

Avoid mode

1. Learning goal

In this lesson, we will learn how to realize the autonomous obstacle avoidance of the car based on the return value of the infrared sensor.

2. Looking for building blocks

The following is the location of the building blocks required for this programming.

K1 Button, Buzzer Play Tone and Music melody blocks.

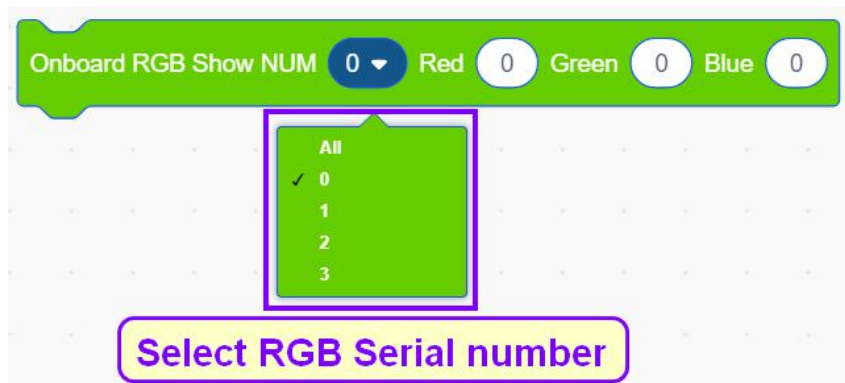


2.1 The content in the Omniduino setup block will only run once when the Omniduino is turned on or the reset button is pressed.

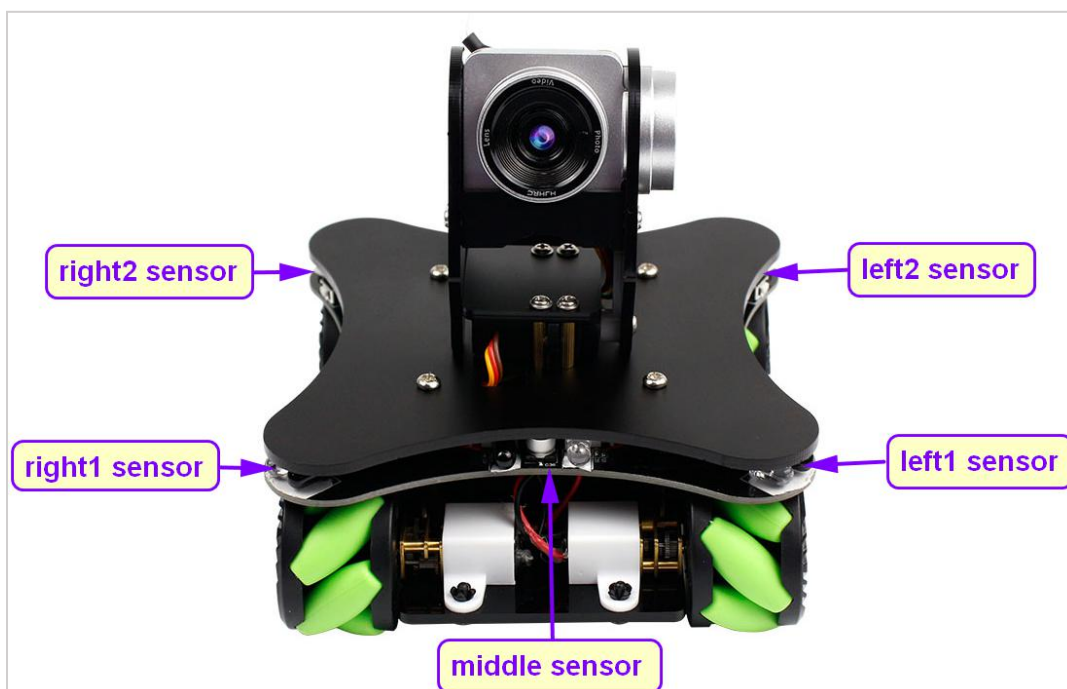
We can write into the initialization and other content in this block.

The content in the loop is the main loop function of the Omniduino car, most of the data processing and logic processing are completed in this function.

2.2 On board RGB Show NUM block, can be used to control all the RGB lights on the car. You can choose which number of RGB lights to control individually by select serial number. The value range of red, green and blue is 0~255.



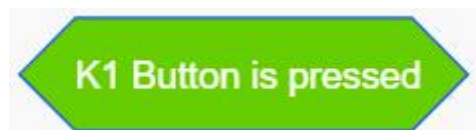
2.3 avoid_sensor return block, which can return 5 infrared sensor analog value. You can select the analog value corresponding to the infrared sensor in different directions on the car.



2.4 Control category: if...then and forever block.

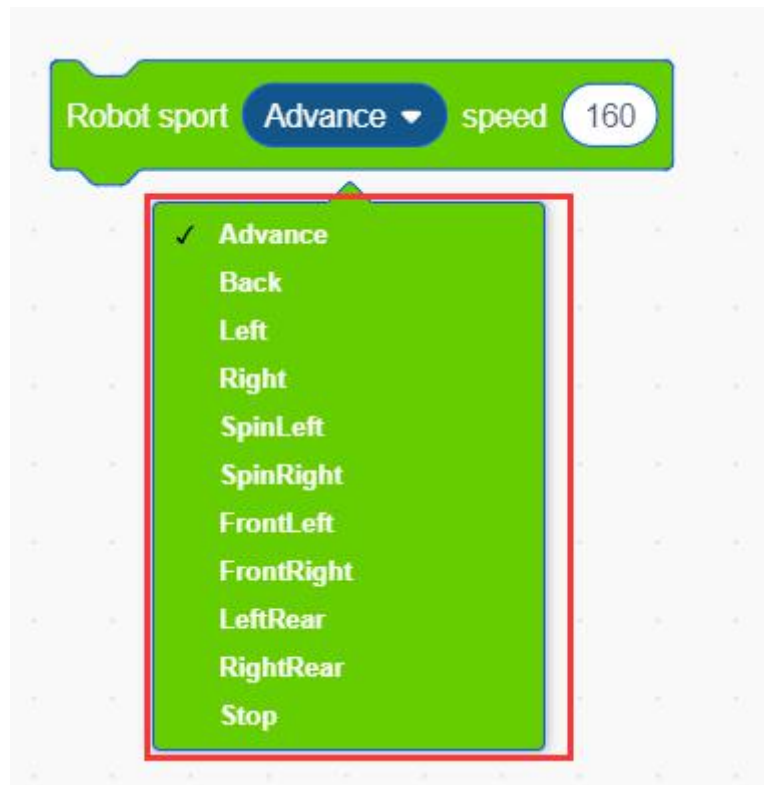


2.5 K1 Button is pressed block.

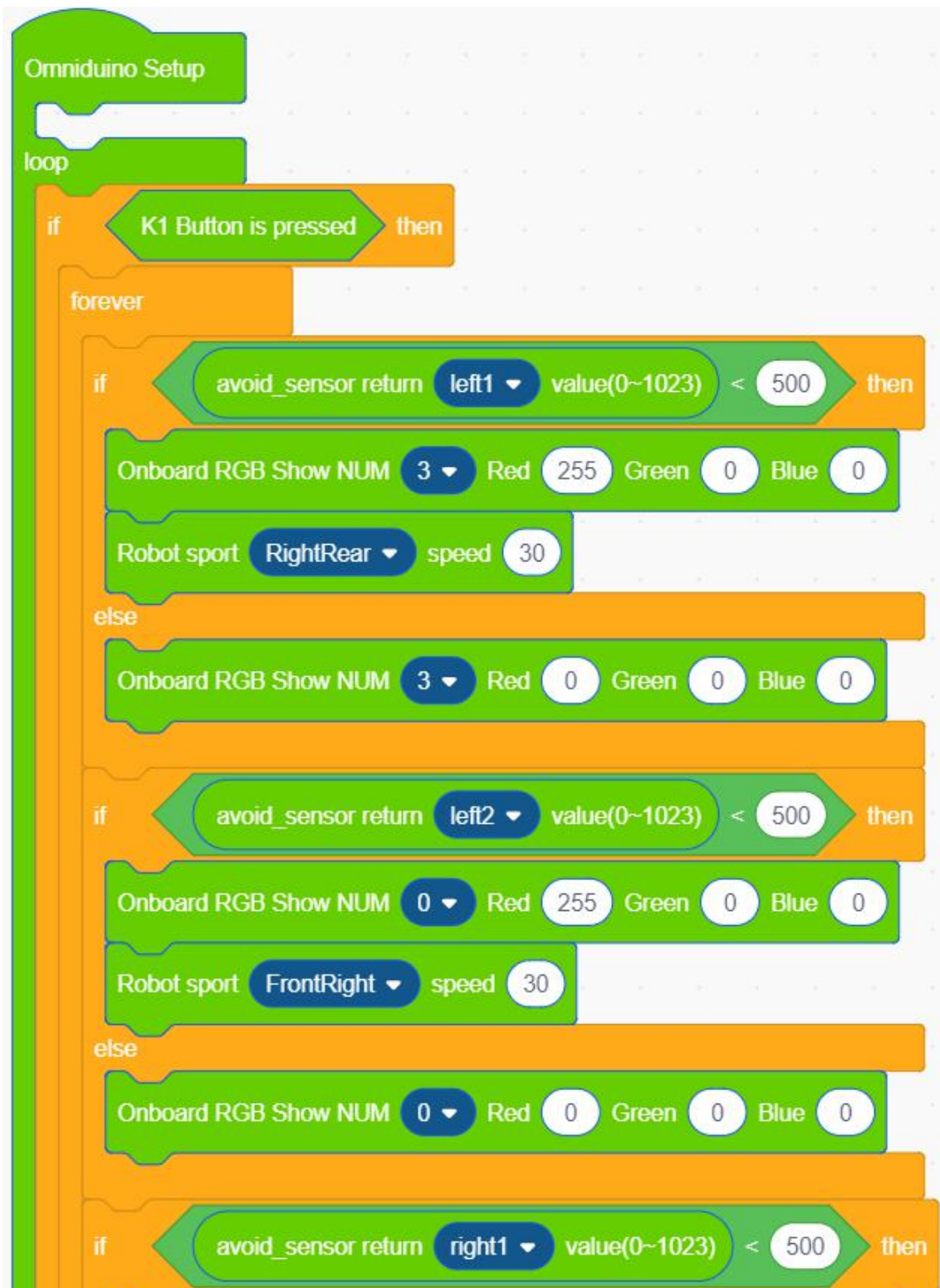


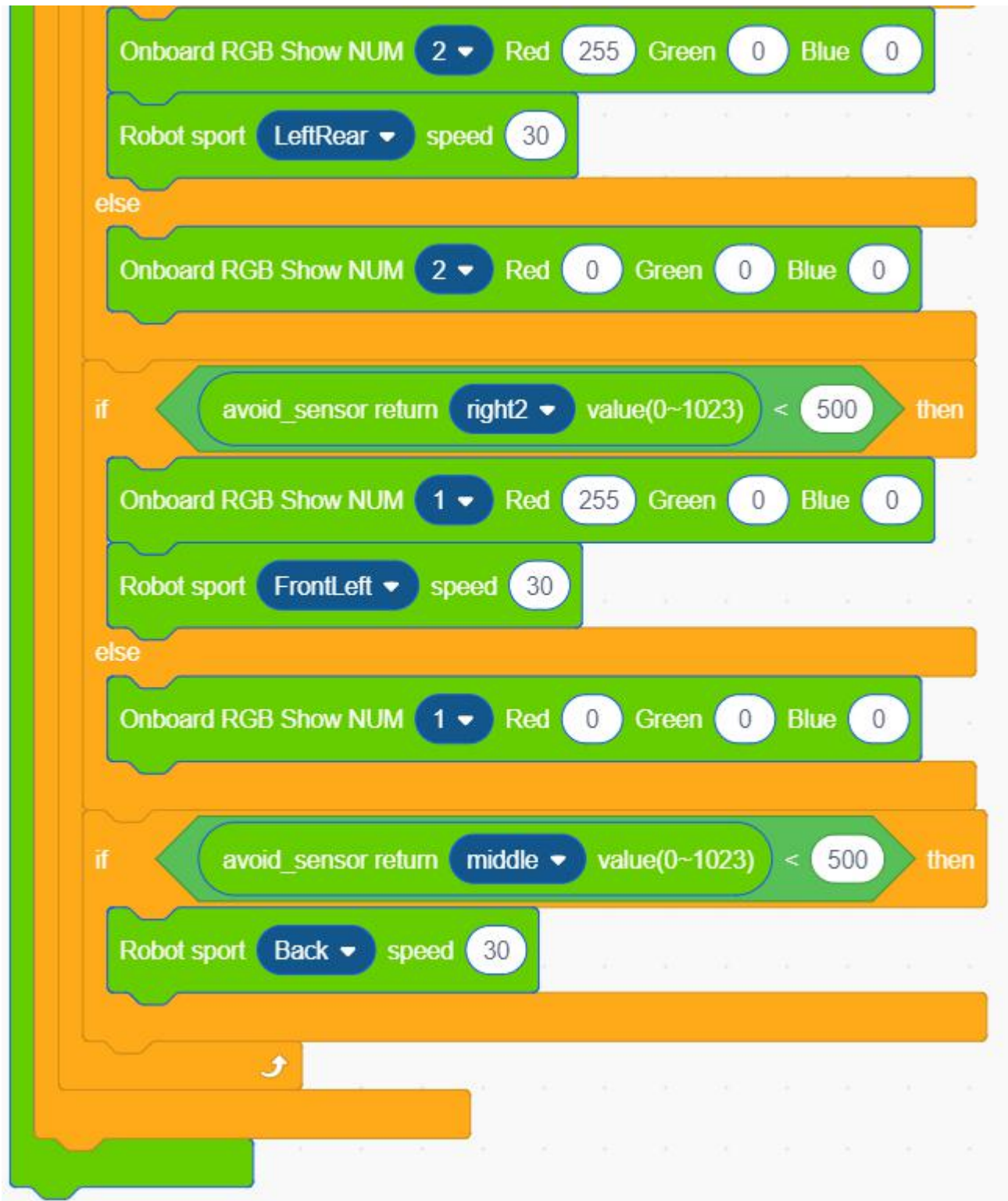
2.6 Robot sport building block, we can choose movement status, the speed is adjustable between 0-160.





Combine blocks





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;
double button_press;
YahBoom_Omniduino_MotorServo cMotor;
YahBoom_Omniduino_Button cButton(8);

void setup()
{
  Omniduino.YahBoom_Omniduino_Init();
  cMotor.YahBoom_Omniduino_MotorServo_Init();
  cButton.YahBoom_Omniduino_Button_Init();
  button_press=0;
  cMotor.Stop(0);
}

void loop()
{
  if(cButton.Get_Button_State())
  {
    button_press += 1;
    if(button_press == 2)
    {
      button_press=0;
    }
  }
  if(button_press == 1)
  {
    Robot sport Advance speed 60
  }
  else
  {
    Robot sport Stop speed 0
  }
}
  
```

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

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.



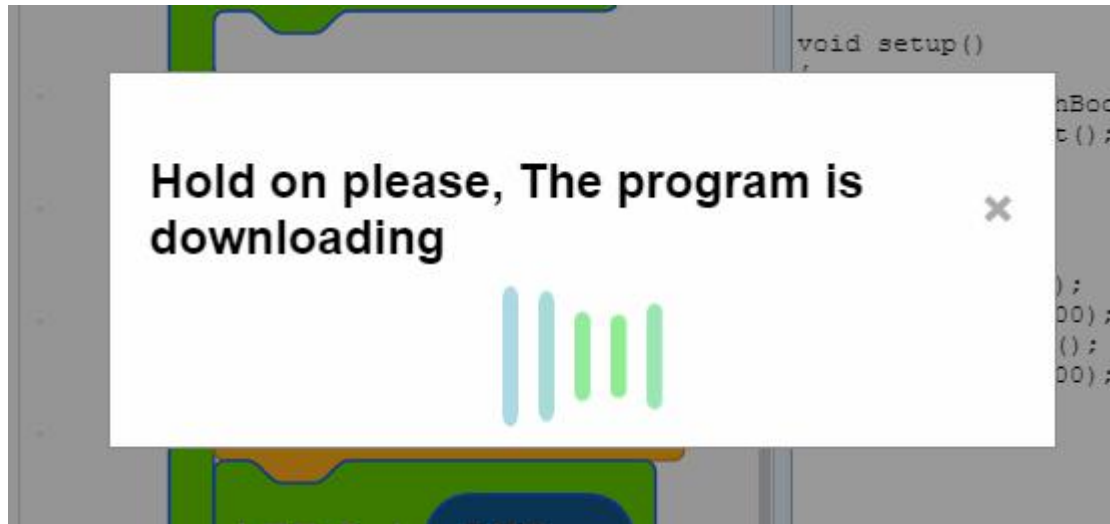
```

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

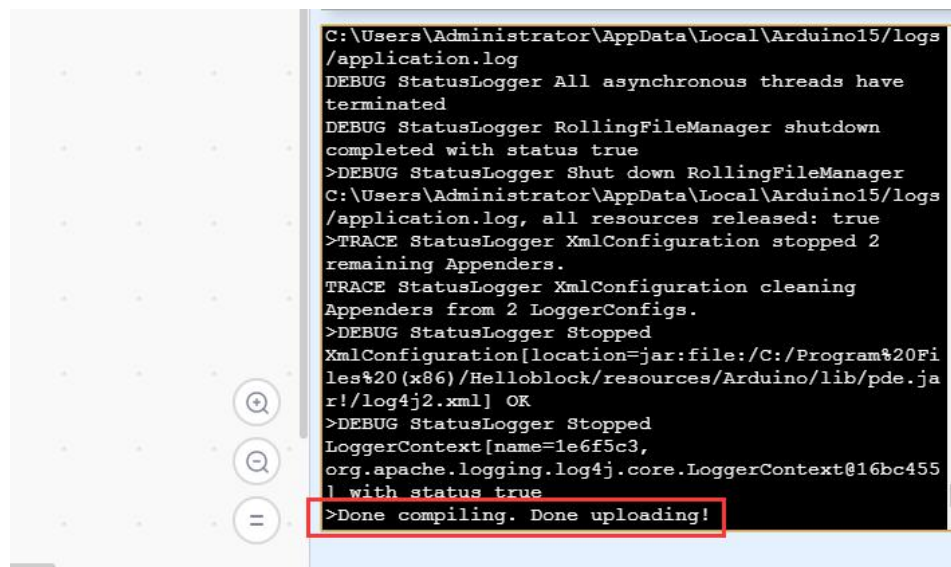
YahBoom_Omniduino Omniduino;
YahBoom_Omniduino_LED cLED(5);

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

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



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. After we press K1 button, car will advance. If an obstacle is detected, it will go in the opposite direction.