

Cannonball shooting

1.Learning goals

In this course, we mainly learn how to realize cannonball shooting function by through MakeCode programming.

When the A button on the micro:bit board is pressed, the "cannonball" will be shot; when the B button on the micro:bit board is pressed, the throwing rod will reset.

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]-[Mobile shooter].

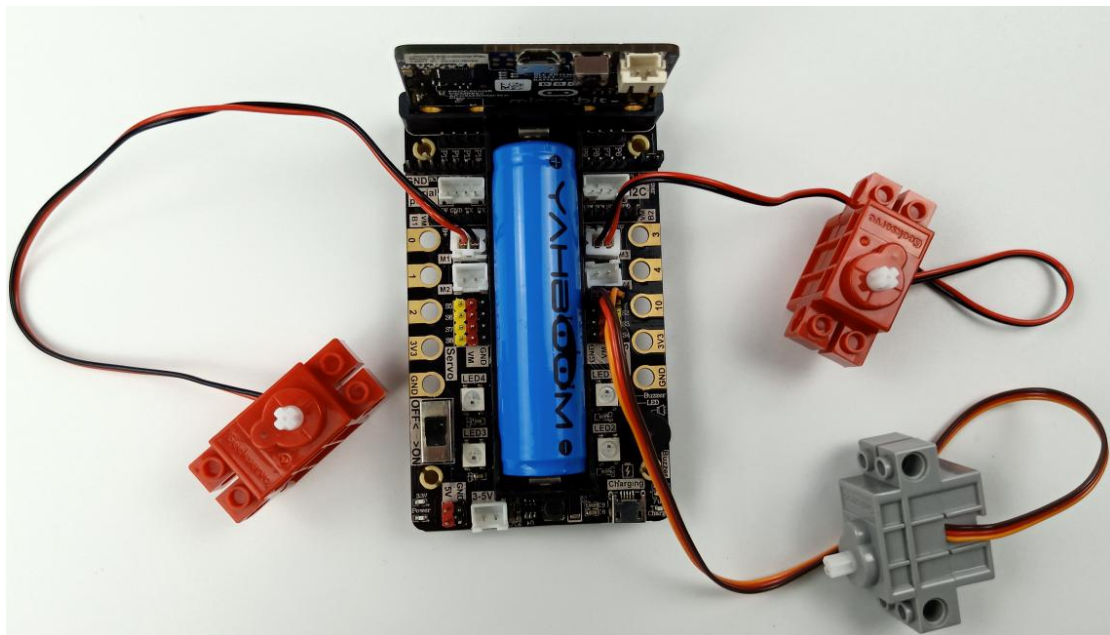
3.Wiring of motor and servo

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 wire 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 wire is close to the battery side;

Building block servo insert into the Super: bit expansion board S1 interface, and the orange wiring connect the yellow pin of S1.

As shown below:



Note:

For the first course related to building block servo, we need to remove the gear on the servo and upload the program of this course to micro: bit. Then, turn on the power switch of the Super:bit expansion board and wait for the building block servo turn to the initial position. Next, we can turn off the power, and adjust the throwing rod of the car to keep it parallel to the ground. Finally, install the servo. (If

you have used programs related to mobile shooter before, you can skip this step)

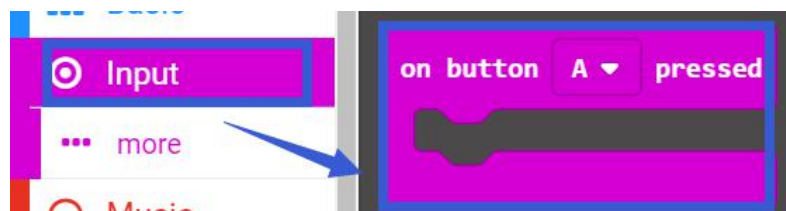
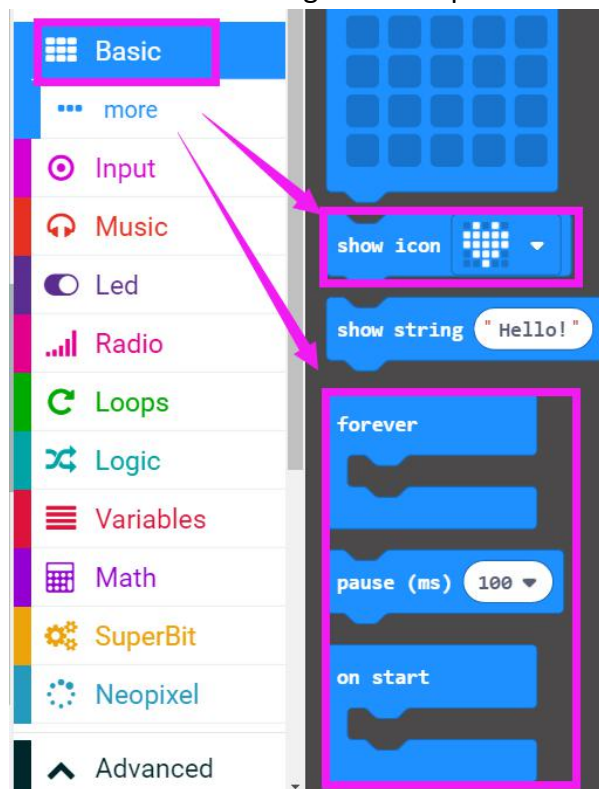
4. Programming method

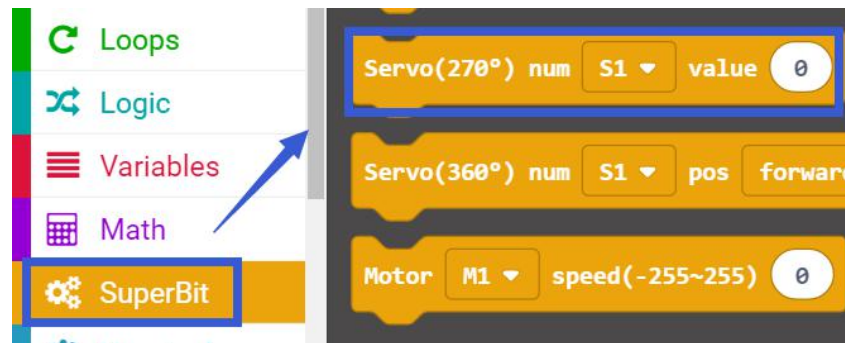
Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: <http://microbit.org/> to enter the programming interface. Add the Yahboom package <https://github.com/lzty634158/SuperBit>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

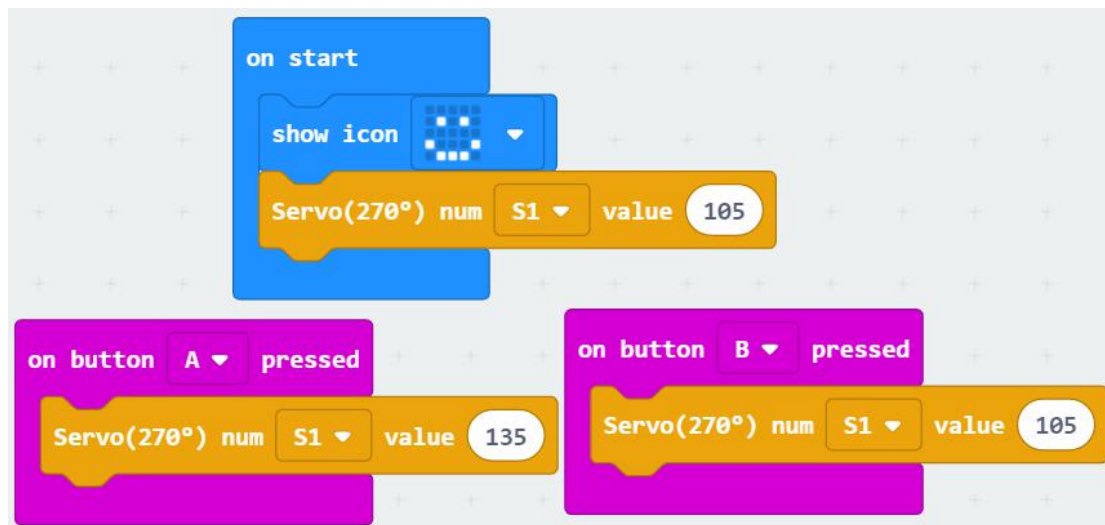
The following is the location of the building blocks required for this programming.





6.Combine block

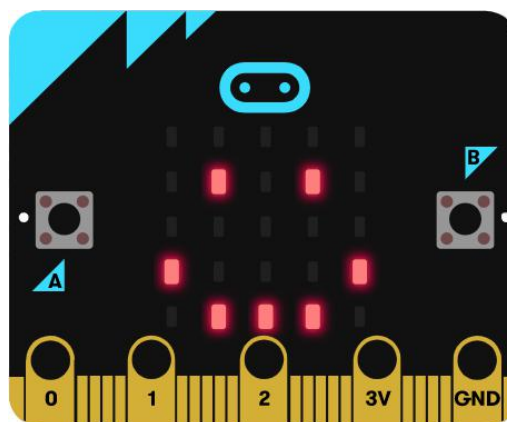
The summary program is shown below.



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 servo will initialize to 105 ° (throwing rod reset). When we press the micro: bit A button, the throwing rod will throw a "cannonball"; when we press the B button, the throwing rod will reset.



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