**Control RGB light**

## 1. Purpose

In this course, we mainly learn to use Arduino, RGB light module and Limit switch(collision detection) module to realize control RGB light

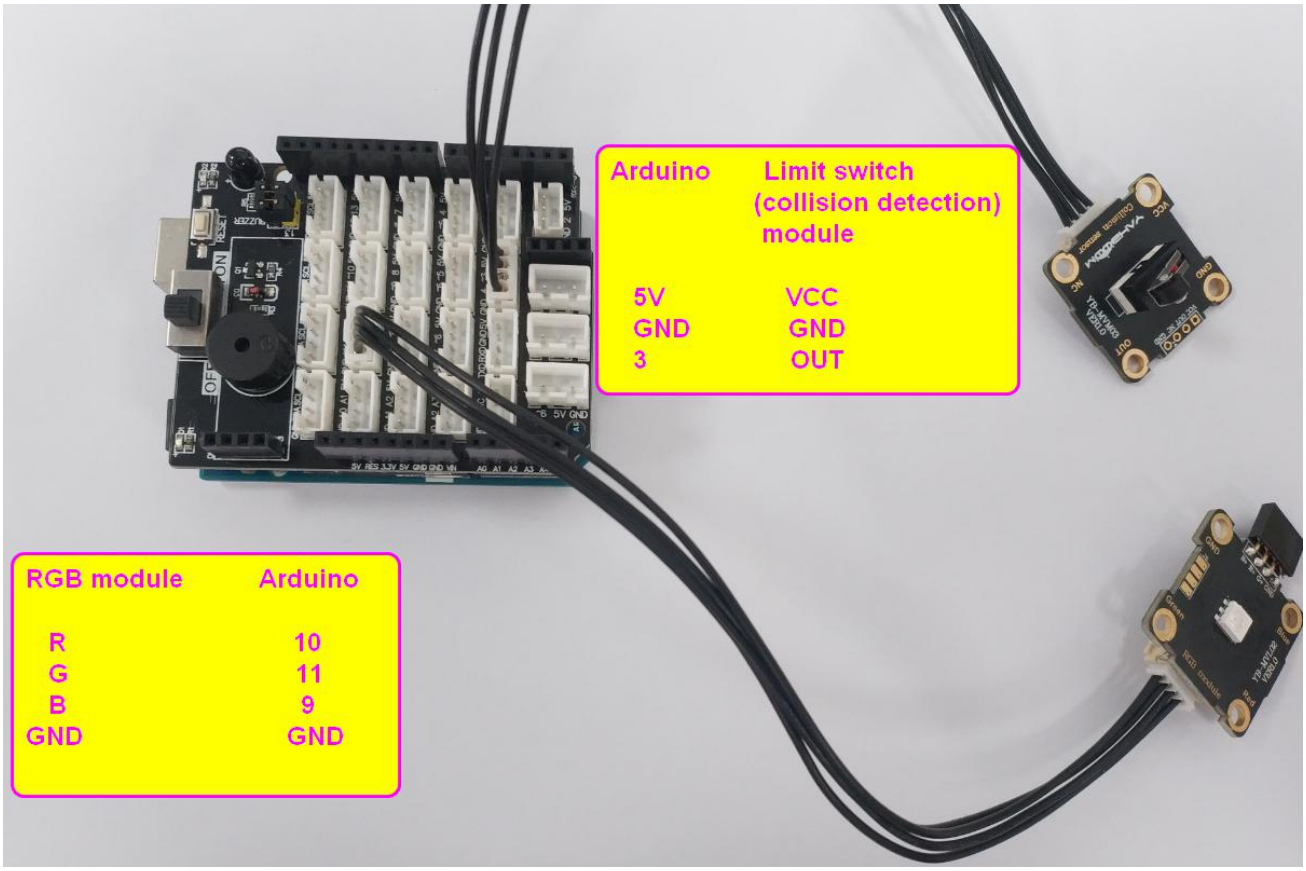
## 2. Preparation

Wiring diagram as shown below.

| RGB module | Arduino |
|---|---|
| R | 10 |
| G | 11 |
| B | 9 |
| GND | GND |

| Limit switch(collision detection) module | Arduino |
|---|---|
| GND | GND |
| VCC | 5V |
| OUT | 3 |

Note: As shown in the figure below, we use the Uno sensor expansion board. If you don't have an expansion board, you can connect the Arduino board and the sensor module by DuPont lines.



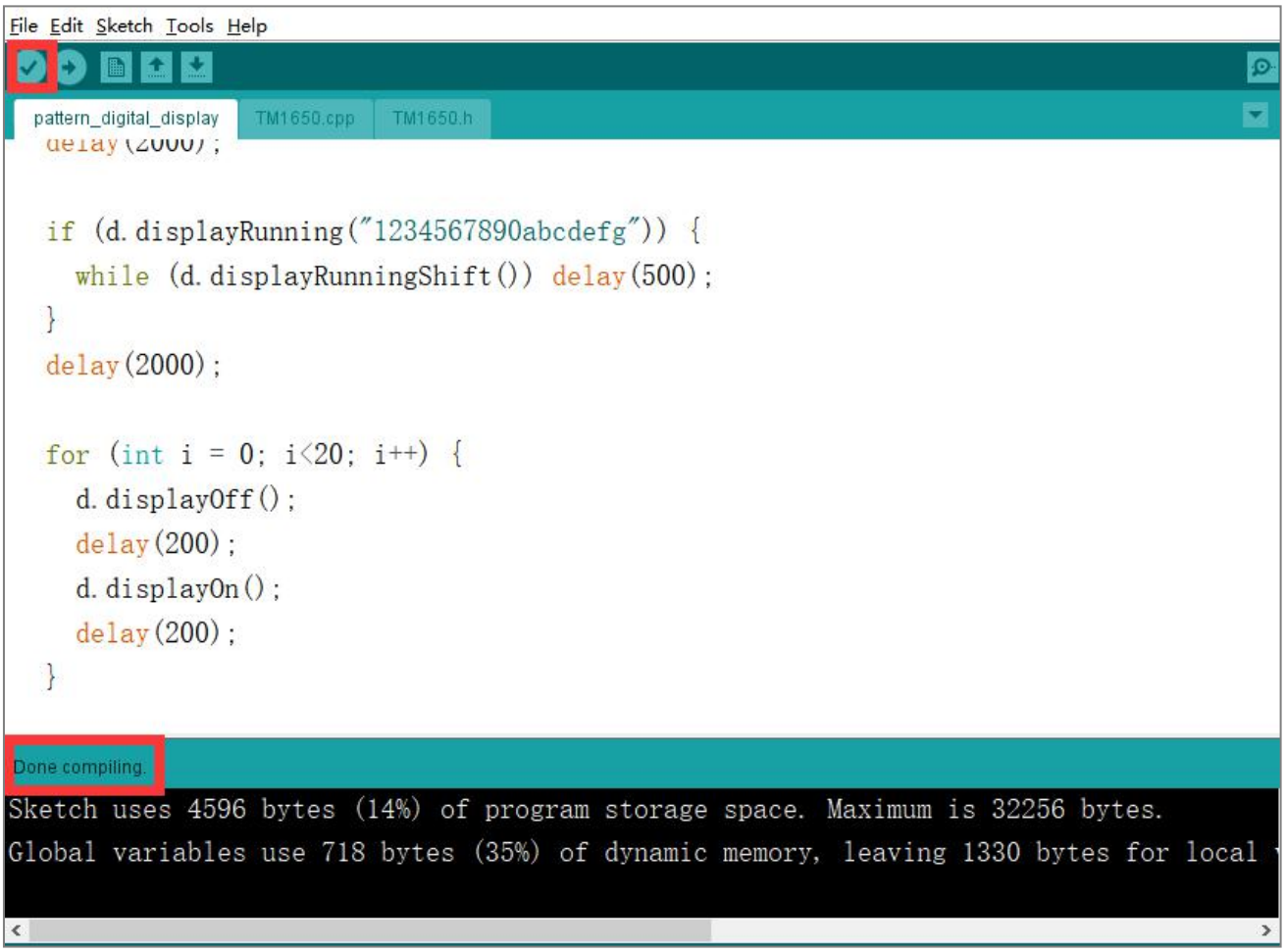
### 3. About code

Please check .ino file.

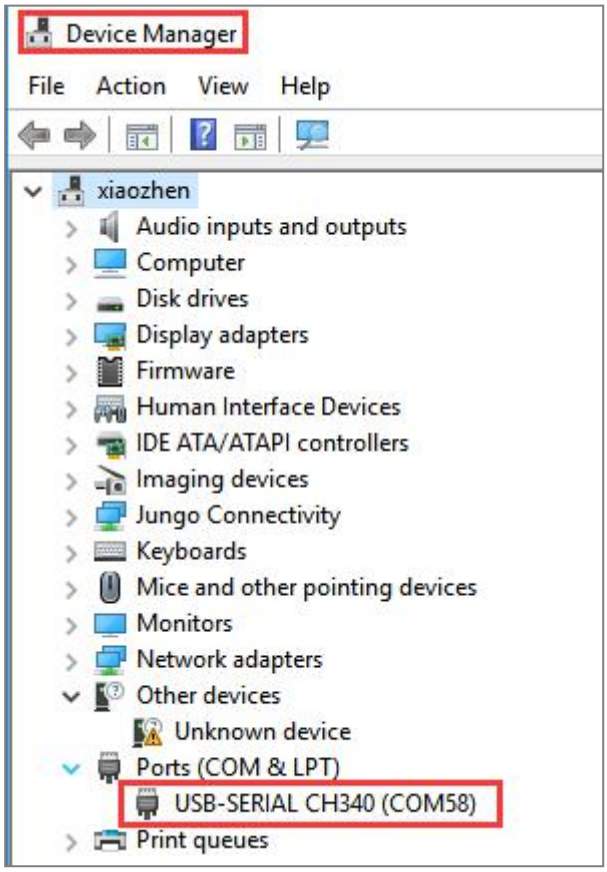
By detecting whether the collision module is pressed, the value is accumulated when pressed, and RGB lights will light up different colors according to different values.

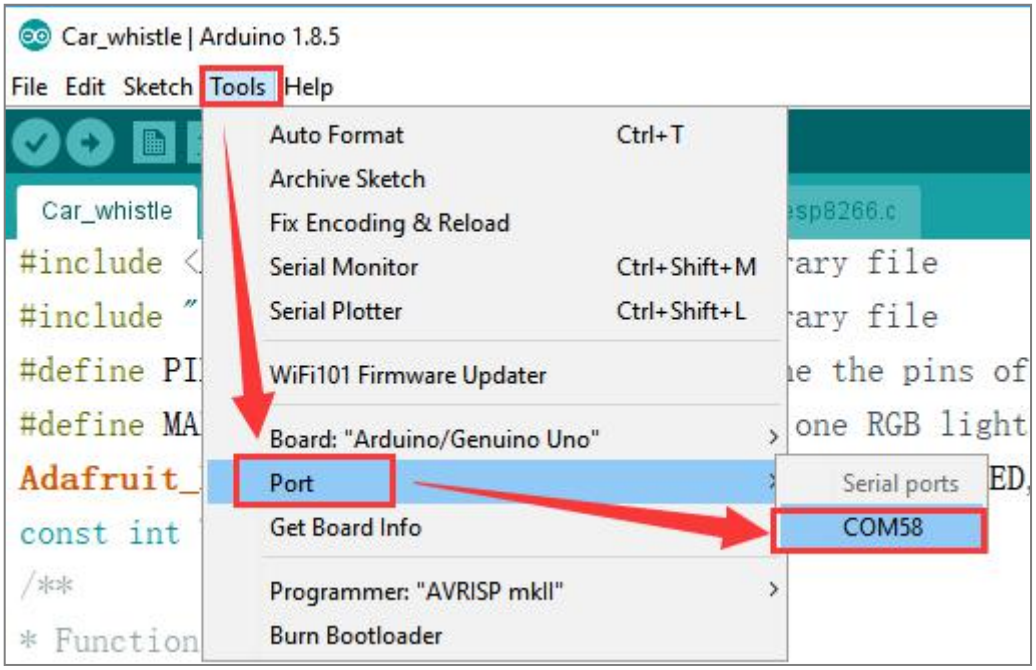
### 4. Compiling and downloading code

4.1 We need to open the **.ino** file by Arduino IDE software. Then click“√”under the menu bar to compile the code, and wait for the word "Done compiling " in the lower left corner, as shown in the figure below.

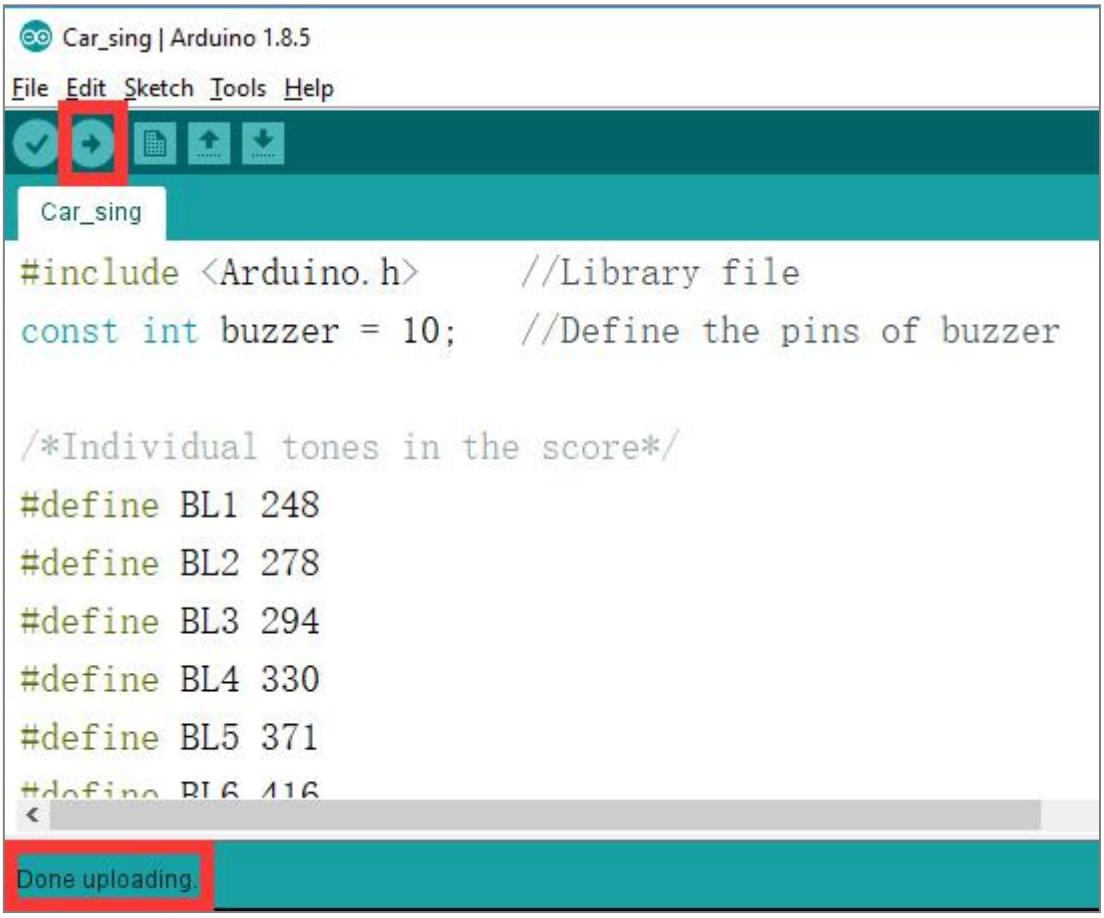



4.2 In the menu bar of Arduino IDE, we need to select【Tools】---【Port】--- selecting the port that the serial number displayed by the device manager just now, as shown in the figure below.




4.3 After the selection is completed, you need to click "→"under the menu bar to upload the code to the UNO board. When the word "Done uploading" appears in the lower left corner, the code has been successfully uploaded to the UNO board, as shown in the figure below.




**5. Phenomenon**

After the program is downloaded successfully. When the collision detection module is pressed, the RGB lights will light up in different colors, and the color will be switched with each bcollided.