Bite the hand crocodile

Bite the hand crocodile
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1. Learning objectives

In this course, we mainly learn how to use MakeCode graphical programming to make the Changing Face building block shape realize the "biting hand crocodile" gameplay. When we press the A button or the B button, the Changing Face mask will fall off randomly.

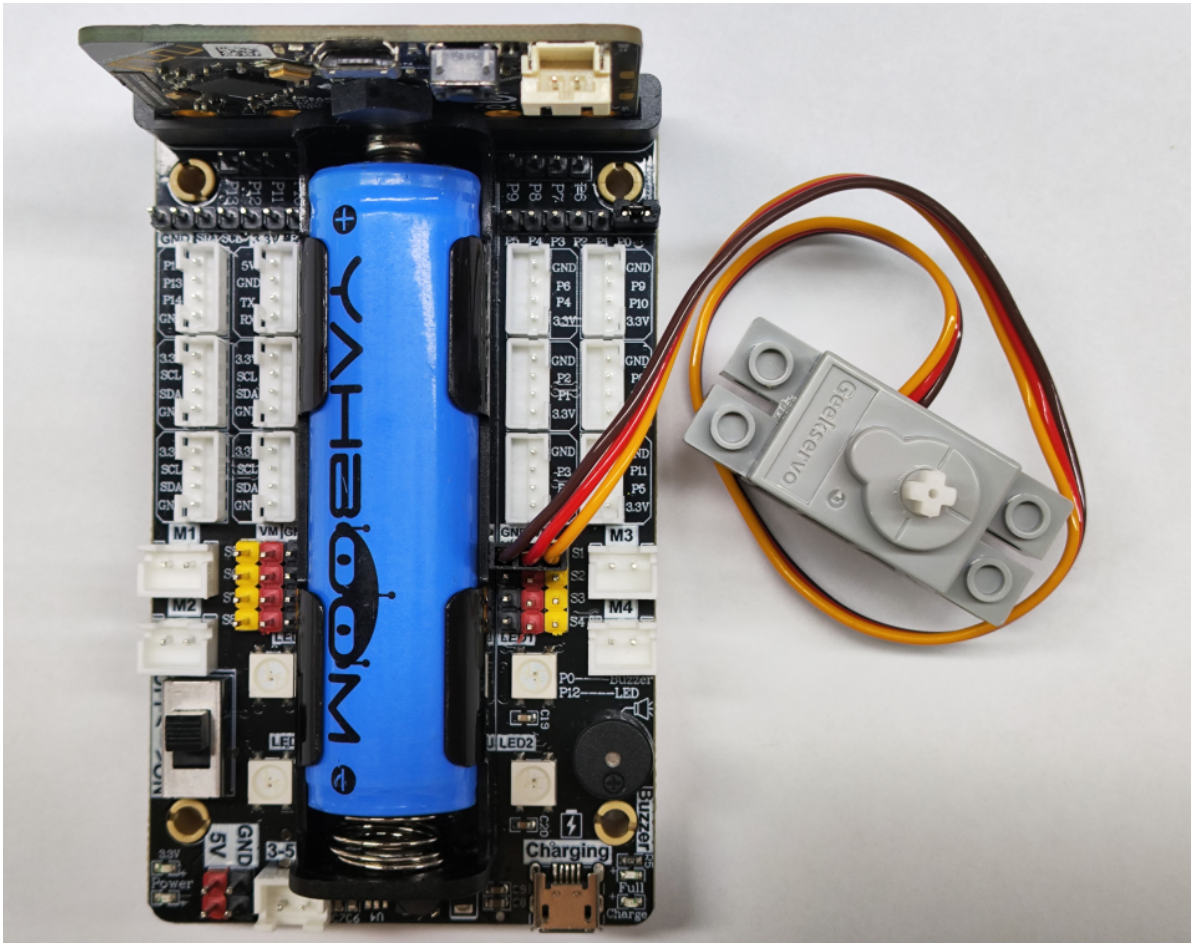
2. Building blocks

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

3. Motor wiring

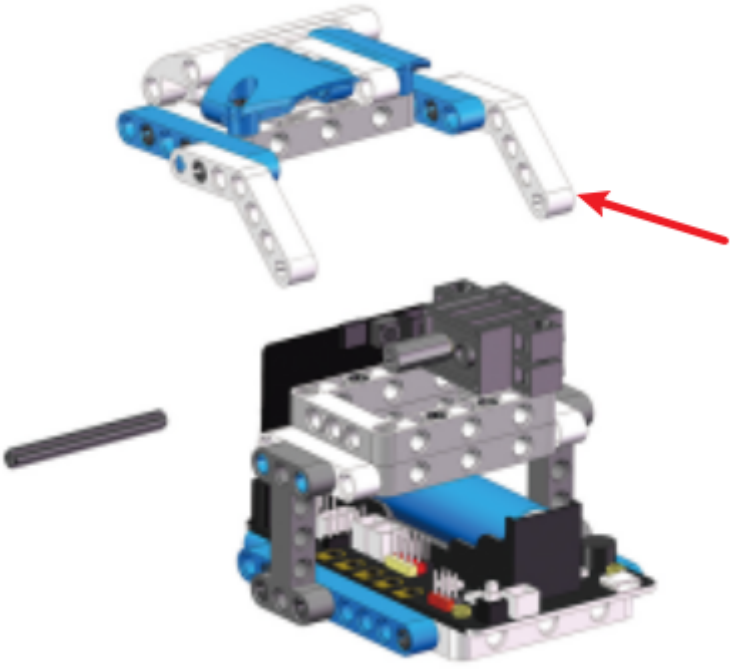
Insert the building block servo wiring into the Super:bit expansion board S1 interface, and the servo orange wiring into the yellow pin of S1.

As shown in the figure below:



! Notes:

When taking the course related to the building block servo for the first time, we need to remove the white building blocks installed on the servo and upload the program of this course to the micro:bit; then turn on the power switch of the Super:bit expansion board and wait for the building block servo to turn to the initial position; then, we can turn off the power, adjust the Changing Face mask to the closed state, as shown in the figure below, and then install the building blocks. (If you have used the Changing Face and servo-related programs before, you can skip this step)



4. Programming

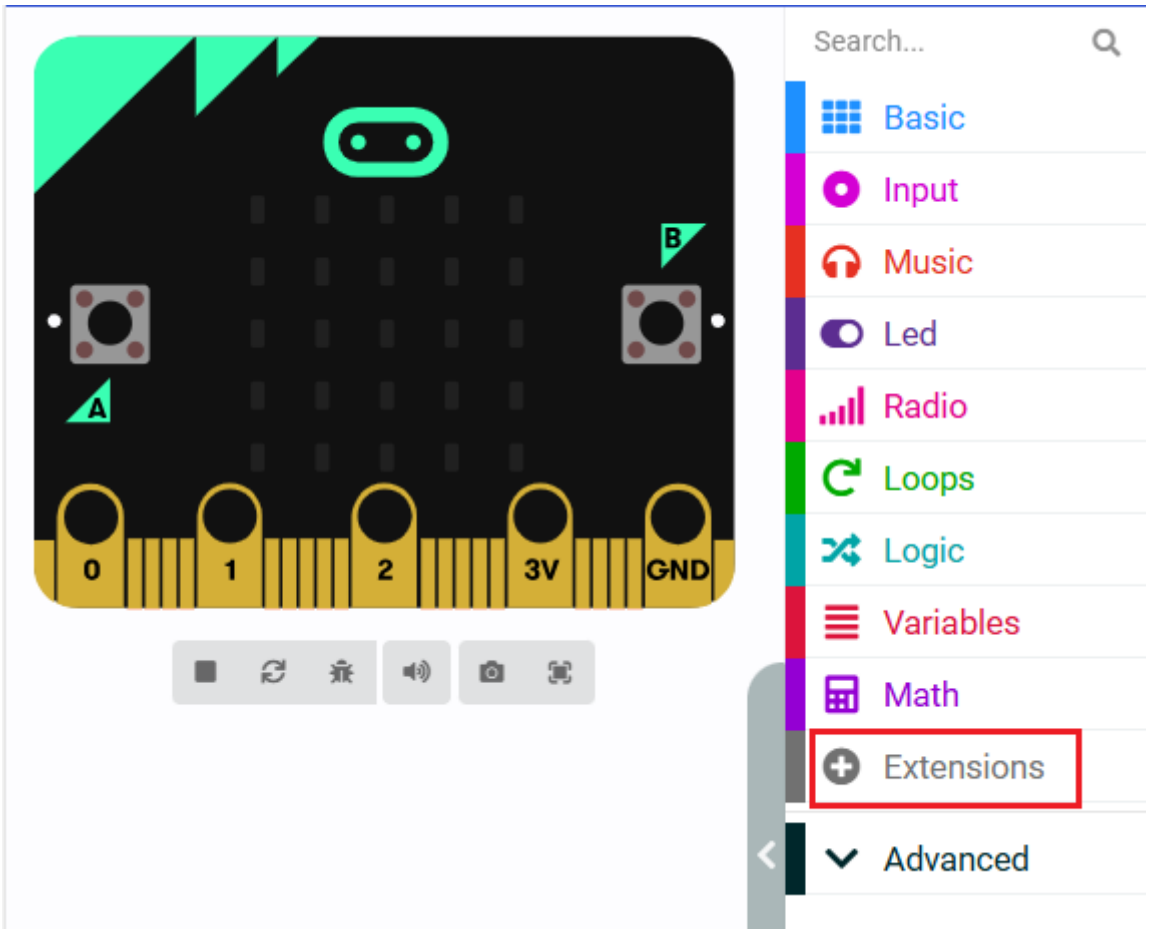
Method 1 Online Programming:

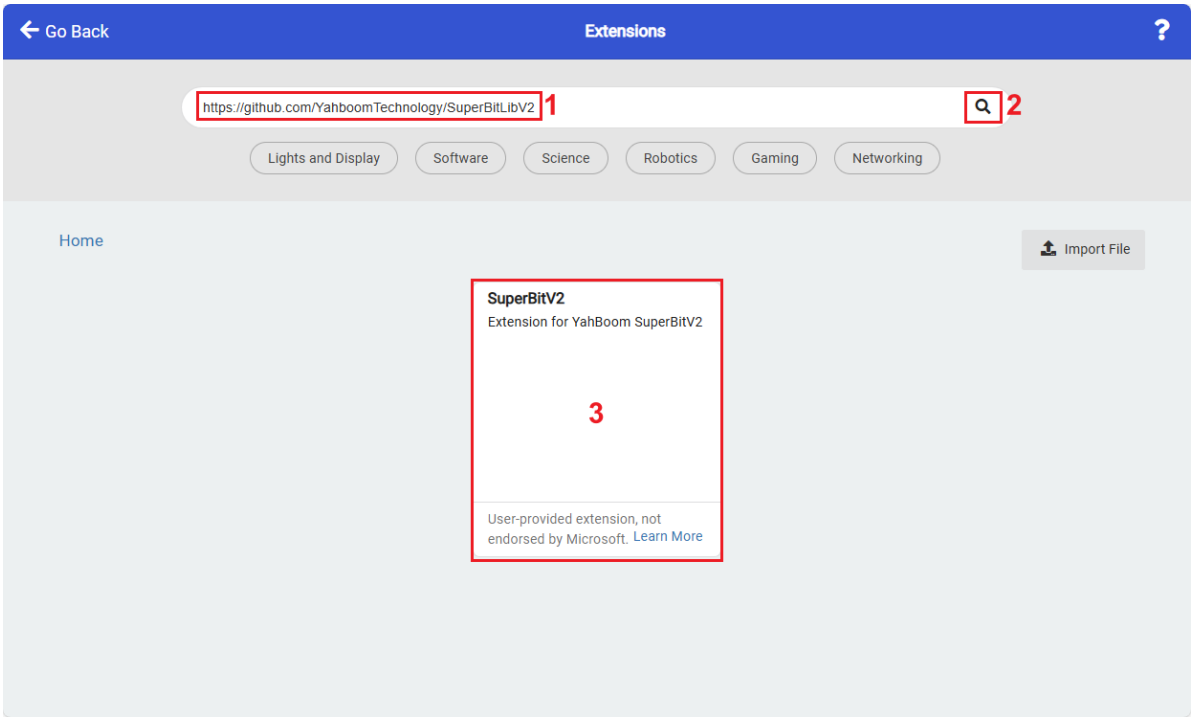
First, connect the micro:bit to the computer via a USB data cable, and the computer will pop up a U disk. Click the URL in the U disk: https://makecode.microbit.org/ to enter the programming interface. Then, add the Yahboom software package **https://github.com/YahboomTechnology/SuperBitLibV2**, and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

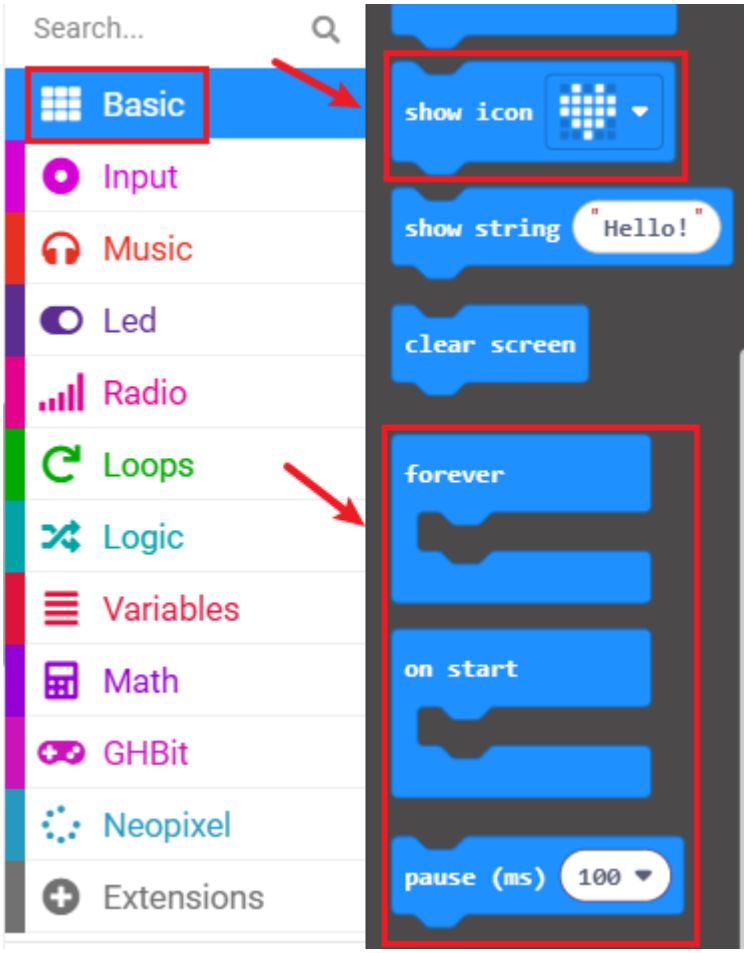
4.1 Add expansion package

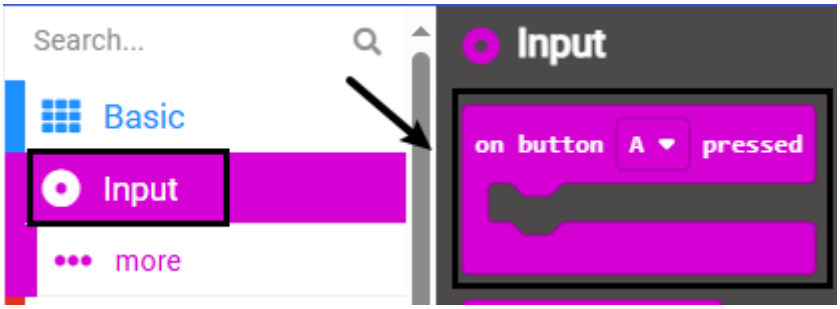


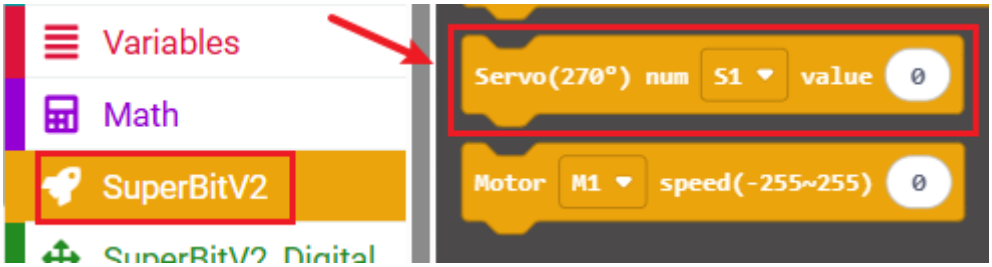


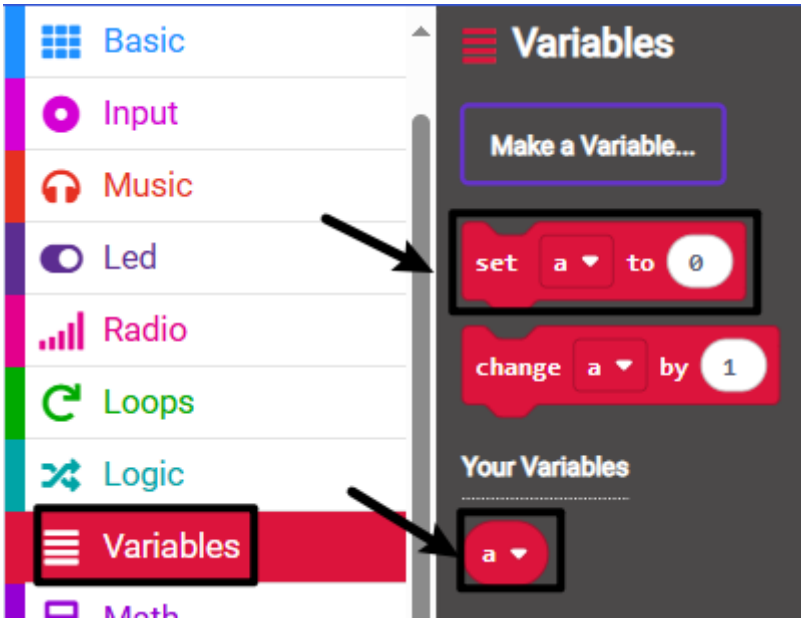
4.2 Building blocks used

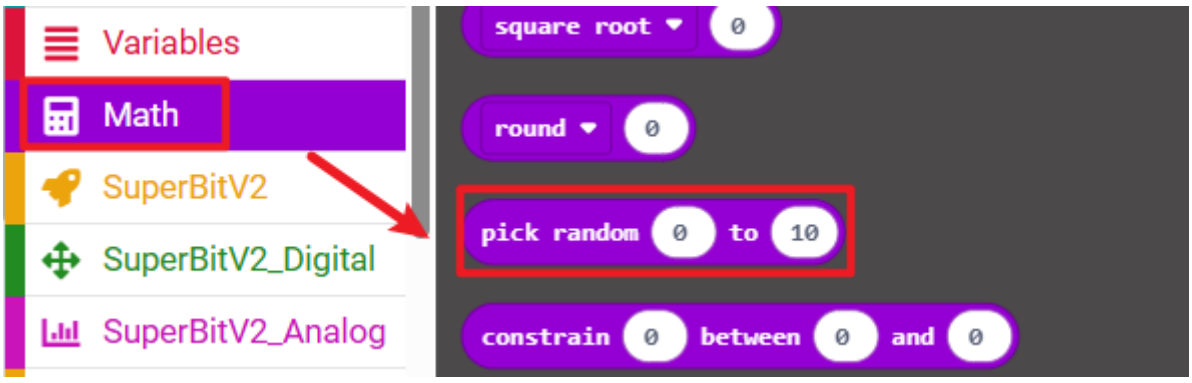
The location of the building blocks required for this programming is shown in the figure below.

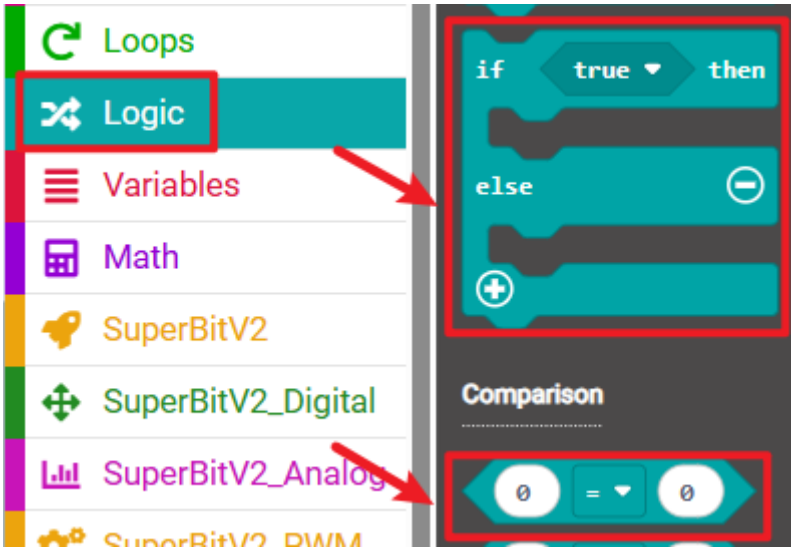



Search...
Basic
Input
more
Input
on button A pressed


Variables
Math
SuperBitV2
Servo(270°) num S1 value 0
Motor M1 speed(-255~255) 0

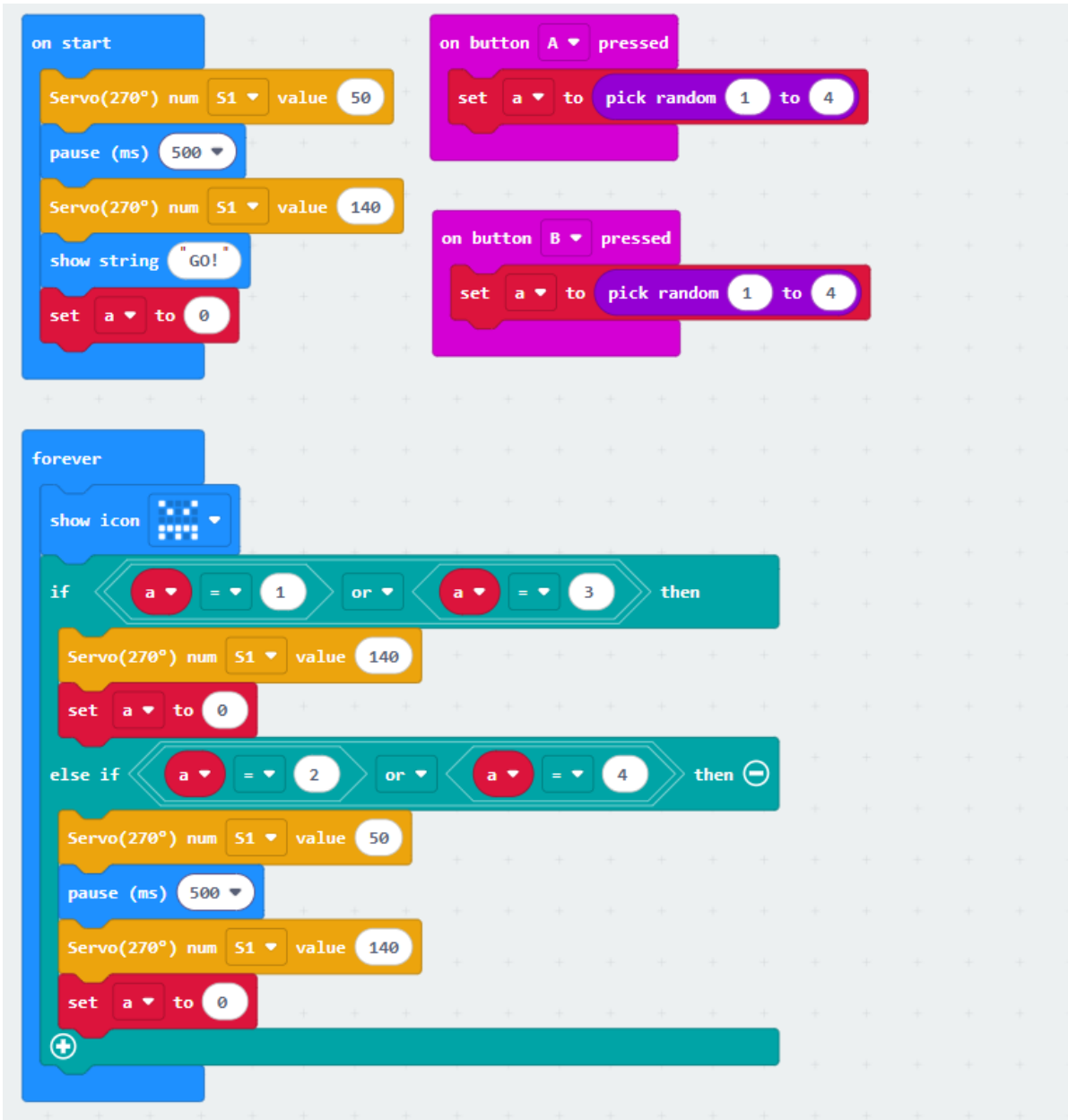

Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Variables
Make a Variable...
set a to 0
change a by 1
Your Variables
a


Variables
Math
SuperBitV2
SuperBitV2_Digital
SuperBitV2_Analog
square root 0
round 0
pick random 0 to 10
constrain 0 between 0 and 0



4.3 Combined blocks

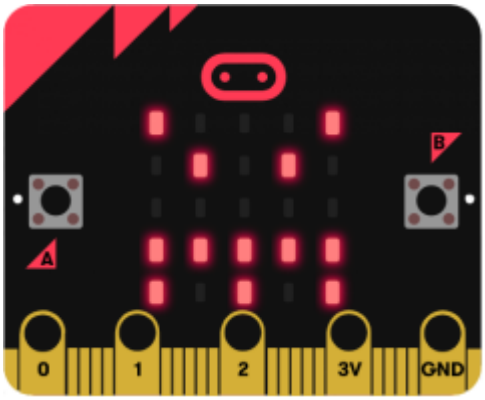
The summary program is shown in the figure below.



You can also directly open the **microbit-Bite-the-hand-crocodile.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, turn on the power switch. The servo will initialize to 50° (Changing Face mask closed), and after 500 milliseconds, the servo will rotate to 140° (Changing Face mask opened), and "GO!" will be displayed on the dot matrix. Then a fierce expression pattern will be displayed on the micro:bit dot matrix, as shown in the figure below.



When we press the A button or the B button, the Changing Face mask will fall off randomly, achieving the game effect of a crocodile biting your hand.

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