RGB Light

1.Learning goals

In this lesson, we mainly learn how to control RGB Light on the Super:bit expansion board to play music.

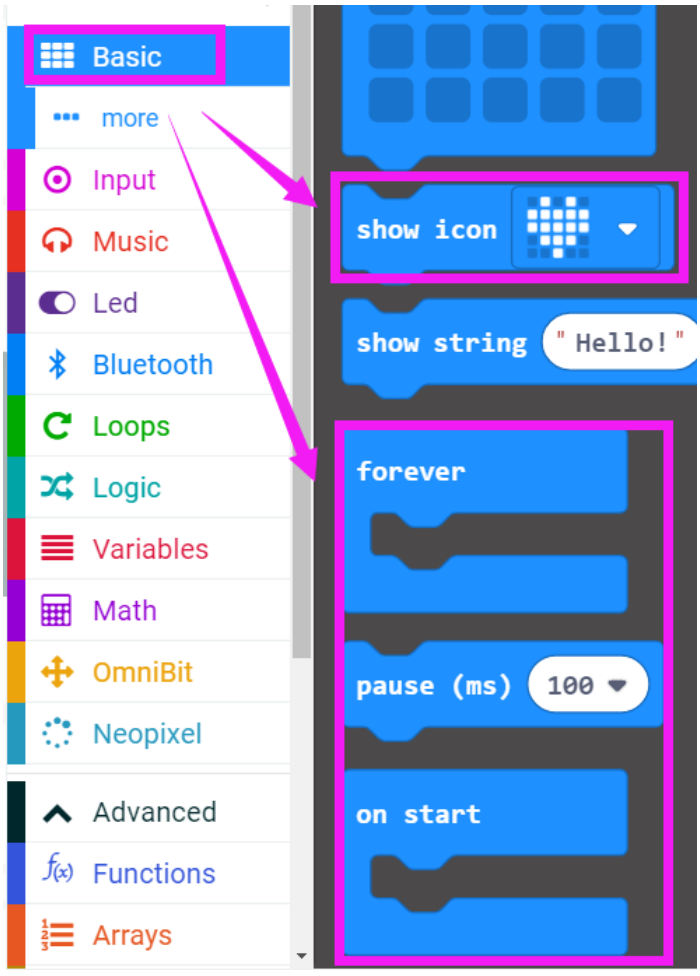
2.Programming method

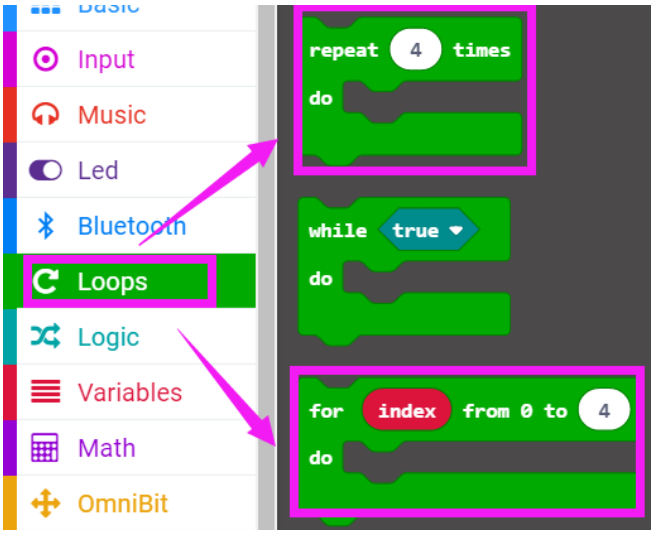
Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: **http://microbit.org/** to enter the programming interface. Add the Yahboom package https://github.com/lzty634158/OmniBit to program.

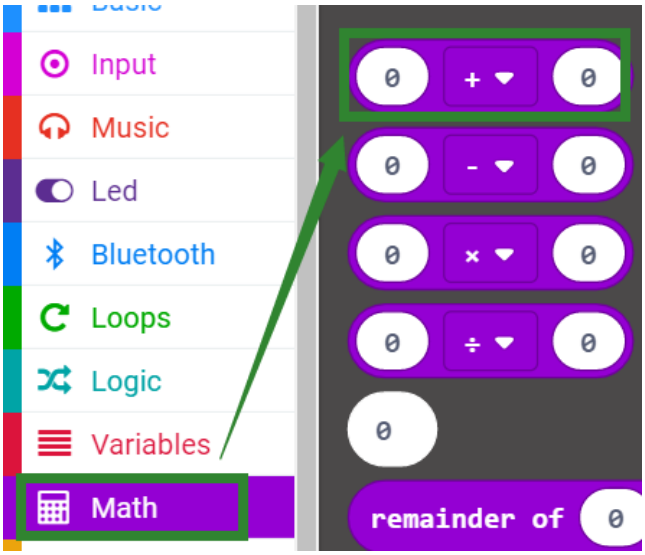
Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: https://github.com/lzty634158/OmniBit, you can program.

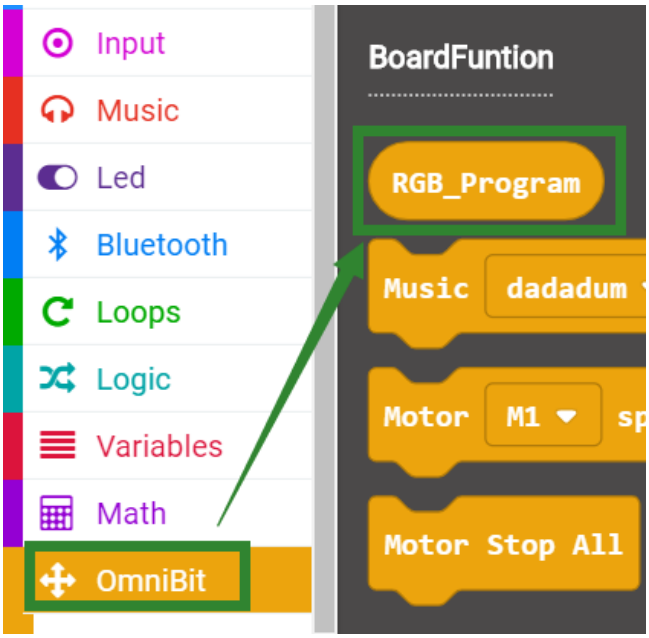
3.Looking for blocks

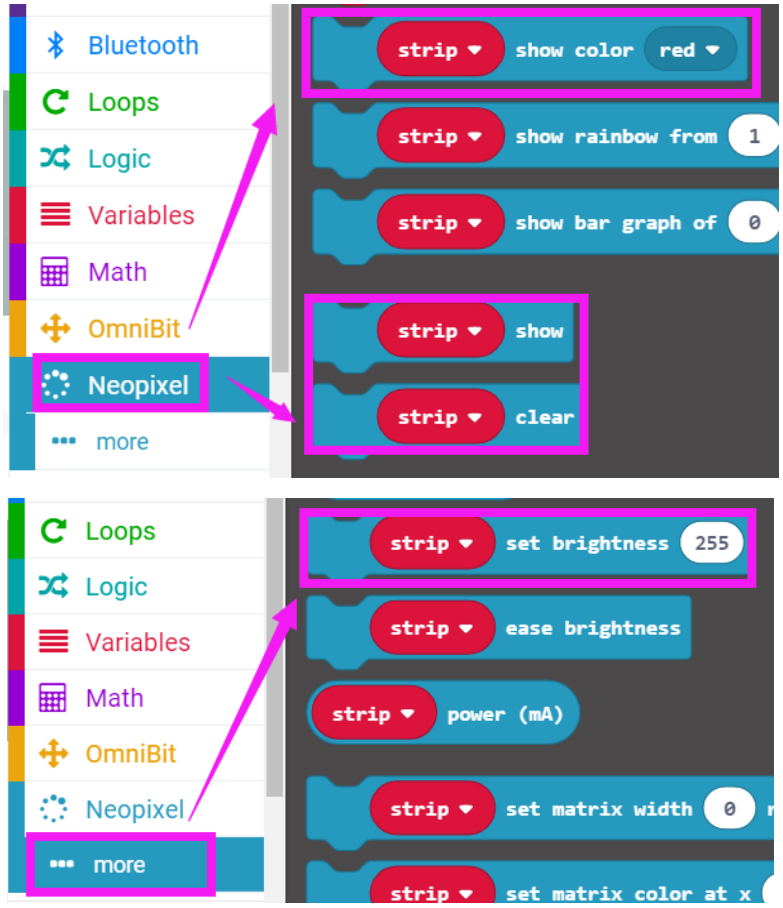
The following is the location of the building blocks required for this programming.




Input
Music
Led
Bluetooth
Loops
Logic
Variables
Math
OmniBit
repeat 4 times
do
while true
do
for index from 0 to 4
do

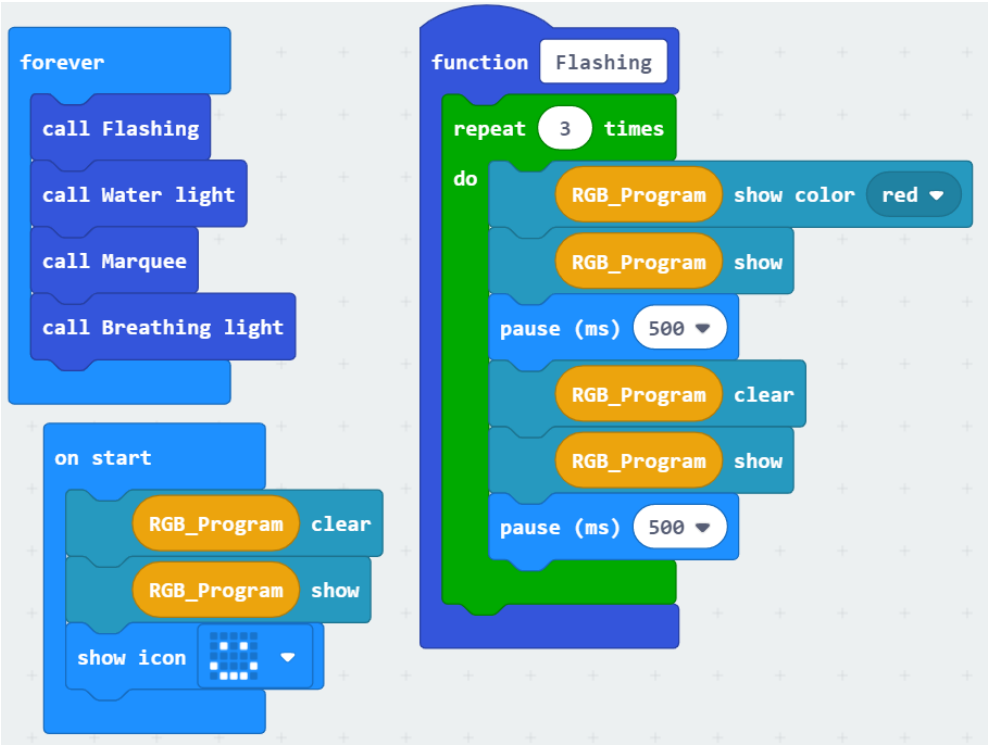

Input
Music
Led
Bluetooth
Loops
Logic
Variables
Math
0 + 0
0 - 0
0 × 0
0 ÷ 0
0
remainder of 0

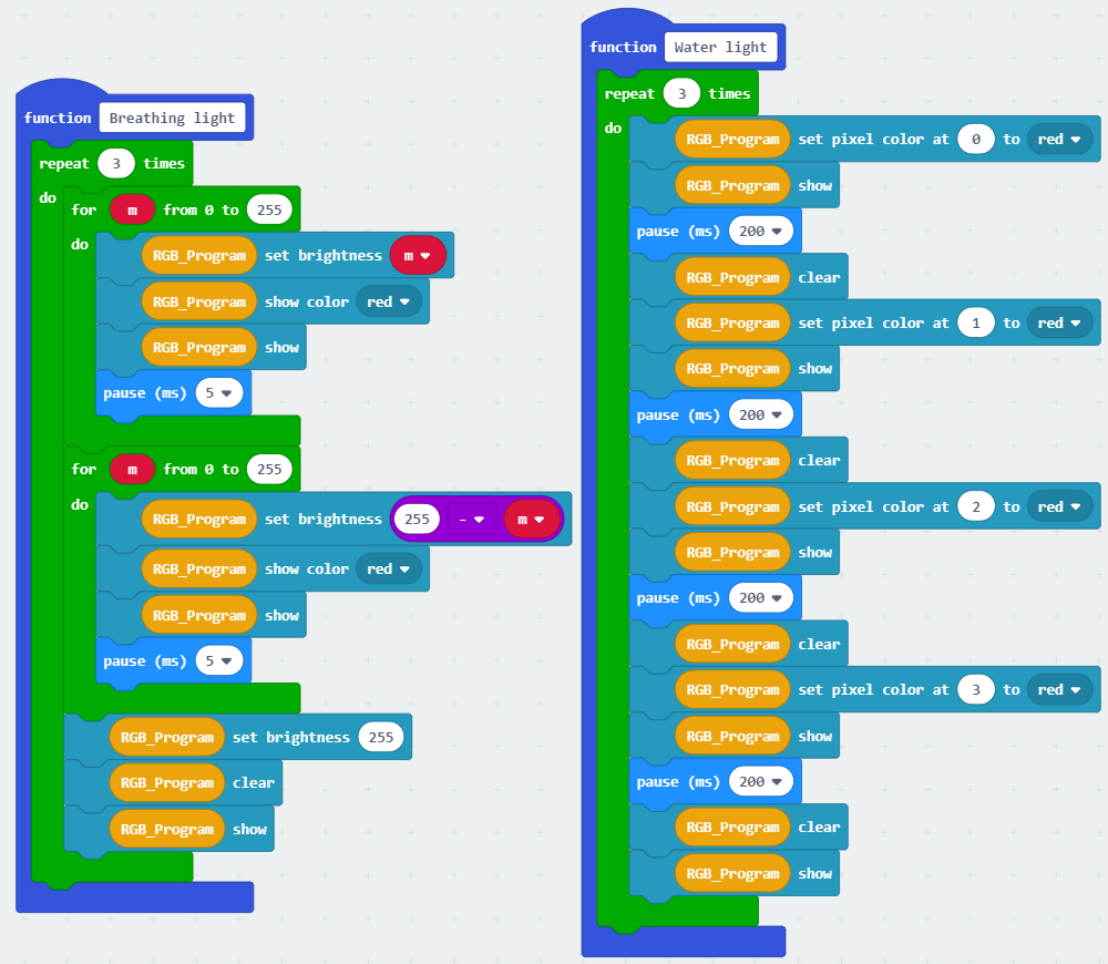

Input
Music
Led
Bluetooth
Loops
Logic
Variables
Math
OmniBit
BoardFuntion
RGB_Program
Music dadadum
Motor M1
Motor Stop All

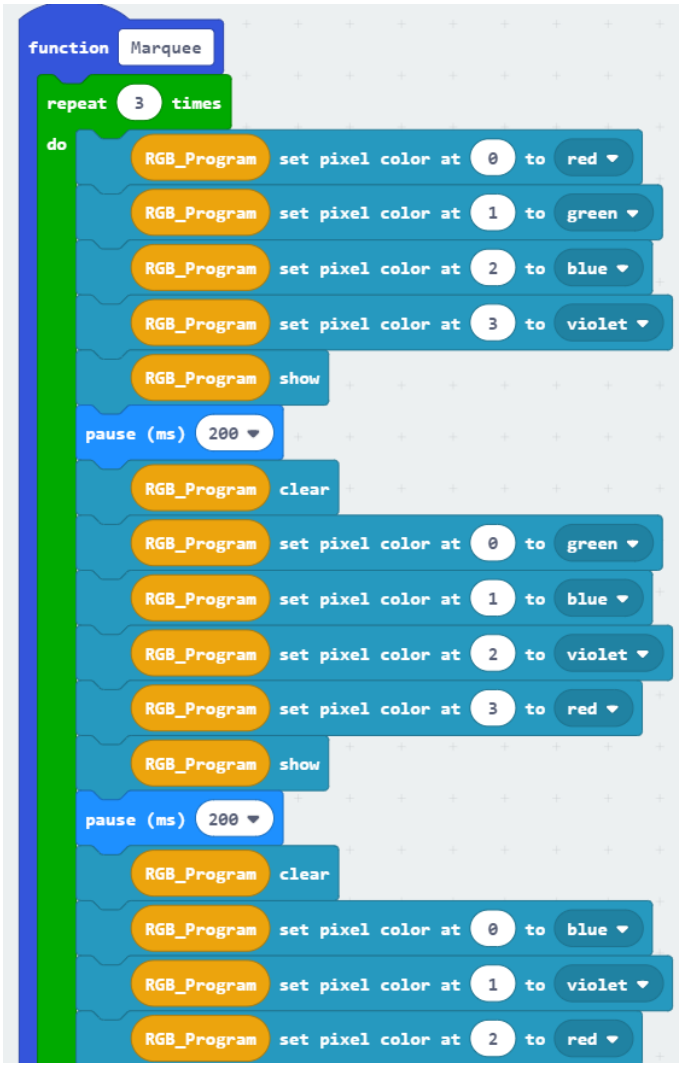


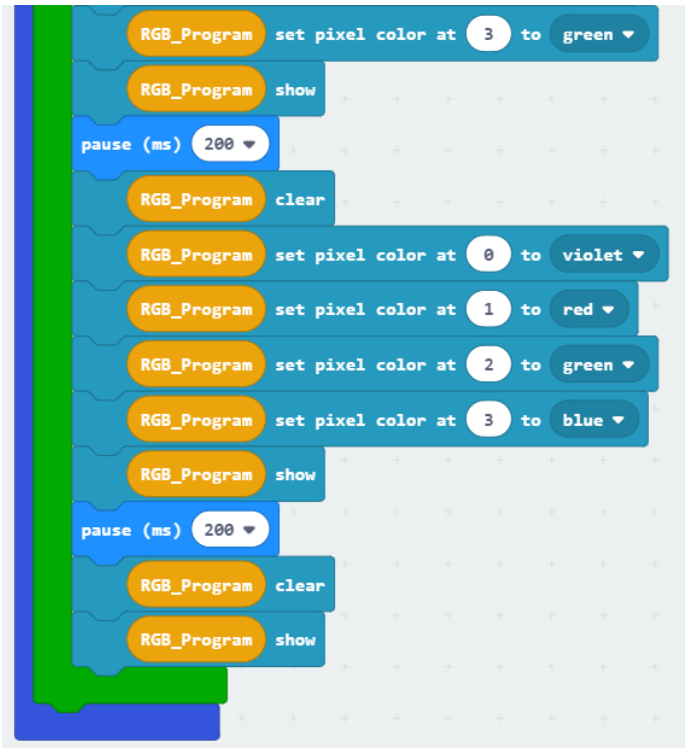
4.Combine building block

The summary program as shown below.




function Breathing light
repeat 3 times
do
for m from 0 to 255
do
RGB_Program set brightness m
RGB_Program show color red
RGB_Program show
pause (ms) 5
for m from 0 to 255
do
RGB_Program set brightness 255 - m
RGB_Program show color red
RGB_Program show
pause (ms) 5
RGB_Program set brightness 255
RGB_Program clear
RGB_Program show
function Water light
repeat 3 times
do
RGB_Program set pixel color at 0 to red
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program set pixel color at 1 to red
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program set pixel color at 2 to red
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program set pixel color at 3 to red
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program show


function Marquee
repeat 3 times
do
RGB_Program set pixel color at 0 to red
RGB_Program set pixel color at 1 to green
RGB_Program set pixel color at 2 to blue
RGB_Program set pixel color at 3 to violet
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program set pixel color at 0 to green
RGB_Program set pixel color at 1 to blue
RGB_Program set pixel color at 2 to violet
RGB_Program set pixel color at 3 to red
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program set pixel color at 0 to blue
RGB_Program set pixel color at 1 to violet
RGB_Program set pixel color at 2 to red

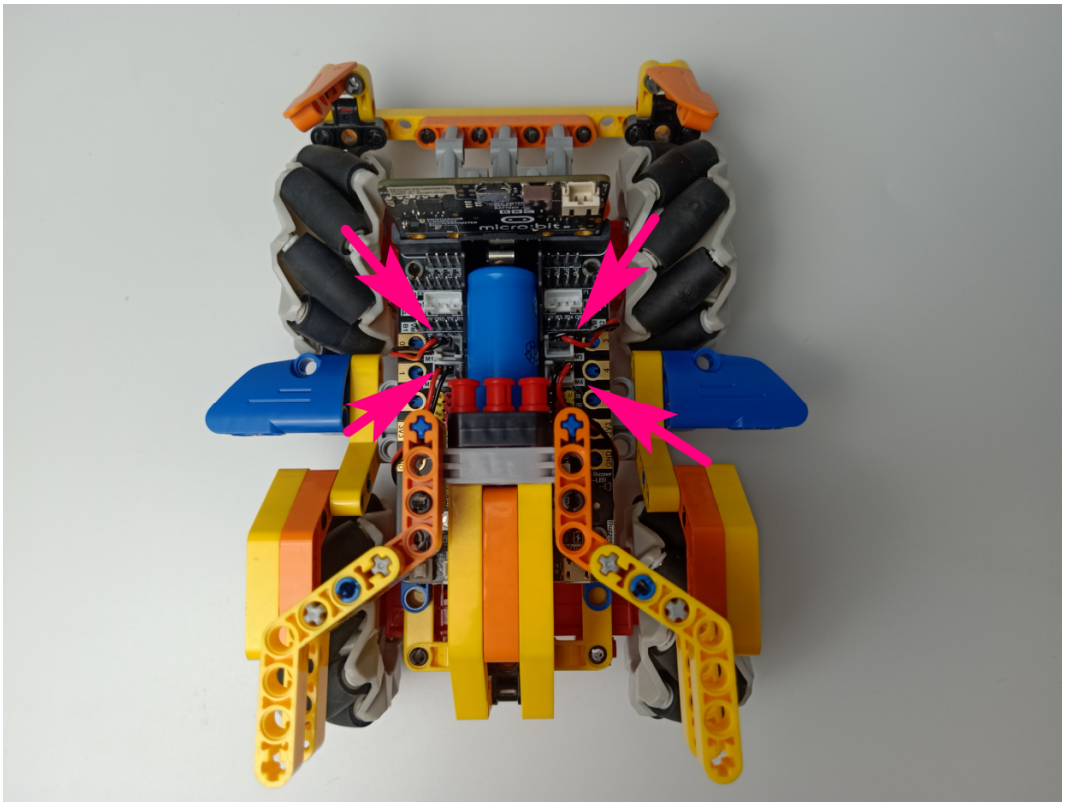

RGB_Program set pixel color at 3 to green
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program set pixel color at 0 to violet
RGB_Program set pixel color at 1 to red
RGB_Program set pixel color at 2 to green
RGB_Program set pixel color at 3 to blue
RGB_Program show
pause (ms) 200
RGB_Program clear
RGB_Program show

5.Assembly steps

Please refer to the **1.Omnibit installation steps** in the **1.Assembly steps** folder for building blocks assembly steps.

6.About wiring

The left front motor is connected to the M1 interface of the Super:bit expansion board. The black line is on the battery side;
The left rear motor is connected to the M2 interface of the Super:bit expansion board, The black line is on the battery side;
The right front motor is connected to the M3 interface of the Super:bit expansion board, The black line is on the battery side;
The right rear motor is connected to the M4 interface of the Super:bit expansion board, The black line is on the battery side.
As shown below.



7. Experimental phenomena

After the program is successfully downloaded. The micro:bit dot matrix will display the smile and turn off all RGB light. Then, red RGB light will flash 3 times, the water light 3 times, the marquee 3 times, the breathing light 3 times, And keep the loop in such a state.