Music Ferris wheel

1.Learning goals

In this lesson, we mainly learn how to control motor by micro:bit and Super:bit expansion board.

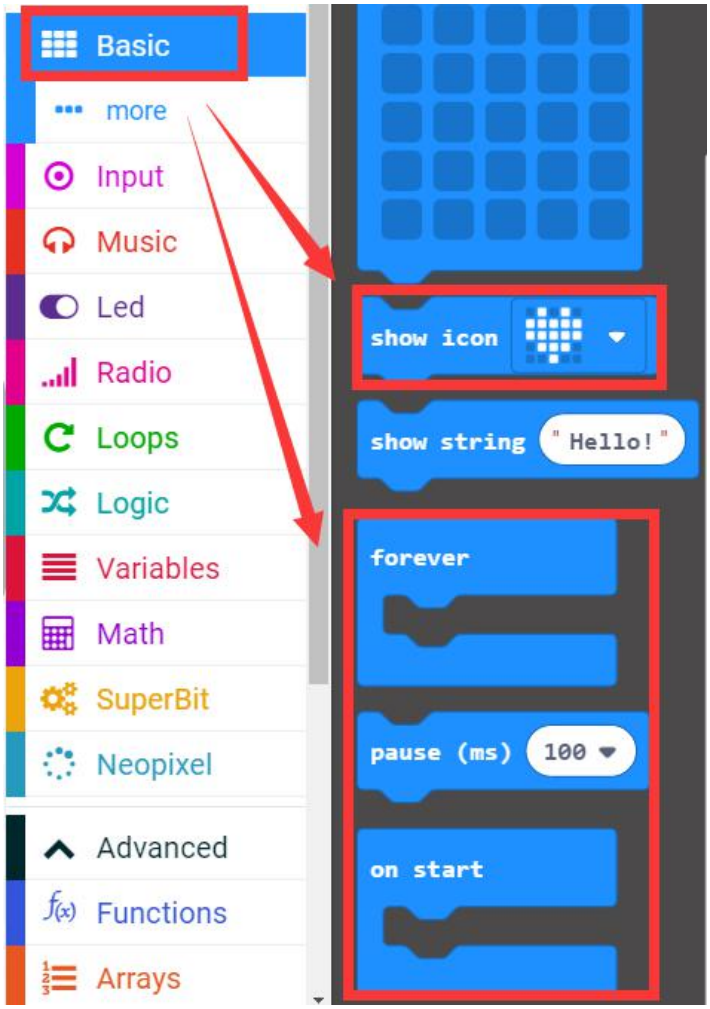
2.Programming method

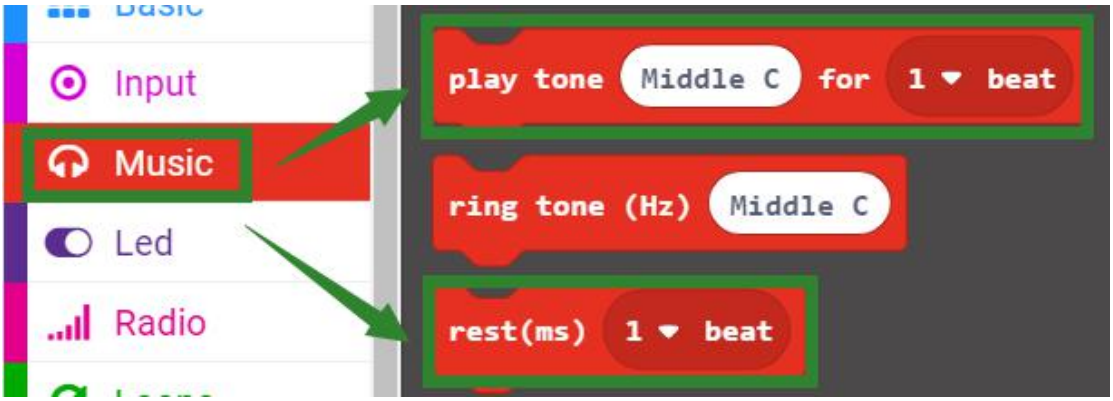
Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: **http://microbit.org/** to enter the programming interface. Add the Yahboom package https://github.com/lzty634158/SuperBit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

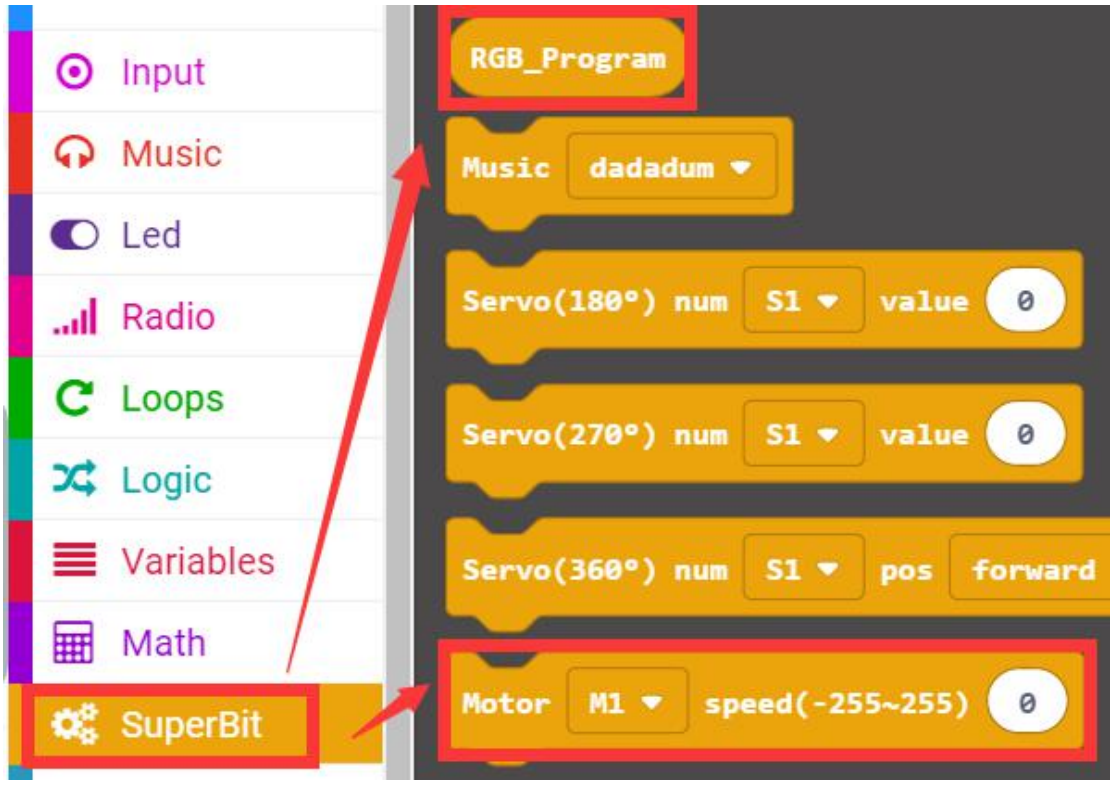
Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: https://github.com/lzty634158/SuperBit, you can program.

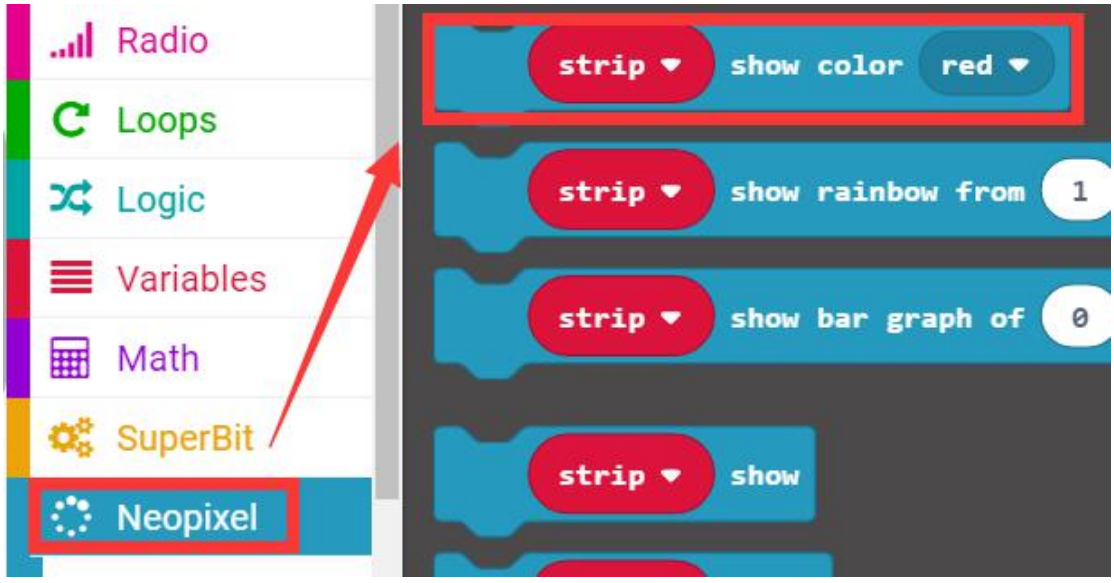
3.Looking for blocks

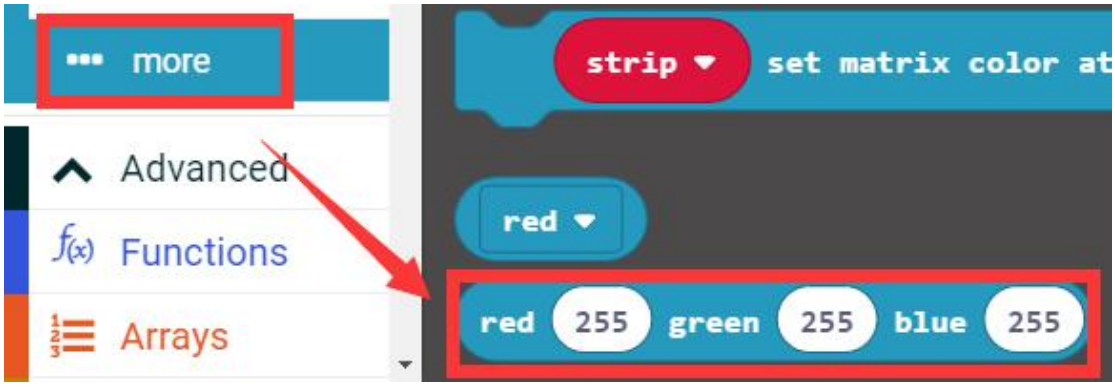
The following is the location of the building blocks required for this programming.




Input
Music
Led
Radio
play tone Middle C for 1 beat
ring tone (Hz) Middle C
rest(ms) 1 beat


Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBit
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


Radio
Loops
Logic
Variables
Math
SuperBit
Neopixel
strip show color red
strip show rainbow from 1
strip show bar graph of 0
strip show



4.Combine building block

For details of the program, please import the **microbit-Music-Ferris-wheel.hex** file into the MakeCode editor for viewing.

5.Assembly steps

Please refer to the **Ferris wheel assembly steps folder** in the **Assembly instructions** folder for building blocks assembly steps.

6.About wiring

We need to connect two building block motors to the **M1** interfaces of the Super:bit expansion board.

7. Experimental phenomena

After the program is successfully downloaded, open the power, the micro:bit dot matrix will display the “music” pattern, and the music will be played in a loop. Motor forward 3 seconds, the speed is 255. Then, stop 0.5 seconds. Next, motor forward 3 seconds, the speed is 255. Then, stop 0.5 seconds. RGB light switch color: red -> green -> blue -> white, time interval 0.5 seconds.

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