Oscillating fan Micro:bit handle control

1.Learning goals

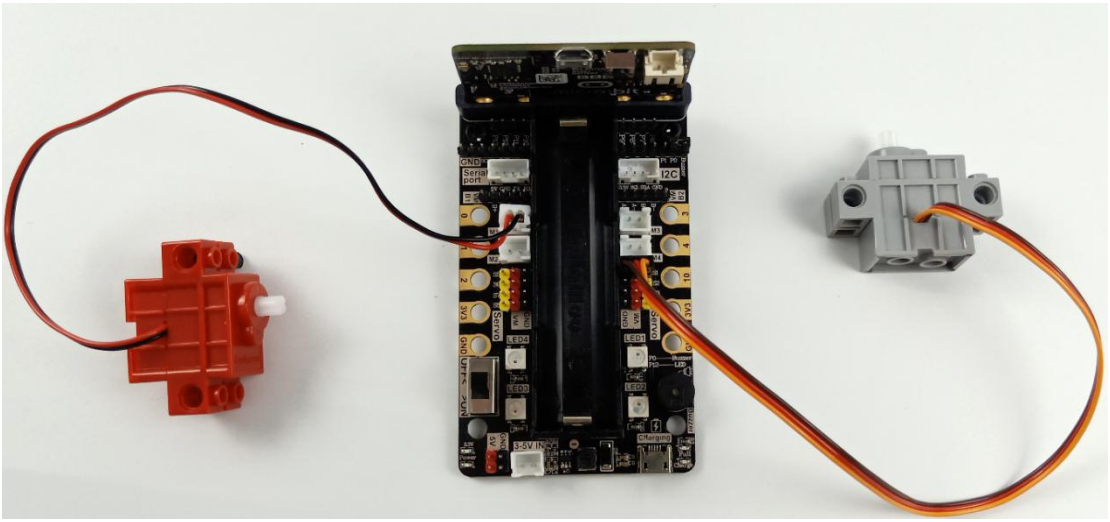
In this course, we mainly learn how to use handle control Oscillating fan.

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]-[Oscillating fan].

3.Wiring of motor and servo

The motor wiring is inserted into the M1 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.



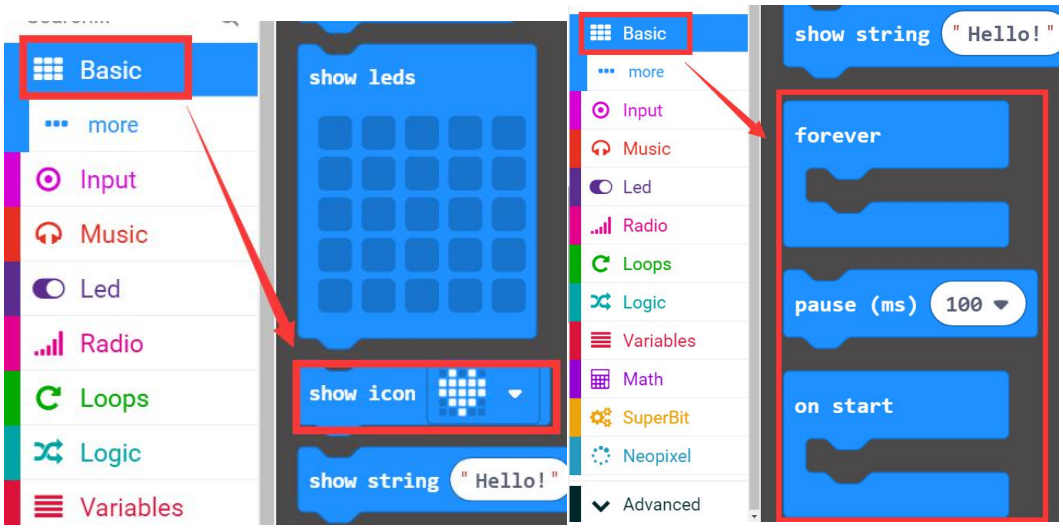
4.Programming method

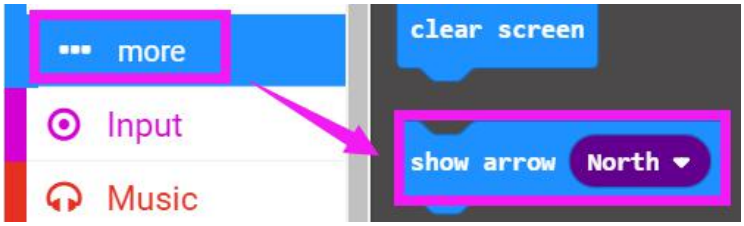
Mode 1 online programming: First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: http://microbit.org/ to enter the programming interface. Add the Yahboom package **https://github.com/lzty634158/SuperBit**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

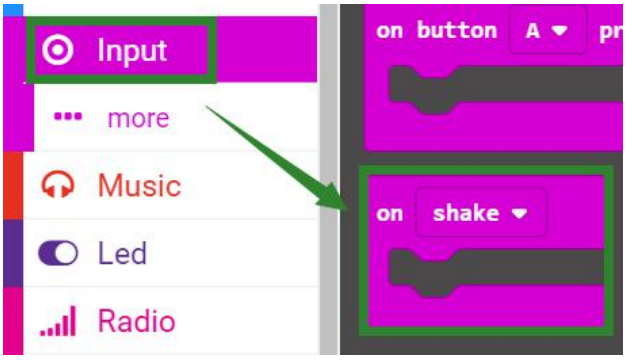
Mode 2 offline programming: We need to open the offline programming software. After the installation is complete, enter the programming interface, click【New Project】, add Yahboom package: **https://github.com/lzty634158/SuperBit** and **https://github.com/lzty634158/GHBit** , you can program.

5.Looking for blocks

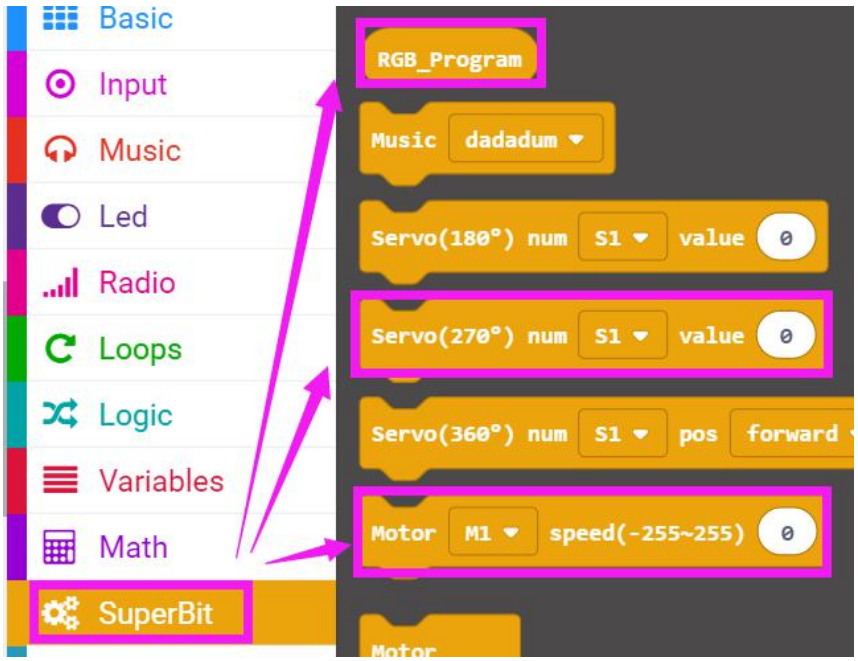
The following is the location of the building blocks required for this programming.

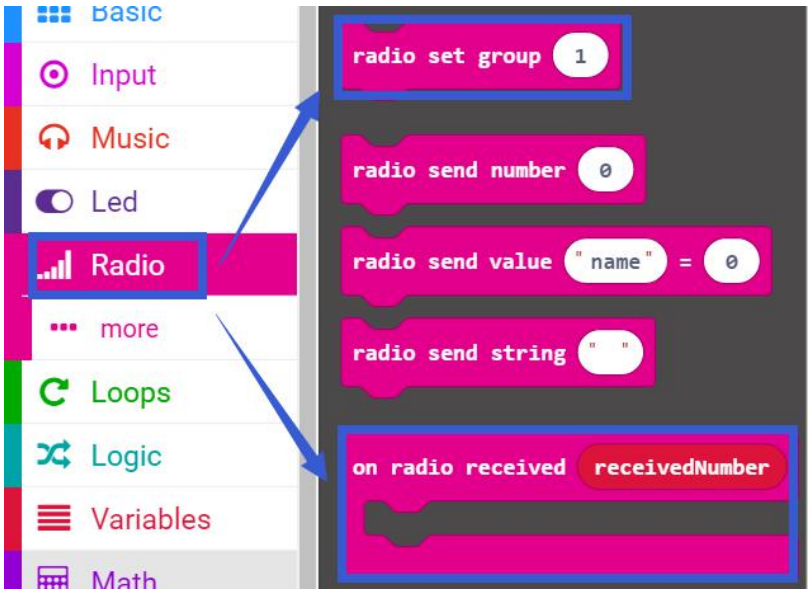

Basic
more
Input
Music
Led
Radio
Loops
Logic
Variables
show leds
show icon
show string
" Hello! "
Basic
more
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBit
Neopixel
Advanced
show string
" Hello! "
forever
pause (ms)
100
on start

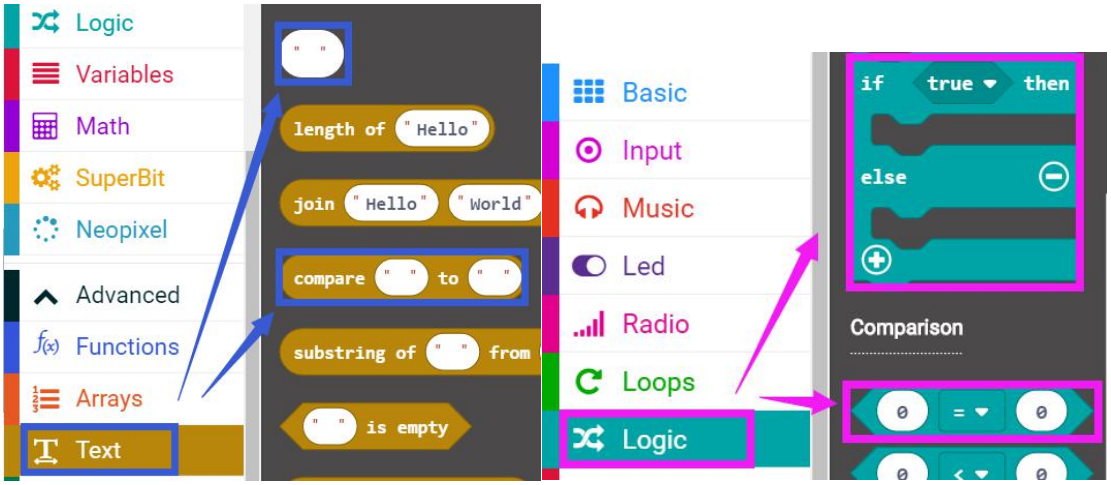

more
Input
Music
clear screen
show arrow
North

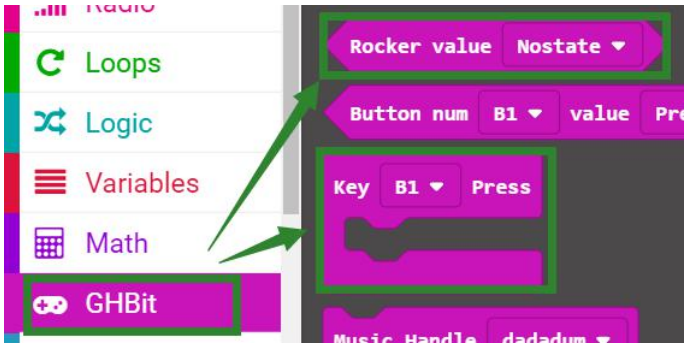

Input
more
Music
Led
Radio
on button
A
on
shake


Radio
Loops
Logic
Variables
set
item
to
0
change
item
by
1


Basic
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
Motor


Basic
Input
Music
Led
Radio
more
Loops
Logic
Variables
Math
radio set group 1
radio send number 0
radio send value "name" = 0
radio send string ""
on radio received receivedNumber


Logic
Variables
Math
SuperBit
Neopixel
Advanced
Functions
Arrays
Text
""
length of "Hello"
join "Hello" "World"
compare "" to ""
substring of "" from
"" is empty
Basic
Input
Music
Led
Radio
Loops
Logic
if true then
else
Comparison
0 = 0



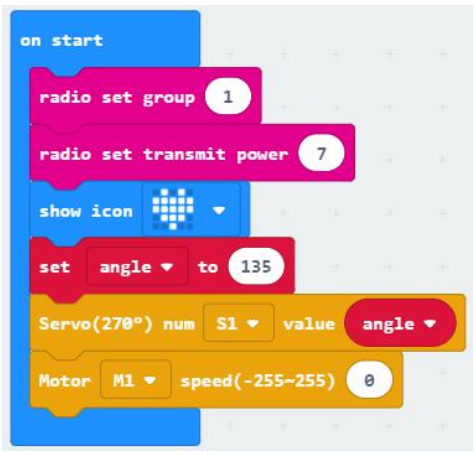
How to create a new variable

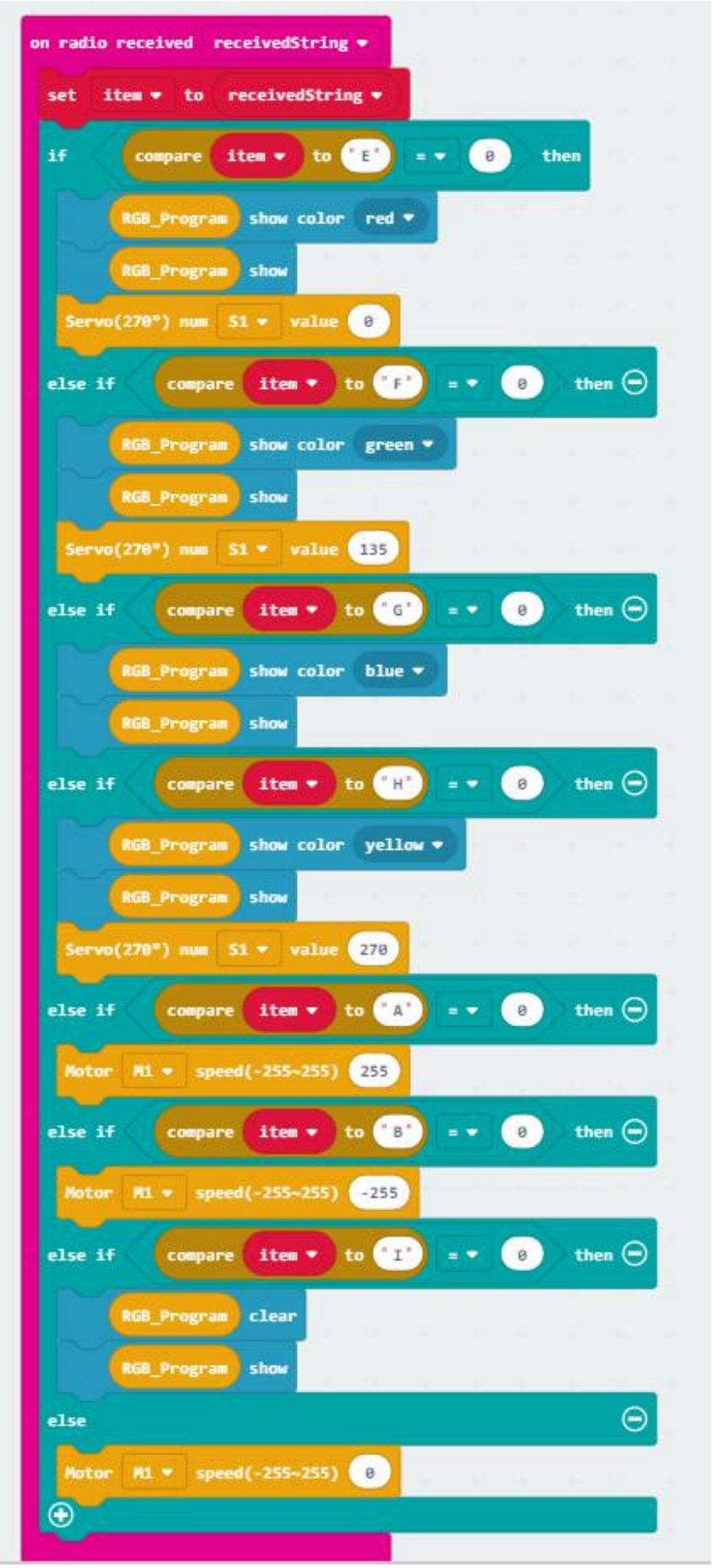
①Find the [Variable] option in the building block column-[Make a Variable]

②Enter the name of variable to complete the new variable.

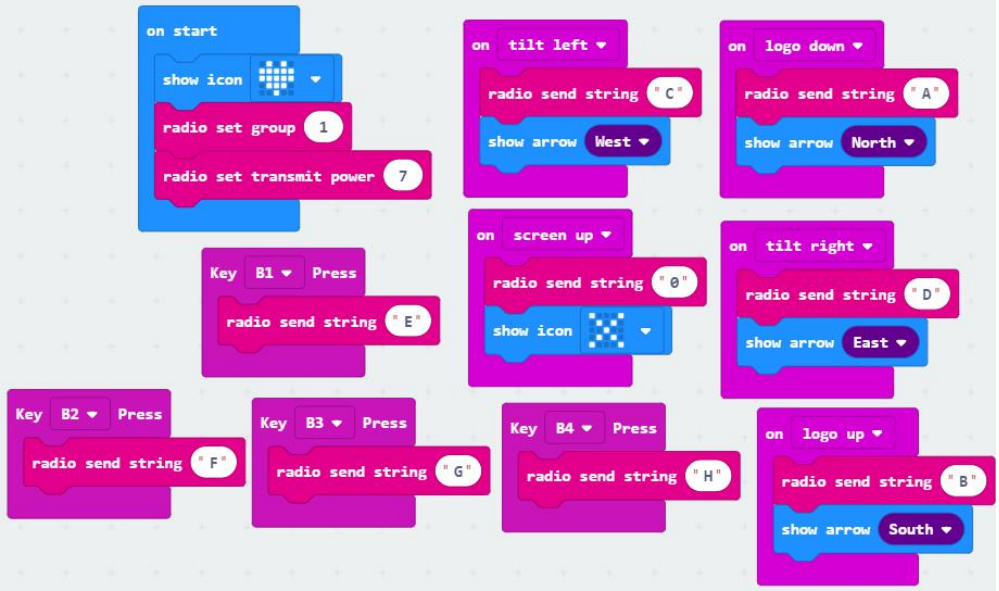
6.Combine block

The Oscillating fan program is shown below.

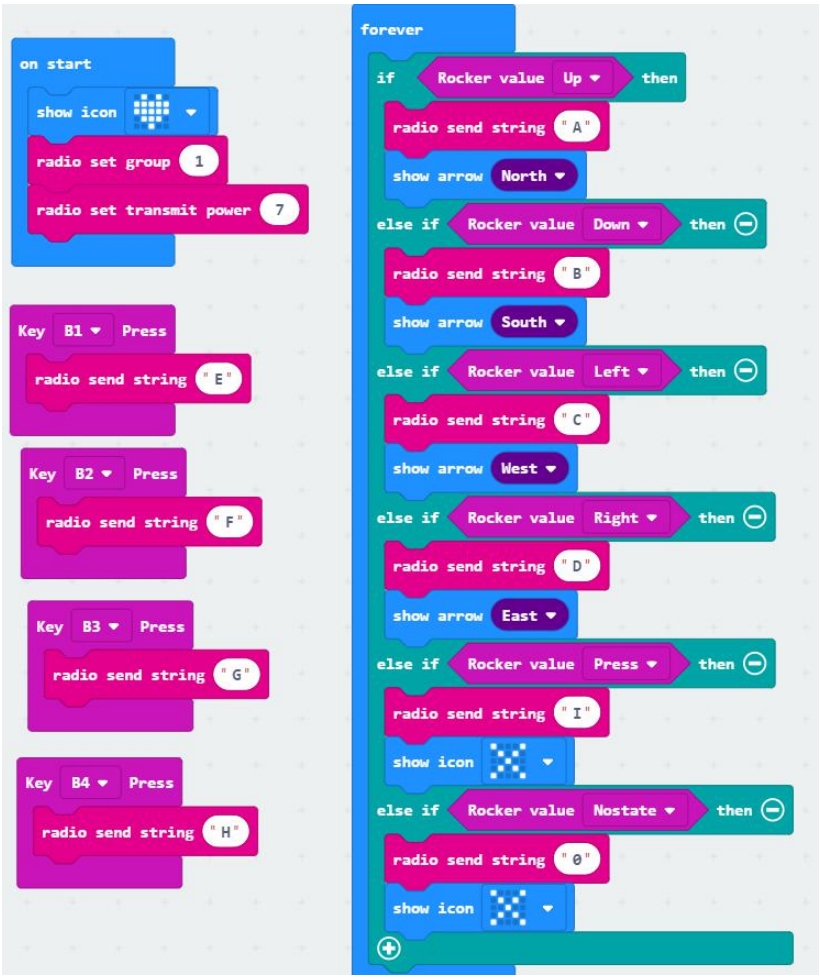



on radio received receivedString
set item to receivedString
if compare item to "E" = 0 then
RGB_Program show color red
RGB_Program show
Servo(270°) num S1 value 0
else if compare item to "F" = 0 then
RGB_Program show color green
RGB_Program show
Servo(270°) num S1 value 135
else if compare item to "G" = 0 then
RGB_Program show color blue
RGB_Program show
else if compare item to "H" = 0 then
RGB_Program show color yellow
RGB_Program show
Servo(270°) num S1 value 270
else if compare item to "A" = 0 then
Motor M1 speed(-255~255) 255
else if compare item to "B" = 0 then
Motor M1 speed(-255~255) -255
else if compare item to "I" = 0 then
RGB_Program clear
RGB_Program show
else
Motor M1 speed(-255~255) 0

Handle gravity control code, as shown below.



Handle rocker control code, as shown below.



7.Experimental phenomena

We need to download the Oscillating fan code into the micro:bit board of the Oscillating fan. Open the power switch of the Oscillating fan, we can see a heart

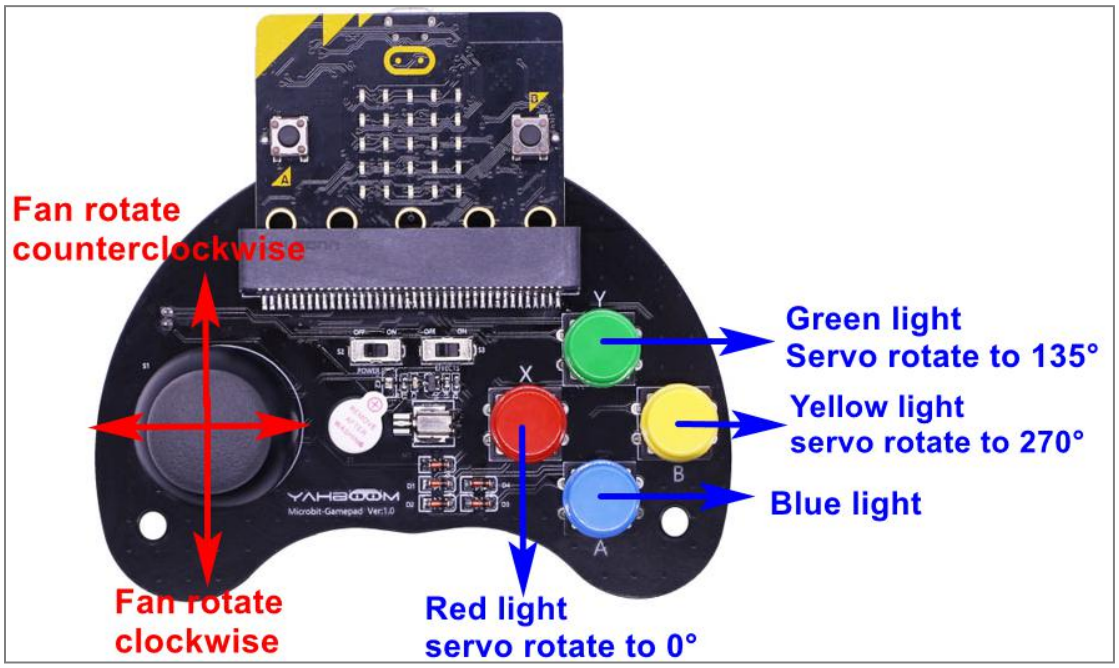
pattern displayed on the micro:bit dot matrix;

We need to download the Handle code into the micro:bit board of the handle.

Open the power switch of the handle, we can see that the micro: bit dot matrix will initially display a heart pattern, and then display an "X" pattern, indicating that the handle is in the default(no data is sent).

They will automatically pairing, then, we can start remote control the Oscillating fan by handle.

The handle functions are shown below.



! Note:

In case of handle rocker control, press the rocker to control the RGB light closed. In case of handle gravity control, this function is not available.