

Waving wings

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1. Learning Objectives
2. Building Blocks
3. Motor Wiring
4. Programming
 - 4.1 Add expansion package
 - 4.2 Building blocks used
 - 4.3 Combined blocks
5. Experimental phenomenon

1. Learning Objectives

In this course, we mainly learn how to use MakeCode graphical programming to make the "wings" on the left and right sides of the dragon knight shape flutter, that is, the motor rotates.

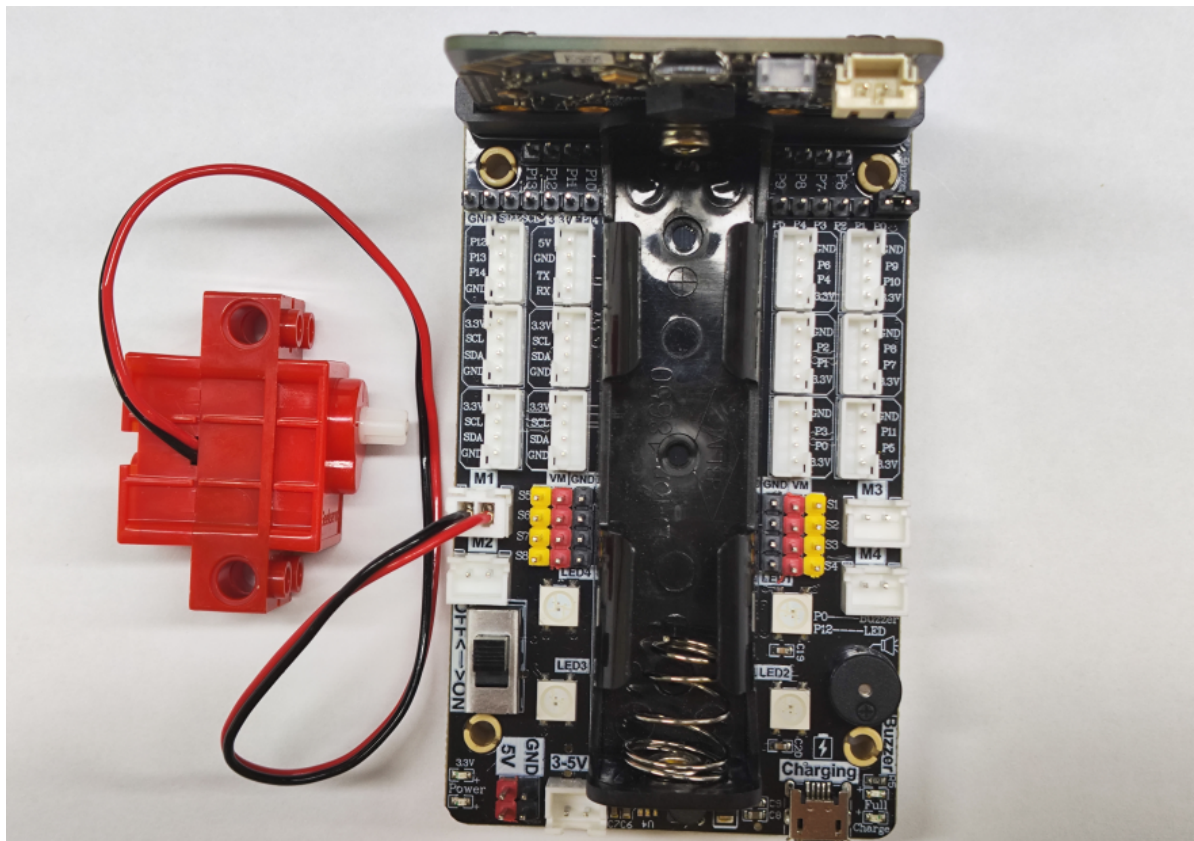
2. Building Blocks

For detailed steps of building blocks, please refer to the installation drawings of **[Assembly course]-[Biped robot]** in the materials or the building block installation album.

3. Motor Wiring

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

As shown below:



4. Programming

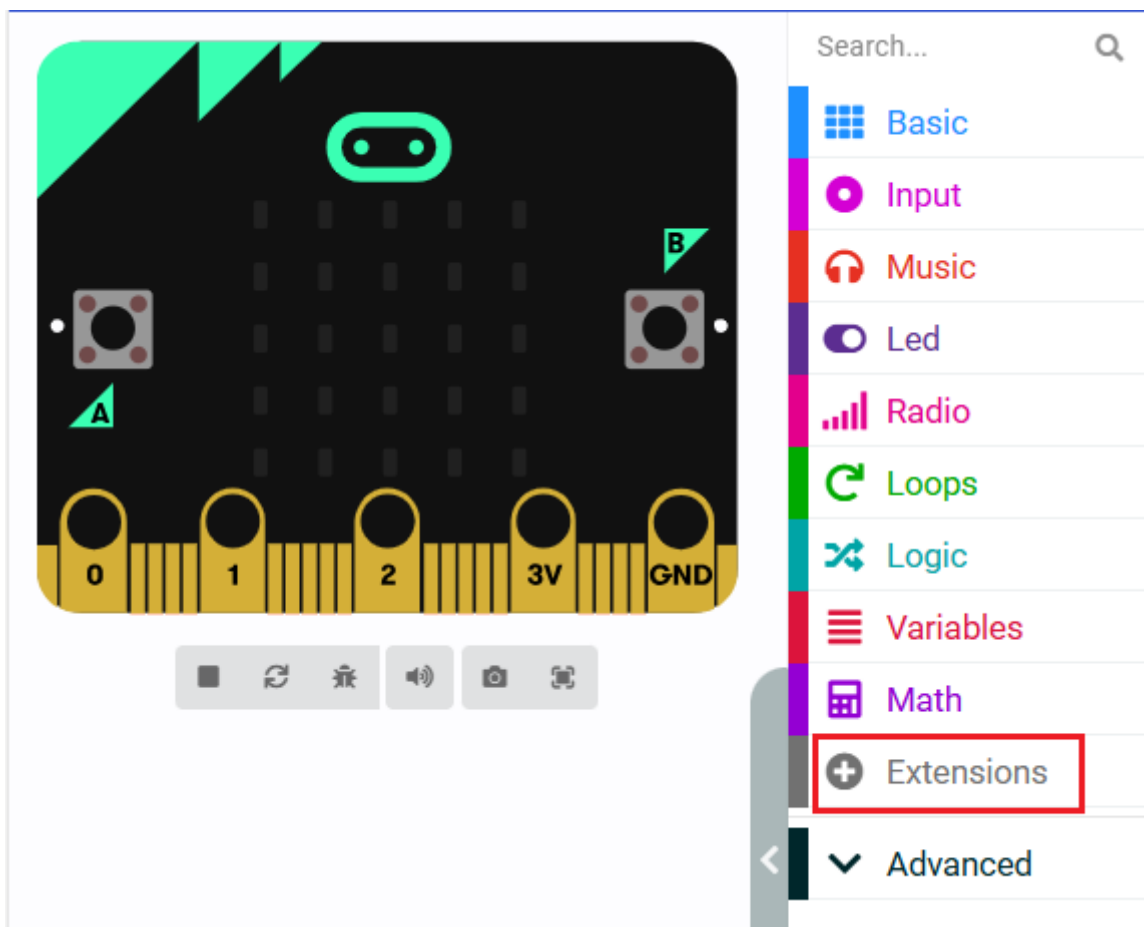
Method 1 Online Programming:

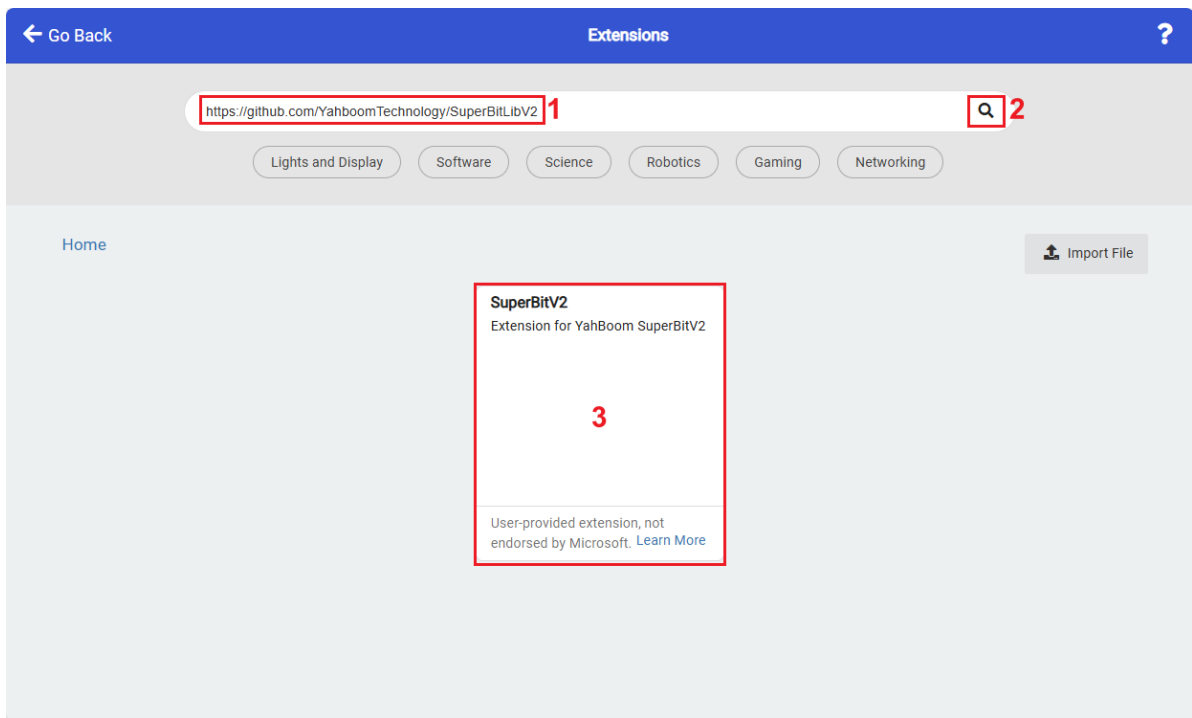
First, connect micro:bit to the computer via a USB data cable, and the computer will pop up a U disk. Click the URL in the U disk: <https://makecode.microbit.org/> to enter the programming interface. Then, add the Yahboom software package <https://github.com/YahboomTechnology/SuperBitLibV2>, and you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

Method 2 Offline programming:

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

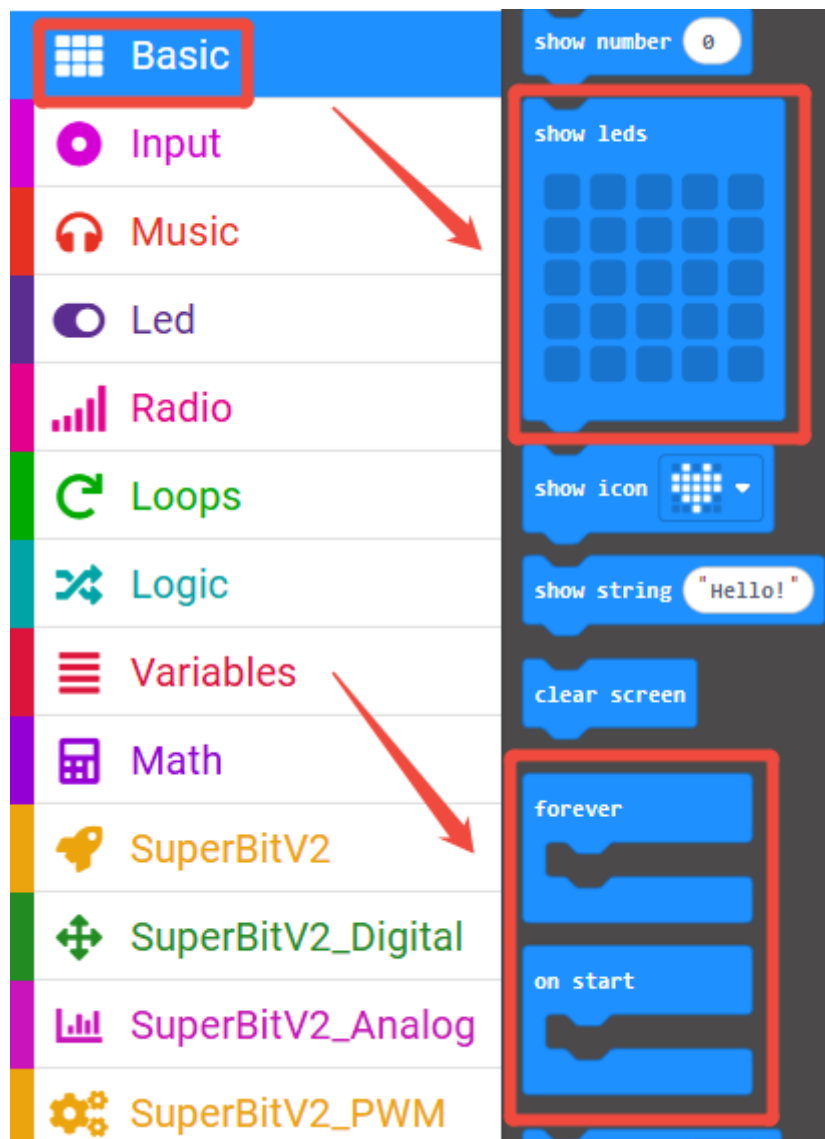
4.1 Add expansion package

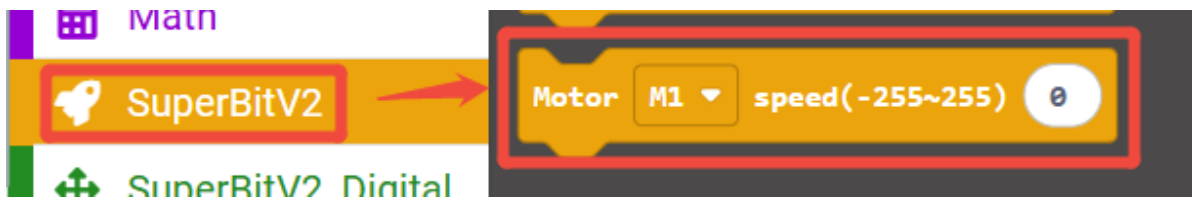




4.2 Building blocks used

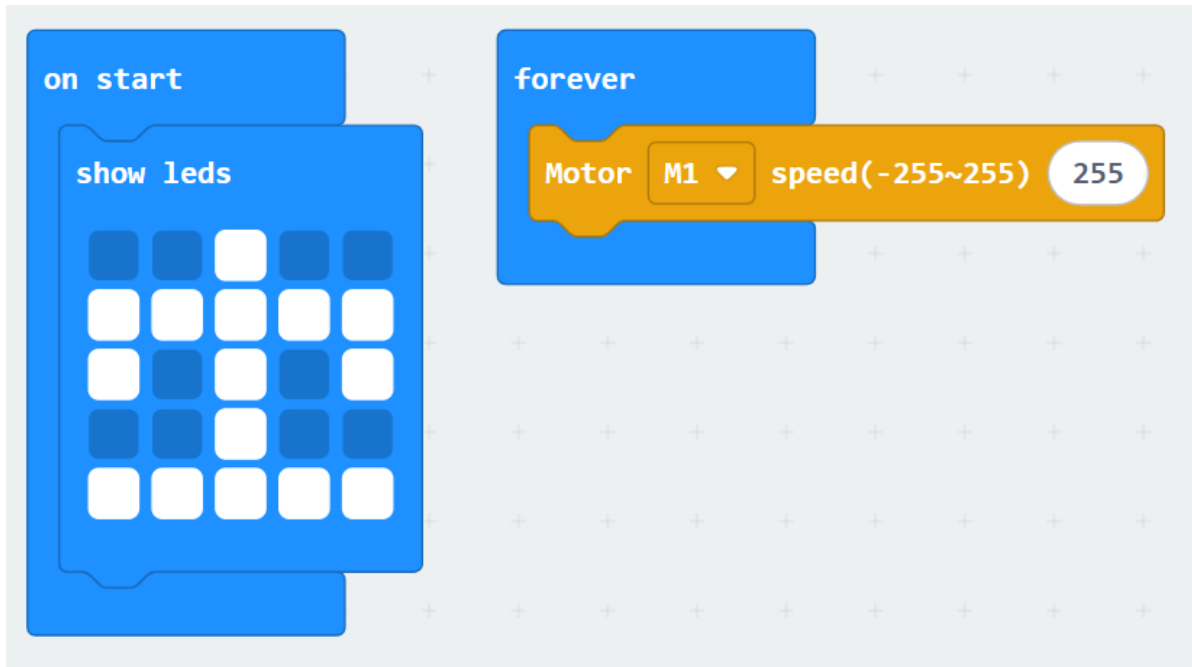
The location of the building blocks required for this programming is shown in the figure below.





4.3 Combined blocks

The summary program is shown in the figure below.



You can also directly open the **microbit-Waving-wings.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 successfully downloaded, the micro:bit dot matrix will display a heart. Turn on the power switch, the pattern shown in the figure below will be displayed on the micro:bit dot matrix, and the "wings" on both sides of the dragon knight will begin to wave.

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