Summer Cooling Artifact

1. Learning Objectives

In this course, we mainly learn how to use MakeCode graphical programming to make the fan shake and display the dynamic picture of the windmill on the micro:bit dot matrix.

2. Building Blocks

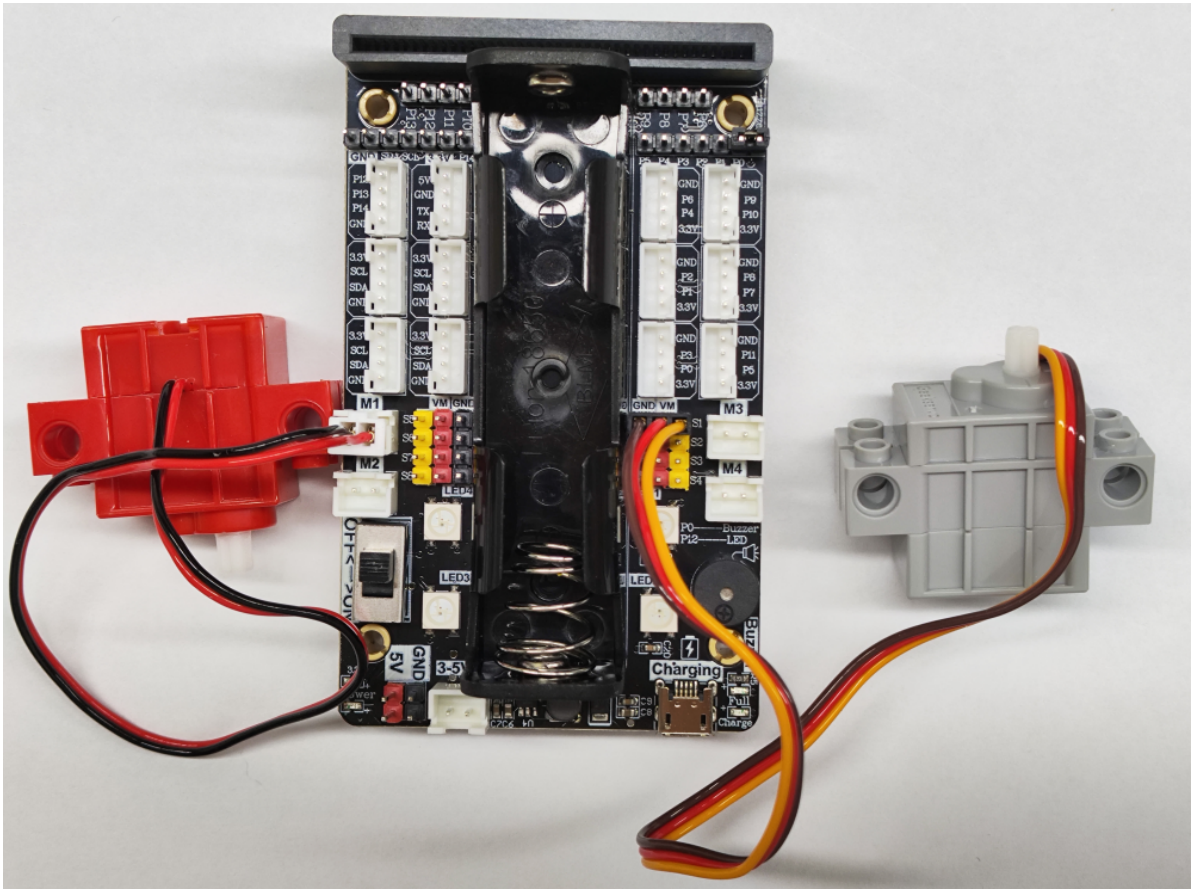
For the building block steps, please refer to the installation drawings of **[Assembly Course]--[Oscillating fan]** in the materials or the building block installation album.

3. Motor Wiring

The building block motor wiring is inserted into the M1 interface of the Super:bit expansion board, and the black wiring is inserted into the side close to the battery.

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

As shown below:



4. Programming

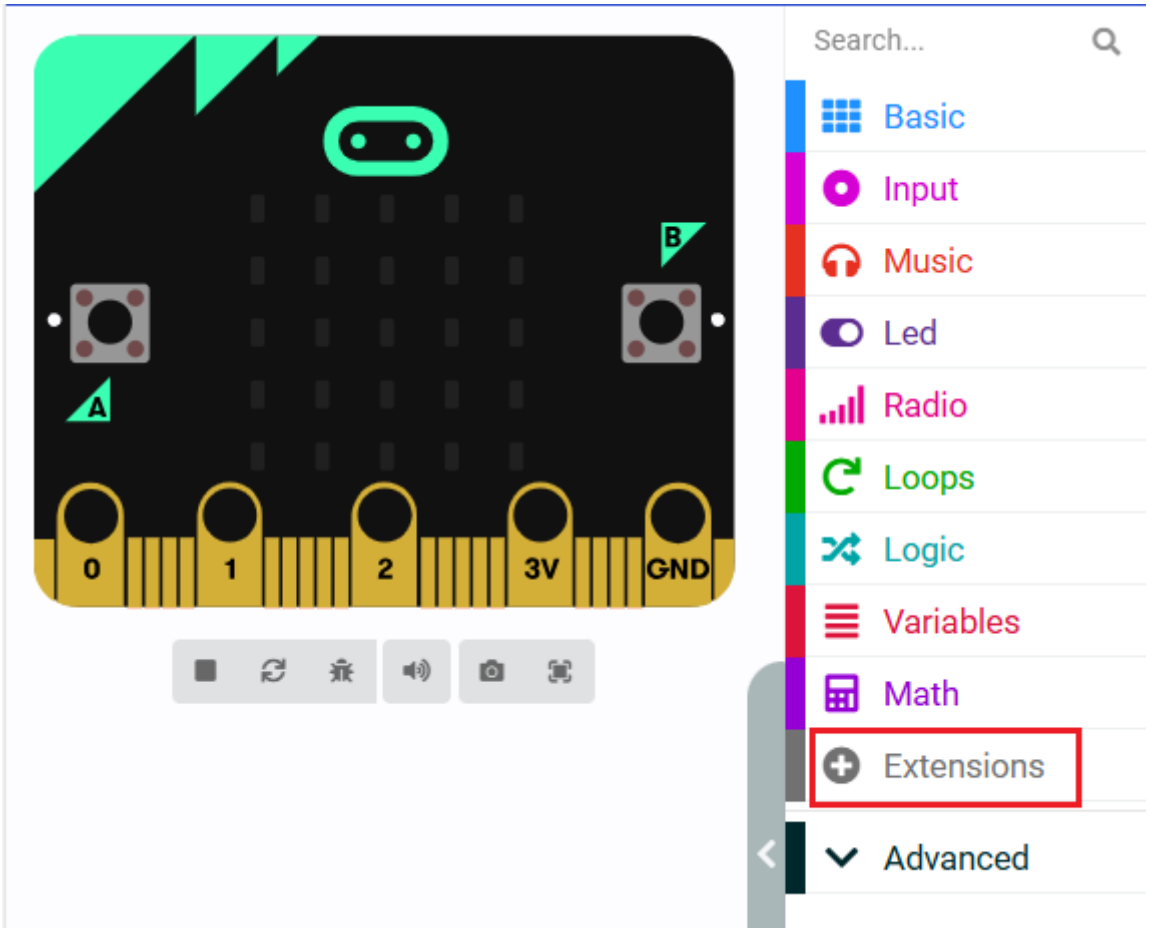
Method 1 Online Programming:

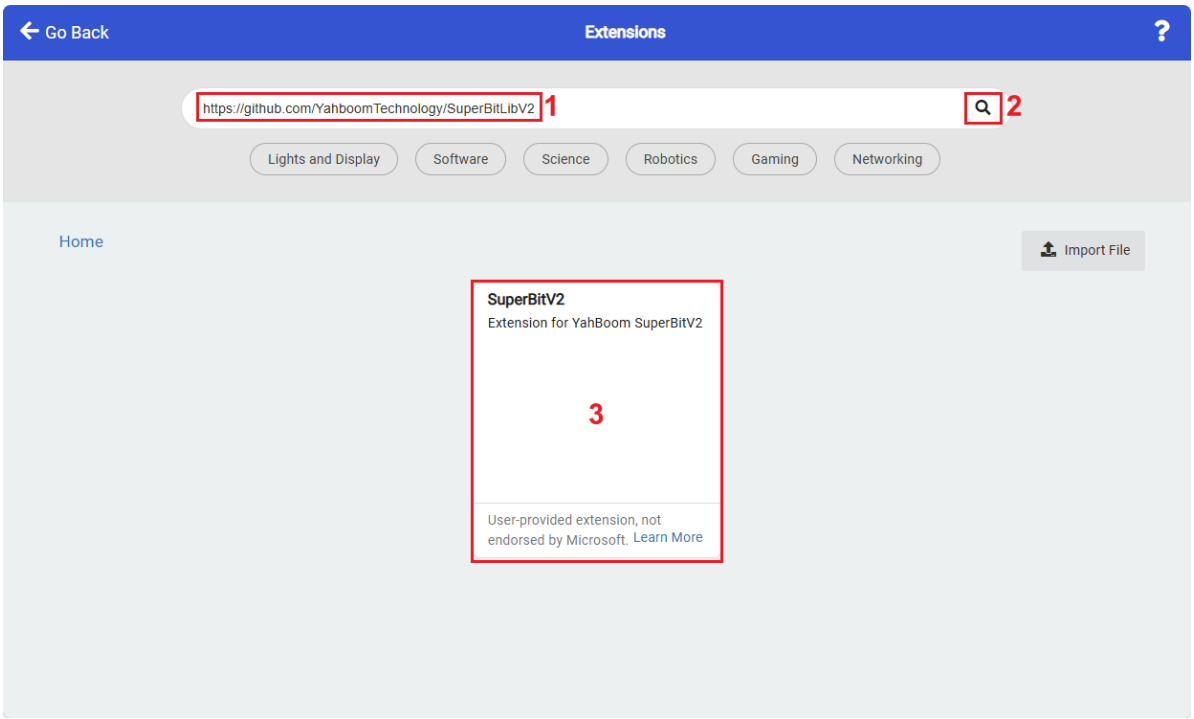
First, connect micro:bit to the computer via a USB data cable. The computer will pop up a U disk. Click the URL in the U disk: https://makecode.microbit.org/ to enter the programming interface. Then, add the Yahboom software package **https://github.com/YahboomTechnology/SuperBitLibV2** to start programming.

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.

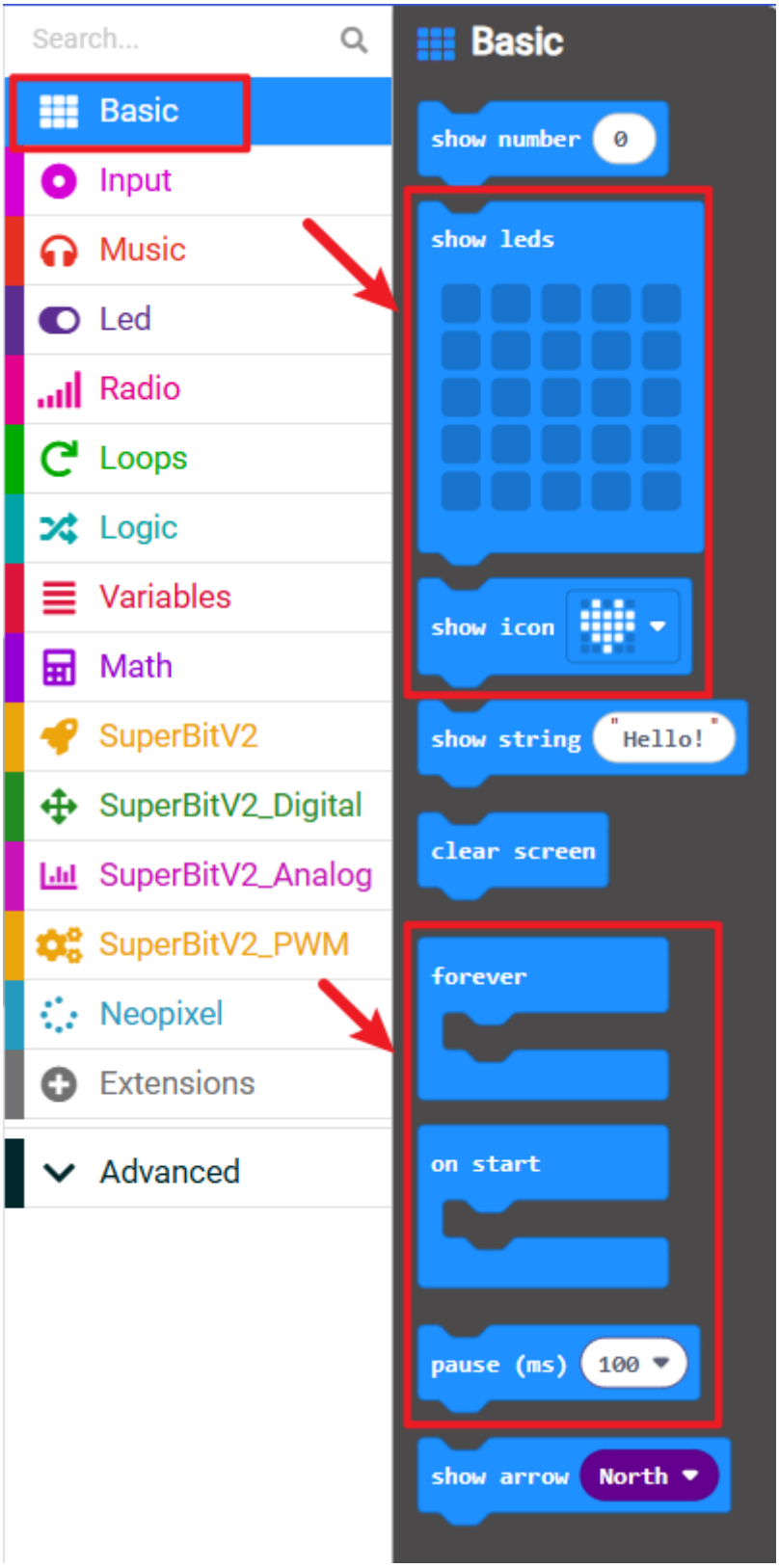
4.1 Adding extension packs





4.2 Building blocks used

The locations of the building blocks required for this programming are shown in the figure below.


Search...
Basic
Input
Music
Led
Radio
Loops
Logic
Variables
Math
SuperBitV2
SuperBitV2_Digital
SuperBitV2_Analog
SuperBitV2_PWM
Neopixel
Extensions
Advanced
Basic
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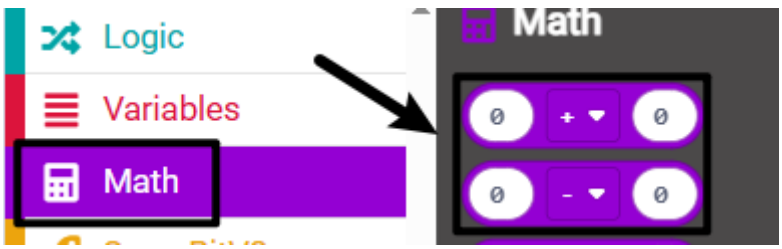
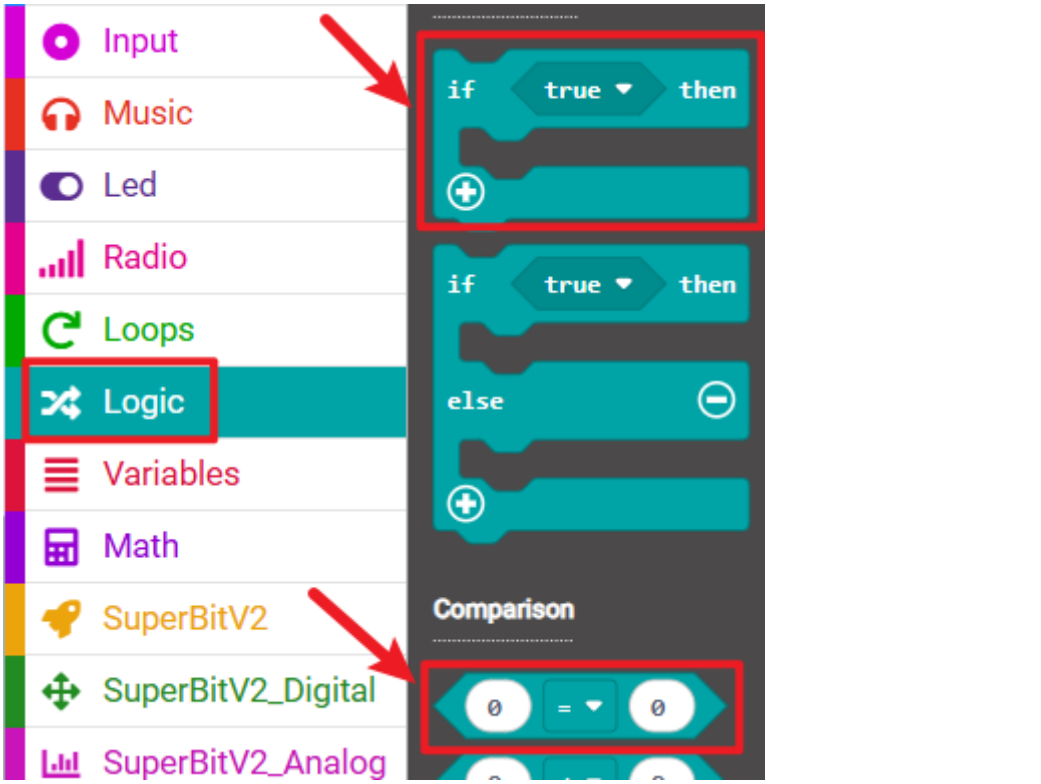
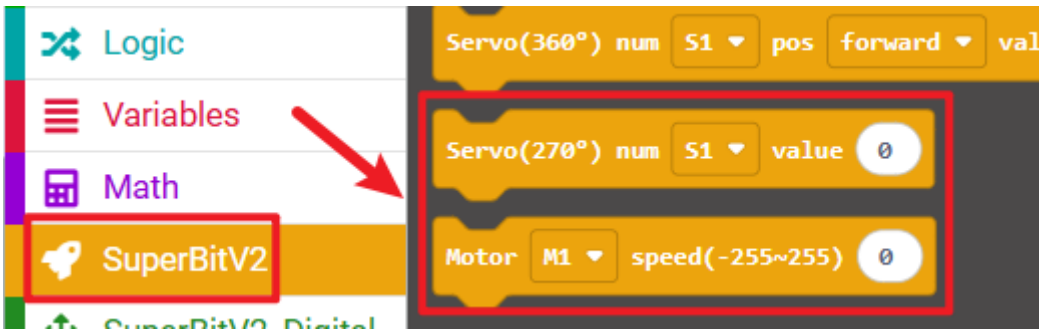
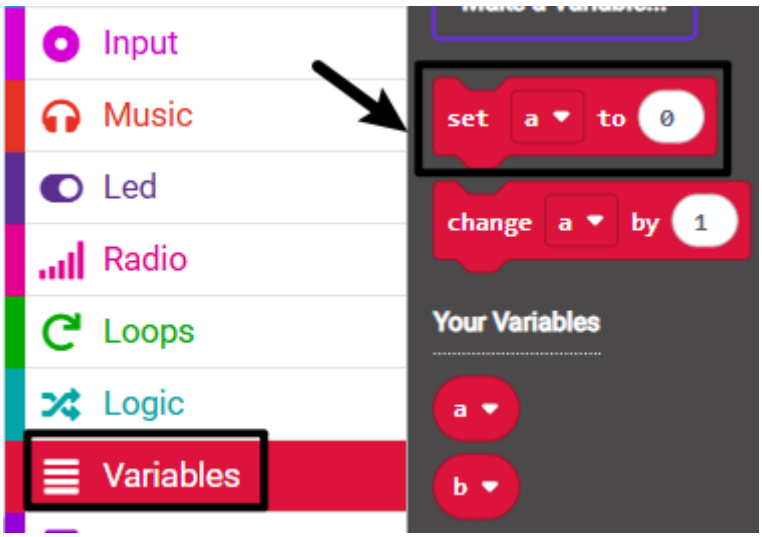
show leds
show icon
show string "Hello!"
clear screen
forever
on start
pause (ms) 100
show arrow North


Logic
Variables
Math
Math
0 + 0
0 - 0

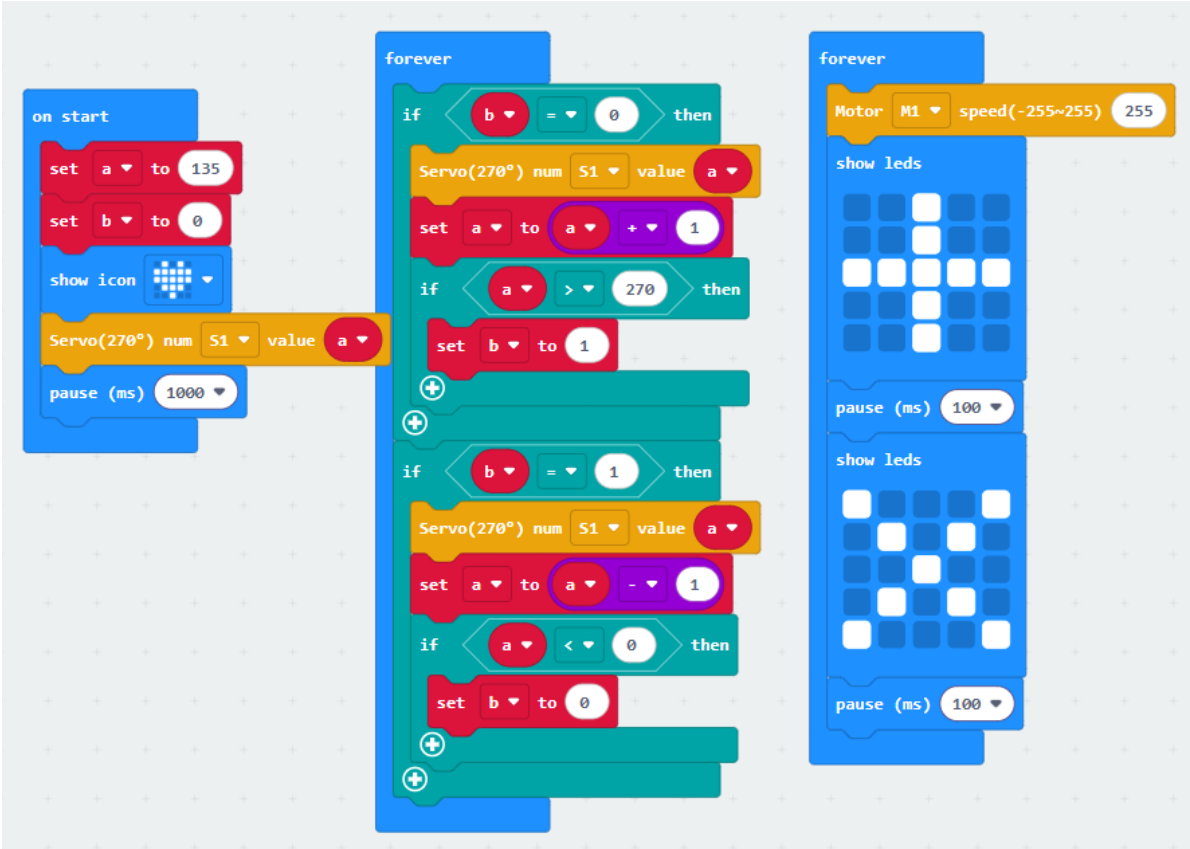






4.3 Combine building blocks

The summary program is shown in the figure below.



You can also directly open the **microbit-Summer-cooling-artifact.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, and a heart pattern will be displayed on the micro:bit dot matrix. Then the Oscillating fan starts to rotate at the maximum speed of 255, shaking from left to right, and keeps circulating in this state. At the same time, we can see that the dynamic windmill rotation pattern will be displayed on the micro:bit dot matrix.

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