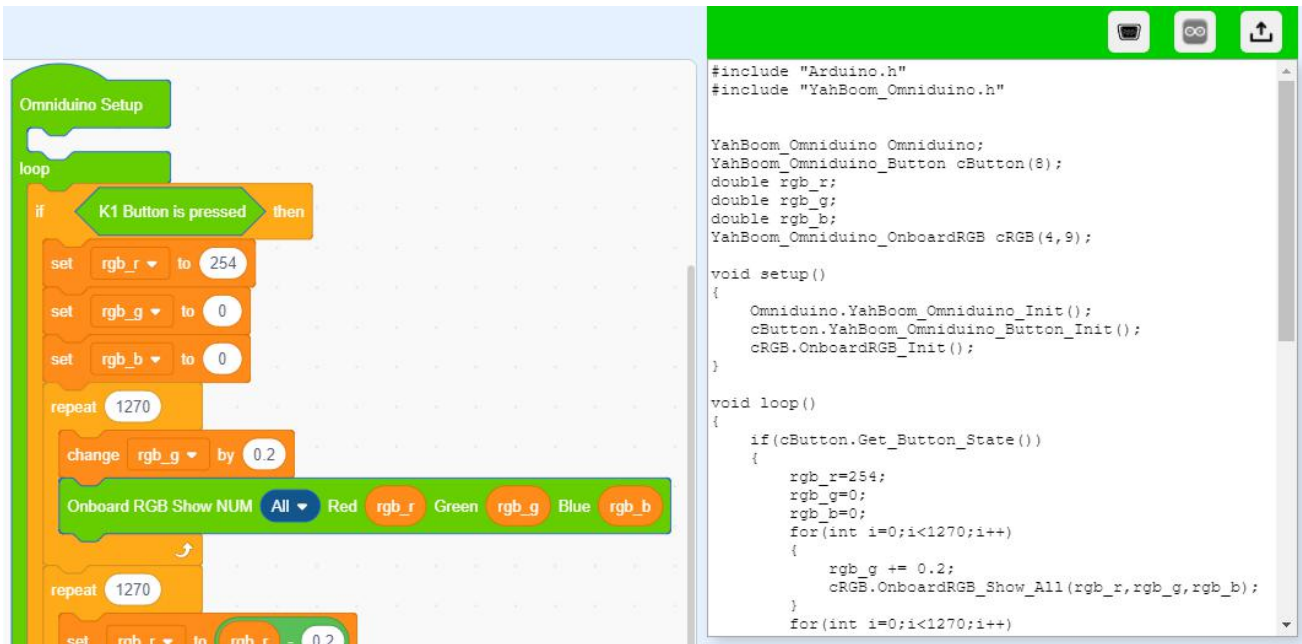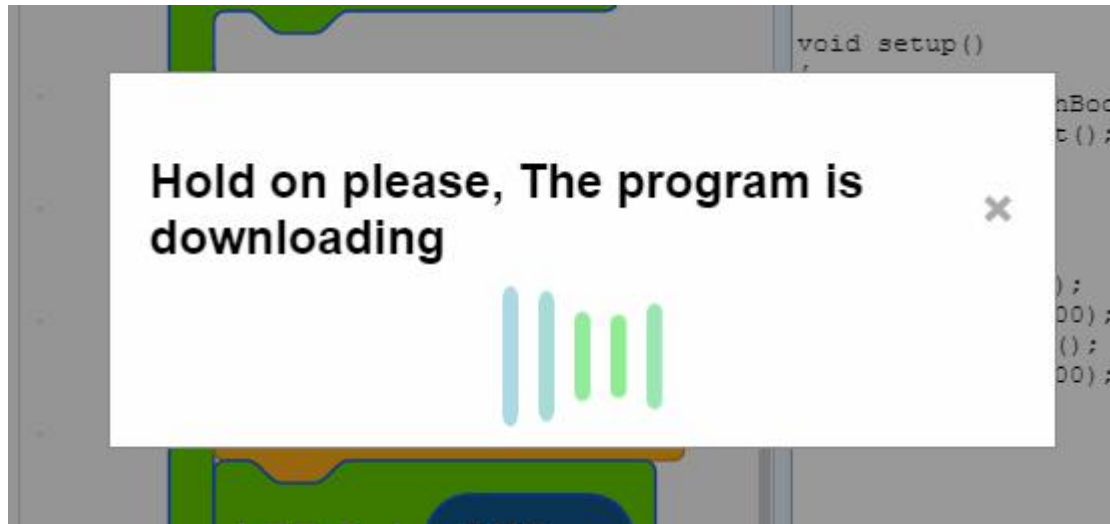
3. Compiling and uploading the program

3.1 After building the blocks, click the **[code mode]** in the upper right corner of the Helloblock programming interface. We can see the corresponding Arduino code.

```
#include "Arduino.h"
#include "YahBoom_Omniduino.h"


YahBoom_Omniduino Omniduino;
YahBoom_Omniduino_Button cButton(8);
double rgb_r;
double rgb_g;
double rgb_b;
YahBoom_Omniduino_OnboardRGB cRGB(4,9);

void setup()
{
    Omniduino.YahBoom_Omniduino_Init();
    cButton.YahBoom_Omniduino_Button_Init();
    cRGB.OnboardRGB_Init();
}

void loop()
{
    if(cButton.Get_Button_State())
    {
        rgb_r=254;
        rgb_g=0;
        rgb_b=0;
        for(int i=0;i<1270;i++)
        {
            rgb_g += 0.2;
            cRGB.OnboardRGB_Show_All(rgb_r,rgb_g,rgb_b);
        }
        for(int i=0;i<1270;i++)
```

3.2 Then, you need to connect Omniduino car to your computer. Select the CH340 port number identified in the previous step in the upper right corner. Then, click the up arrow to start compiling and uploading the program.


```
#include "Arduino.h"
#include "YahBoom_Omniduino.h"


YahBoom_Omniduino Omniduino;
YahBoom_Omniduino_LED cLED(5);

void setup()
{
    Omniduino.YahBoom_Omniduino_Init();
    cLED.LED_Init();
}

void loop()
{
    cLED.LED_ON();
```


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3.3 When the words **"Done compiling   Done uploading"** appear in the lower right corner of the programming interface, which means the program has been uploaded.

4. Experimental phenomenon

After the program is downloaded. When we press K1 button every time, all RGB light will light up different color.