Dancing and singing

1.Learning goals

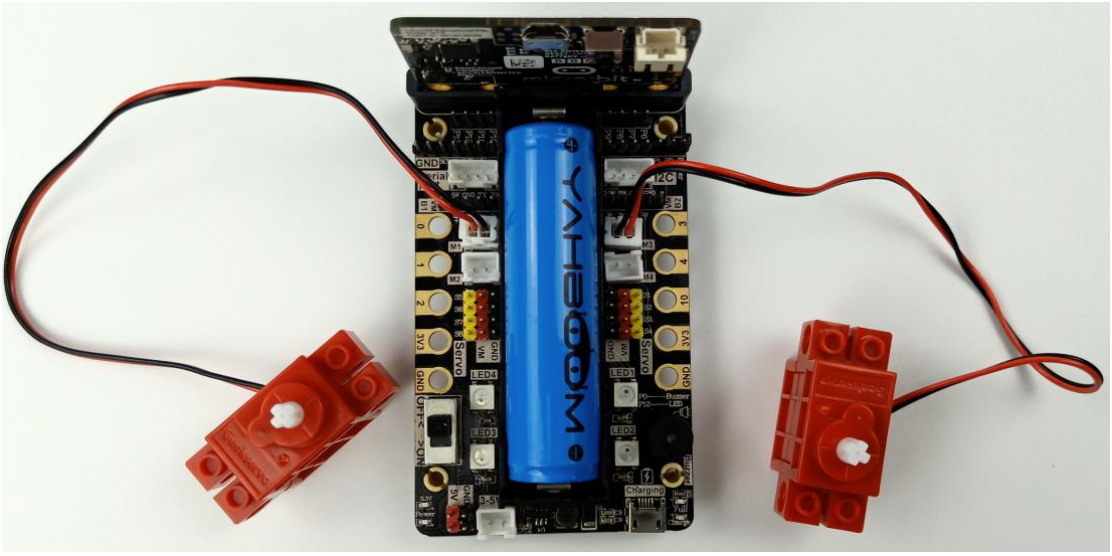
In this course, we mainly learn how to use the MakeCode graphical programming to realize the "singing" and "dancing" of the Freestyle, that is, the motor, buzzer and RGB lights work simultaneously.

2.Building block assembly steps

For the building block construction steps, please refer to the installation manual or building block installation picture of [Assembly course]-[Freestyle].

3.Wiring of motor and servo

The motor wiring on the left side of the freestyle is inserted into the M1 interface of the Super:bit expansion board, and the black wire is close to the battery side;
The motor wiring on the right side of the freestyle is inserted into the M3 interface of the Super:bit expansion board, and the black wire is close to the battery side;
As shown below:



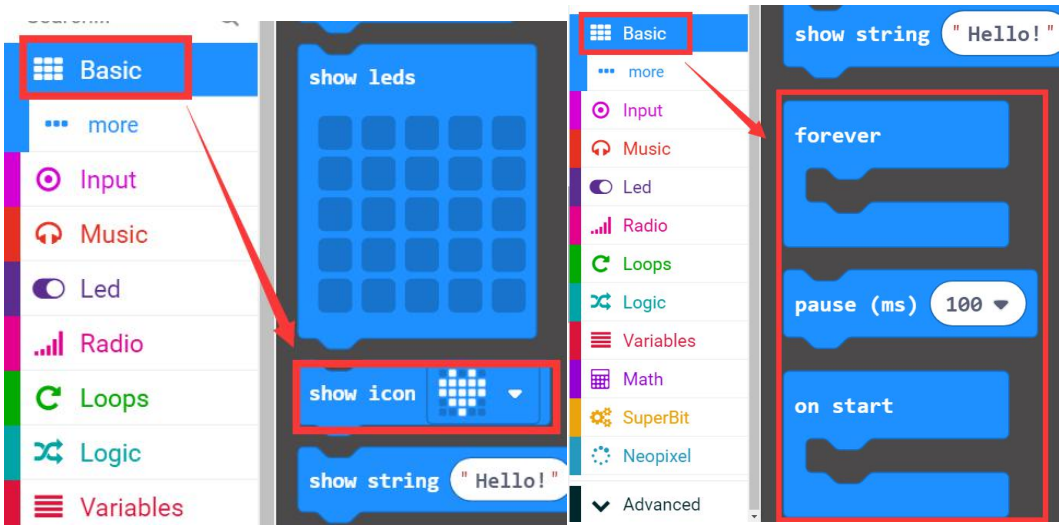
4.Programming method

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/SuperBit** to program.

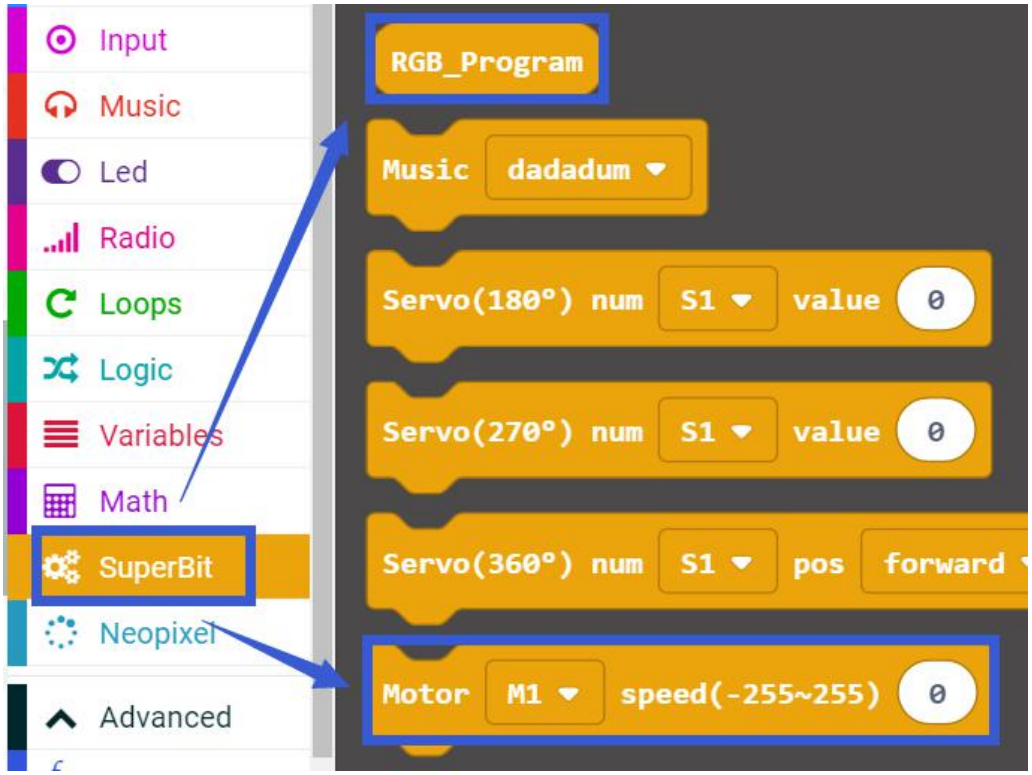
Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: **https://github.com/lzty634158/SuperBit**, you can program.

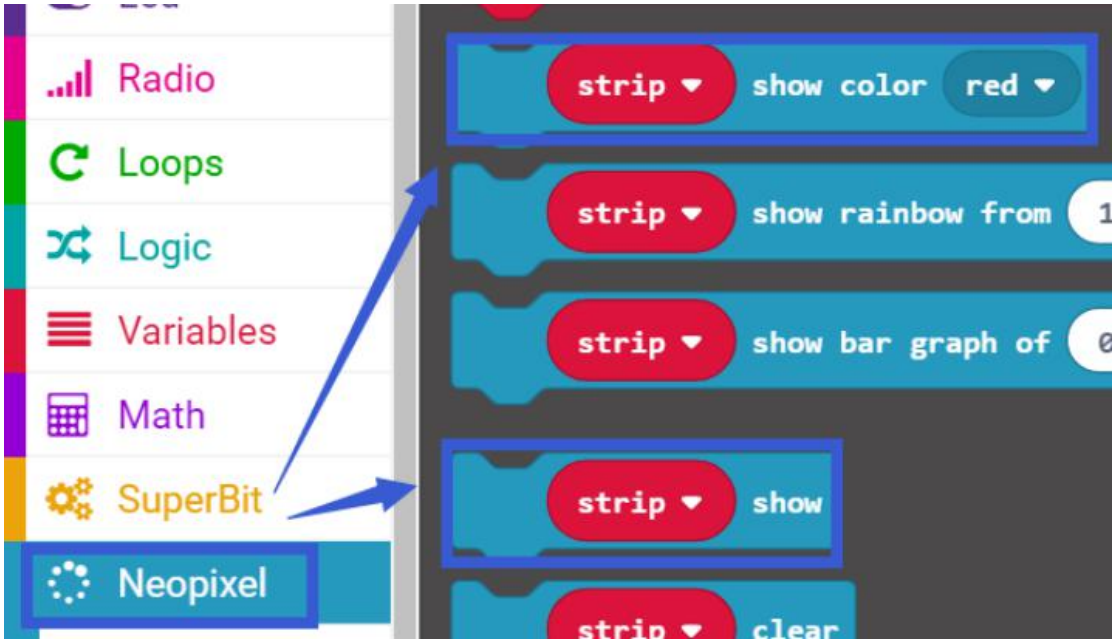
5.Looking for blocks

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


Basic
more
Input
Music
Led
Radio
Loops
Logic
Variables
show leds
show icon
show string
" Hello! "
Basic
more
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBit
Neopixel
Advanced
show string
" Hello! "
forever
pause (ms)
100
on start

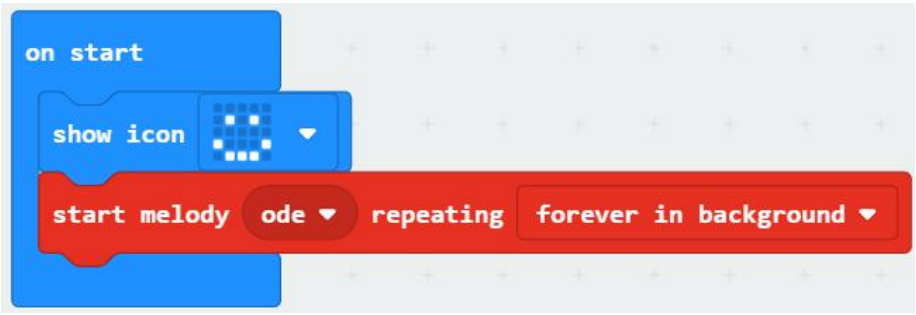

Music
Led
Radio
Loops
Logic
ring tone (Hz)
Middle C
rest(ms)
1
beat
start melody
dadadum
repeating
once

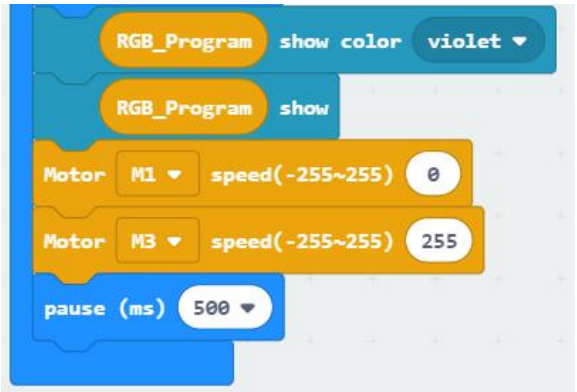

Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBit
Neopixel
Advanced
RGB_Program
Music
dadadum
Servo(180°) num
S1
value
0
Servo(270°) num
S1
value
0
Servo(360°) num
S1
pos
forward
Motor
M1
speed(-255~255)
0



6.Combine block

The summary program is shown below.

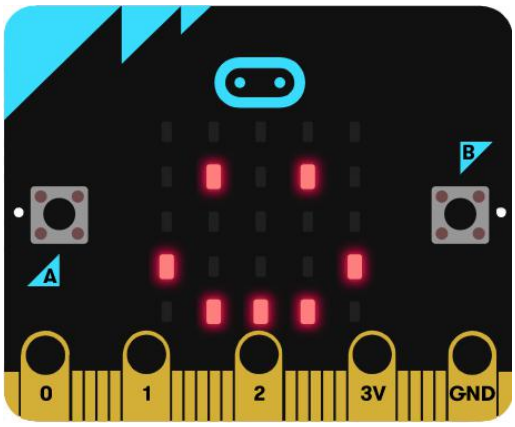




7.Experimental phenomena

After the program is successfully downloaded, the micro: bit dot matrix will display the smile pattern, as shown below. Open the power switch, the Freestyle robot will play the music "Ode", and freestyle will move forward-> backward-> spin left -> spin

right switch different motion states, RGB lights will switch to different colors.



If you need to restart, press the reset button on the back of the micro:bit board.