

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

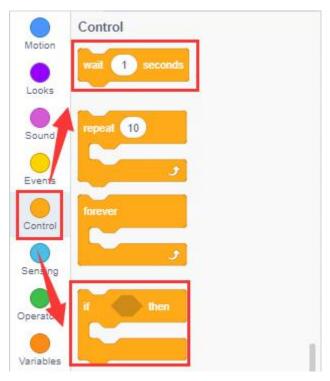


2.2 Select k1 Button and Onboard RGB blocks.





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



Combine blocks



```
Omniduino Setup
loop
        K1 Button is pressed
                 to 254
                 to 0
        rgb_g ▼
                 to 0
        rgb_b ▼
   repeat 1270
     change rgb_g 

by 0.2
     Onboard RGB Show NUM All -
                                       rgb_r
                                                    rgb_g
   repeat 1270
                               0.2
                      rgb_r
     Onboard RGB Show NUM All -
                                       rgb_r
   repeat 1270
                     by 0.2
     change rgb_b ▼
     Onboard RGB Show NUM All
                                                    rgb_g
                                 Red
                                       rgb_r
                                                          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.

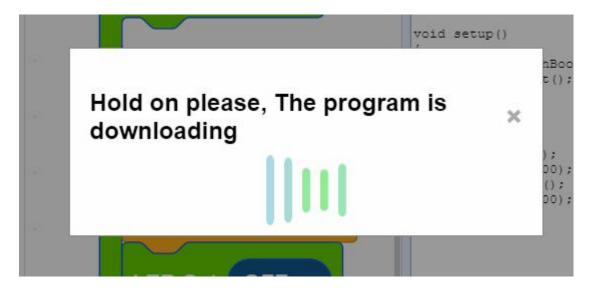


```
£
                                                                                              #include "Arduino.h"
#include "YahBoom_Omniduino.h"
                                                                                              YahBoom_Omniduino Omniduino;
YahBoom_Omniduino_Button cButton(8);
                                                                                              double rgb_r;
double rgb_g;
double rgb_b;
      K1 Button is pressed the
                                                                                              YahBoom_Omniduino_OnboardRGB cRGB(4,9);
       rgb r → to 254
                                                                                              void setup()
                                                                                                    Omniduino.YahBoom_Omniduino_Init();
cButton.YahBoom_Omniduino_Button_Init();
cRGB.OnboardRGB_Init();
repeat 1270
                                                                                              void loop()
                                                                                                    if(cButton.Get_Button_State())
 change rgb_g ▼ by 0.2
                                                                                                         rgb_r=254;
rgb_g=0;
rgb_b=0;
for(int i=0;i<1270;i++)
  Onboard RGB Show NUM All ▼ Red rgb_r Green rgb_g Blue rgb_b
                                                                                                               rgb_g += 0.2;
cRGB.OnboardRGB_Show_All(rgb_r,rgb_g,rgb_b);
repeat 1270
                                                                                                          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.







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.

```
C:\Users\Administrator\AppData\Local\Arduino15/logs
/application.log
DEBUG StatusLogger All asynchronous threads have
terminated
DEBUG StatusLogger RollingFileManager shutdown
completed with status true
>DEBUG StatusLogger Shut down RollingFileManager
C:\Users\Administrator\AppData\Local\Arduino15/logs
/application.log, all resources released: true
>TRACE StatusLogger XmlConfiguration stopped 2
remaining Appenders.
TRACE StatusLogger XmlConfiguration cleaning
Appenders from 2 LoggerConfigs.
>DEBUG StatusLogger Stopped
XmlConfiguration[location=jar:file:/C:/Program%20Fi
les%20(x86)/Helloblock/resources/Arduino/lib/pde.ja
r!/log4j2.xml] OK
>DEBUG StatusLogger Stopped
LoggerContext[name=1e6f5c3,
org.apache.logging.log4j.core.LoggerContext@16bc455
l with status true
>Done compiling. Done uploading!
```

4. Experimental phenomenon

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