Dancer

1. Learning objectives

In this course, we mainly learn how to use MakeCode graphical programming to make Pretty car "sing" and "dance" at the same time, that is, the motor, servo, buzzer, and RGB light work at the same time.

2. Building blocks

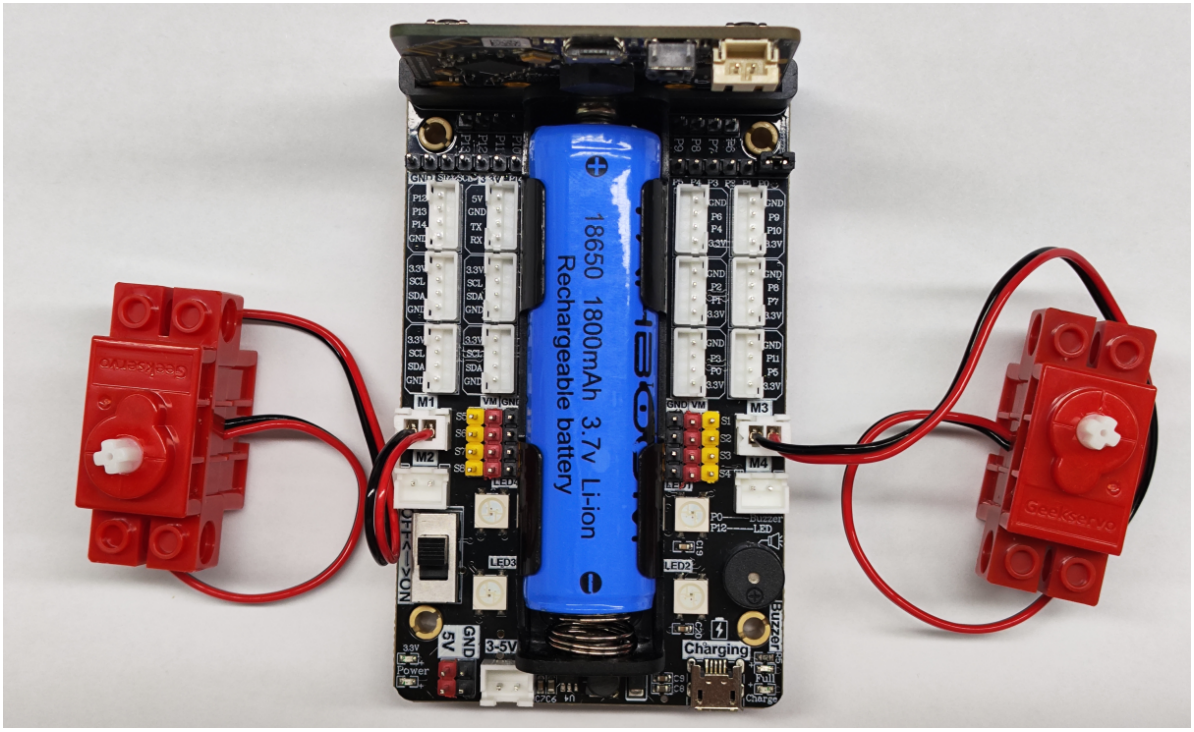
For the building blocks steps, please refer to the installation drawings or building blocks installation album in the **[Assembly Course]--[Pretty car]** in the materials.

3. Motor wiring

The motor wiring on the left side of the car is inserted into the M1 interface of the Super:bit expansion board, and the black line is close to the battery side;

The motor wiring on the right side of the car is inserted into the M3 interface of the Super:bit expansion board, and the black line is close to the battery side;

As shown below:



4. Programming

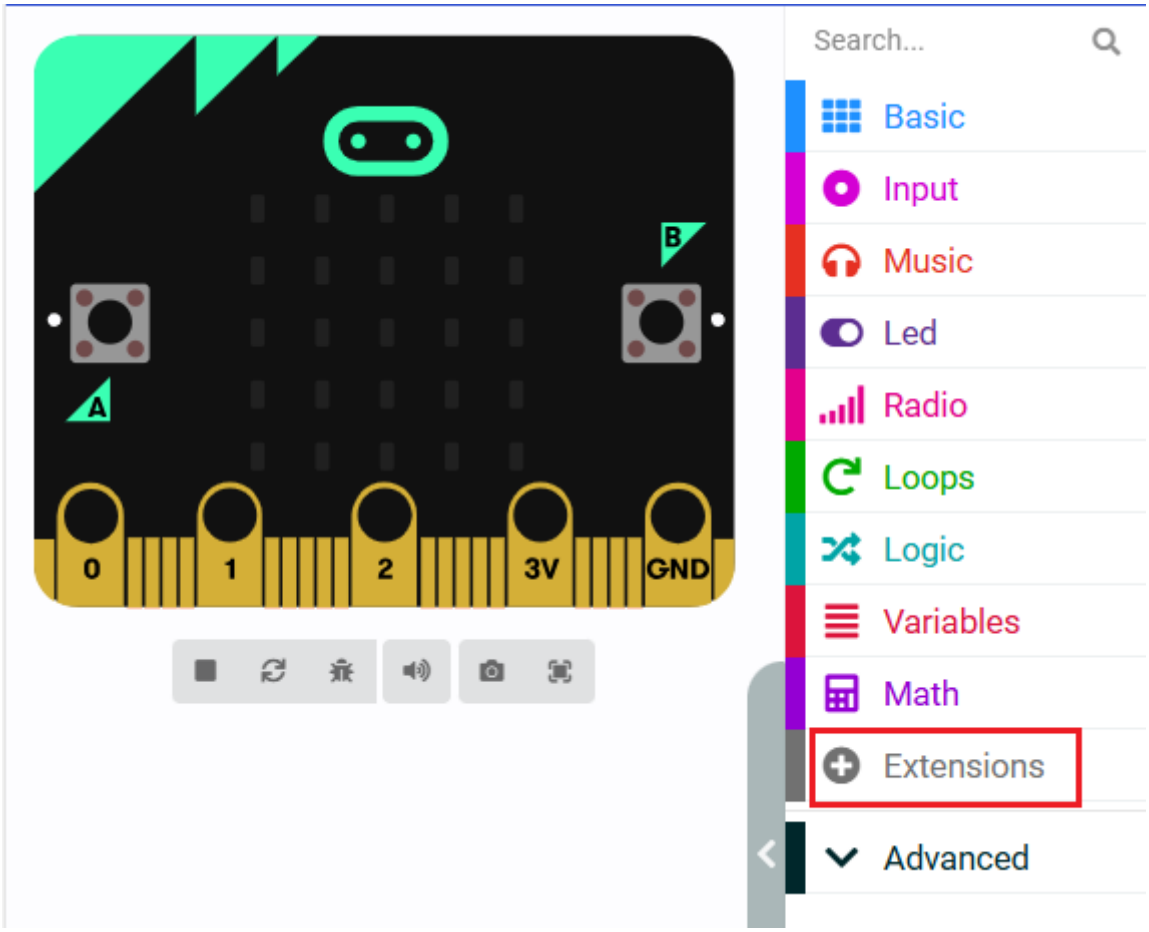
Method 1 Online programming:

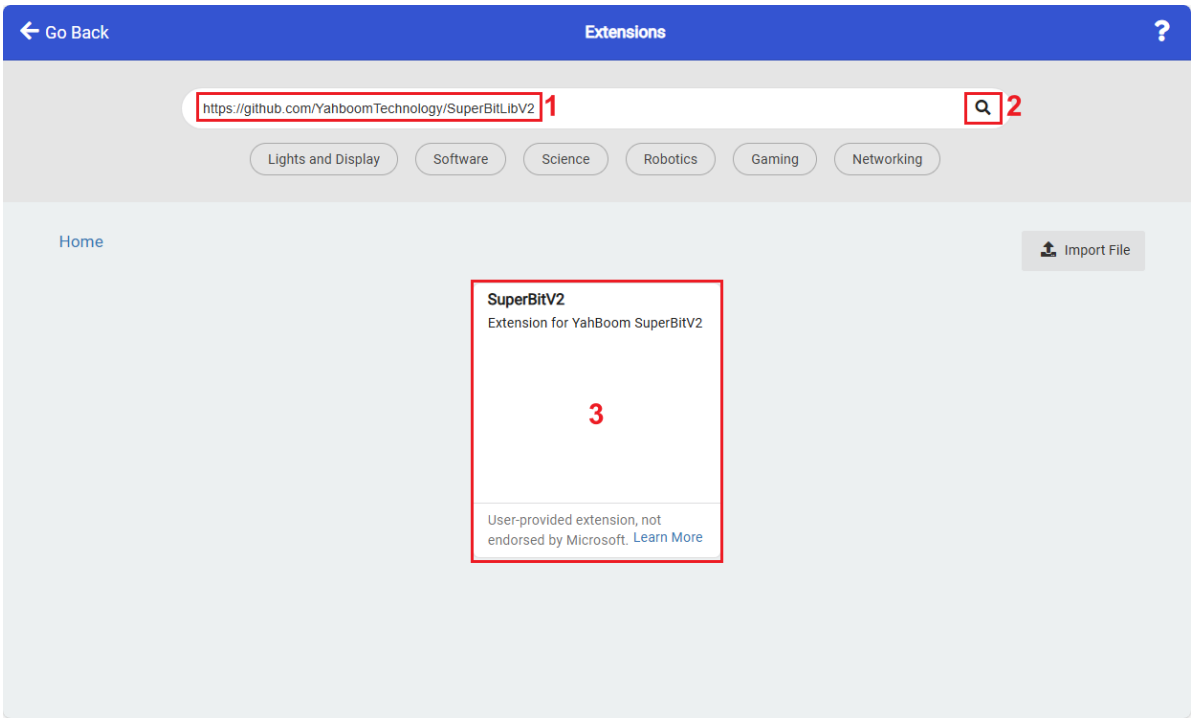
First, connect micro:bit to the computer via a USB data cable, and a U disk will pop up on the computer. Click the URL in the U disk: https://makecode.microbit.org/ to enter the programming interface. Then, add the Yahboom smart software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

Method 2 Offline programming:

Open the offline programming software MakeCode and enter the programming interface. Click [New] and add the Yahboom smart software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

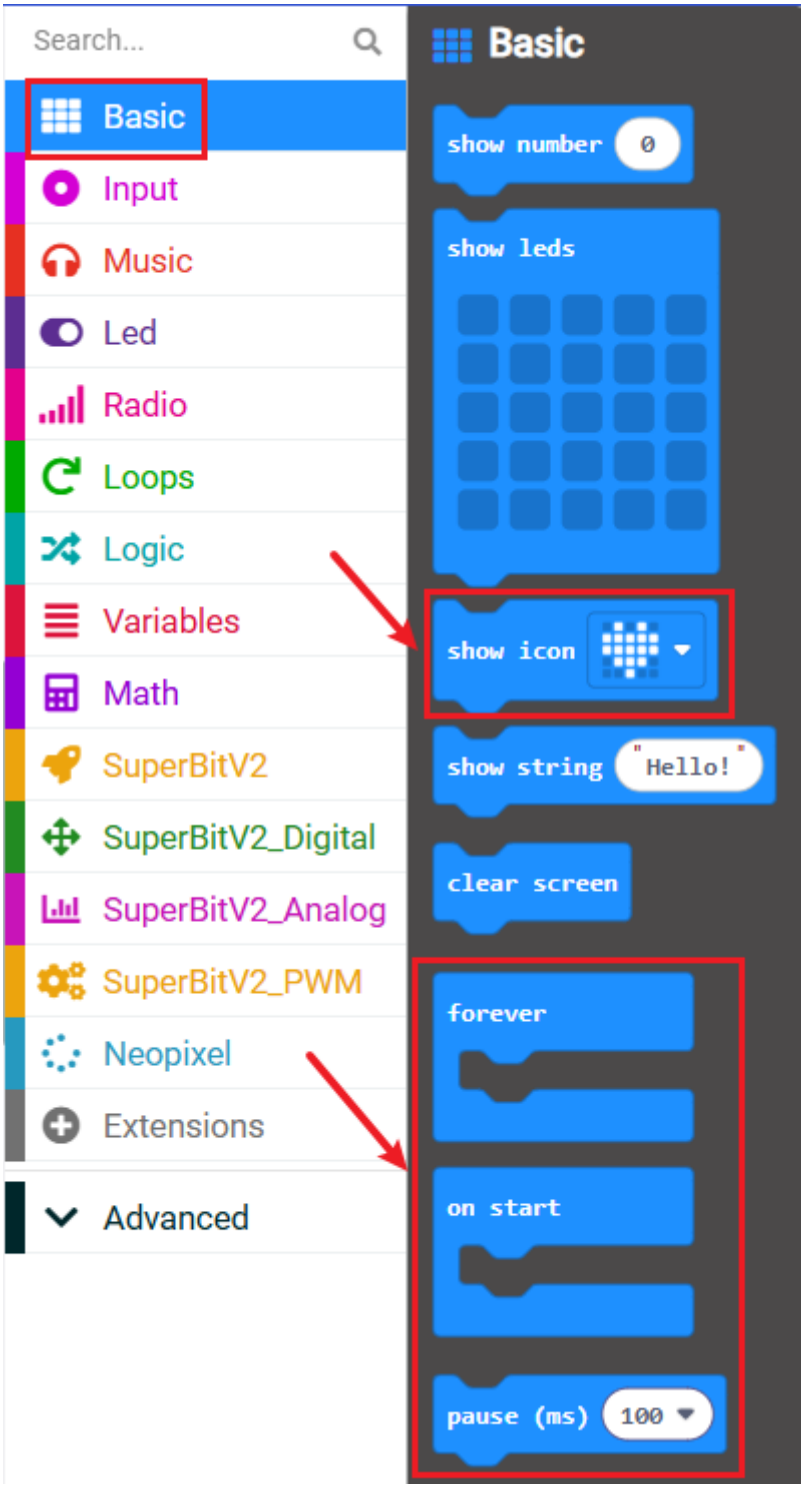
4.1 Add expansion package

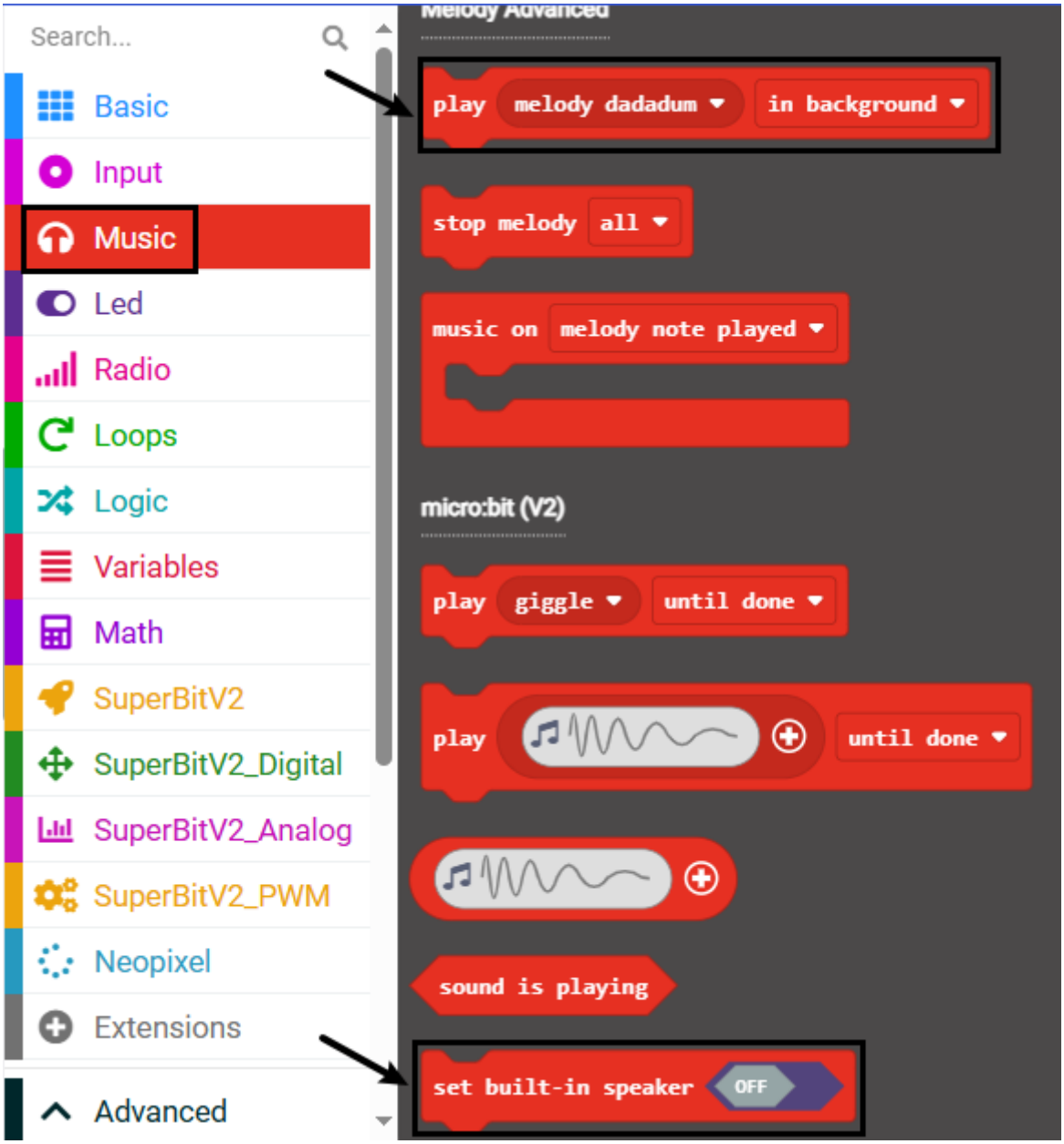


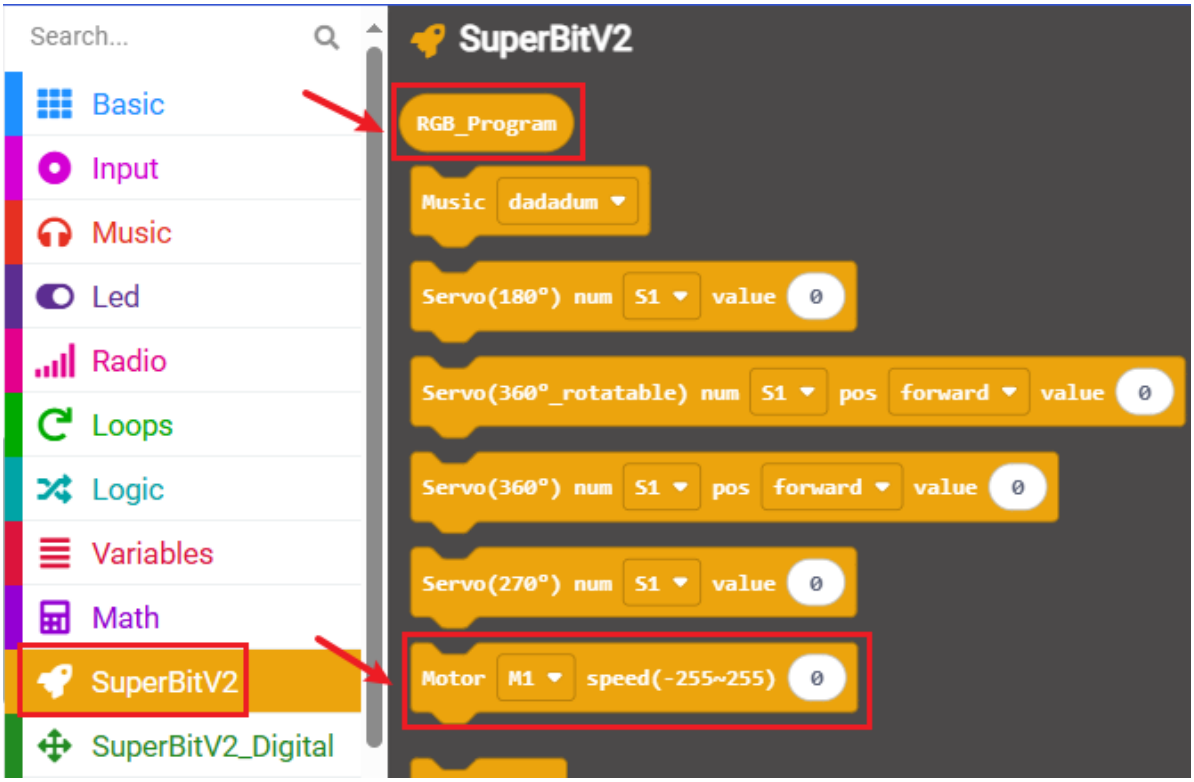


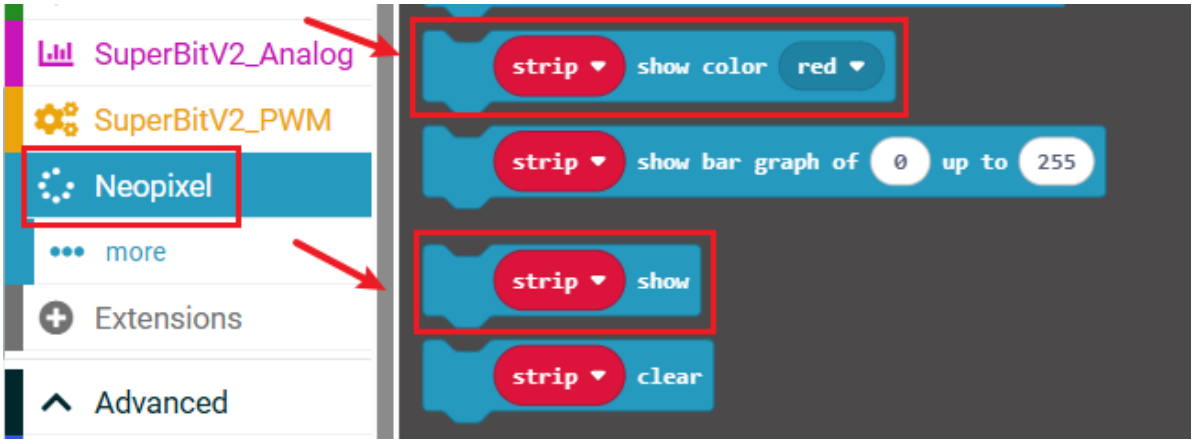
4.2 Blocks used

The location of the blocks required for this programming is shown in the figure below.


Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBitV2
SuperBitV2_Digital
SuperBitV2_Analog
SuperBitV2_PWM
Neopixel
Extensions
Advanced
Basic
show number 0
show leds
show icon
show string "Hello!"
clear screen
forever
on start
pause (ms) 100

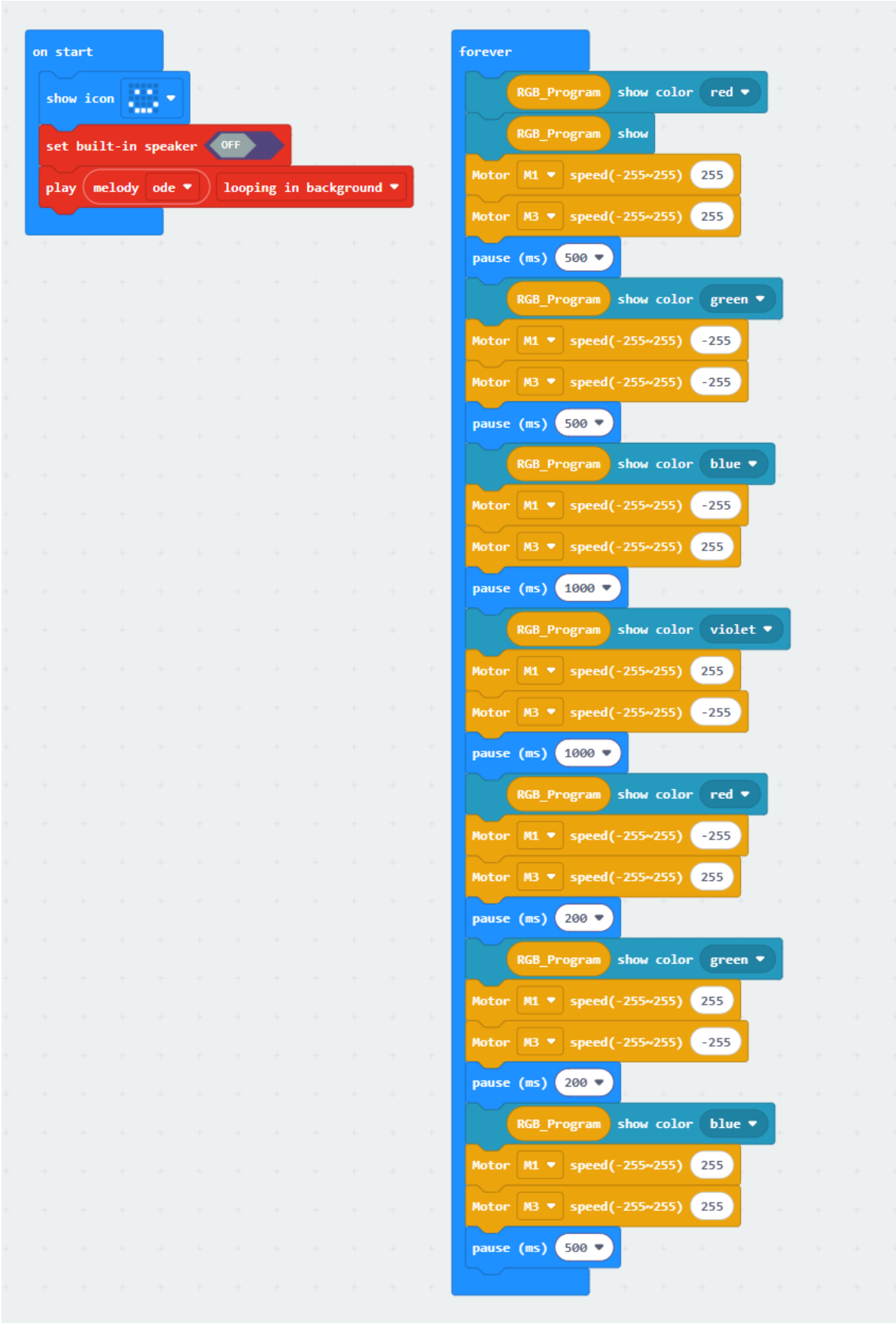

Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBitV2
SuperBitV2_Digital
SuperBitV2_Analog
SuperBitV2_PWM
Neopixel
Extensions
Advanced
Melody Advanced
play melody dadadum in background
stop melody all
music on melody note played
micro:bit (V2)
play giggle until done
play until done
sound is playing
set built-in speaker OFF


Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBitV2
SuperBitV2_Digital
SuperBitV2
RGB_Program
Music dadadum
Servo(180°) num S1 value 0
Servo(360°_rotatable) num S1 pos forward value 0
Servo(360°) num S1 pos forward value 0
Servo(270°) num S1 value 0
Motor M1 speed(-255~255) 0



4.3 Combining blocks

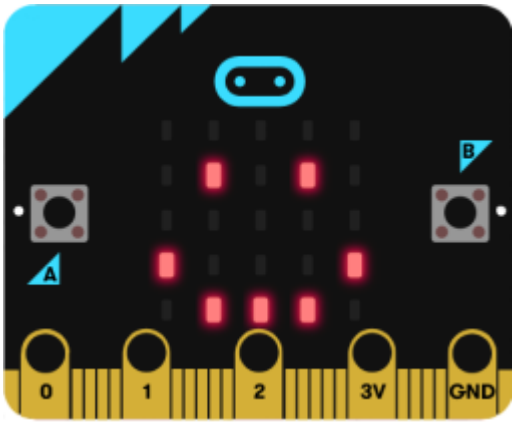
The summary program is shown in the figure below.



You can also directly open the **microbit-Dancer.hex** file provided in this experiment and drag it into the browser that opens the URL, and the program diagram of this project source code will be automatically opened

5. Experimental phenomenon

After the program is downloaded successfully, the micro:bit dot matrix will display a smiley face, as shown in the figure below. Turn on the power switch, Pretty car will play the music "Ode to Joy", and will switch between different motion states of forward-->backward-->left-->right, and the RGB light will switch to different colors.



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