

## Soldiers on duty

### 1.Learning goals

In this course, we mainly learn how to use MakeCode graphical programming to realize following function.

Function: When the micro:bit A button is pressed, the dot matrix shows the direction of the door movement (to the left), the buzzer sounds, and the automatic door closes.

When the micro:bit B button is pressed, the dot matrix shows the direction of the door movement (to the right), the buzzer sounds shortly, and the automatic door opens.

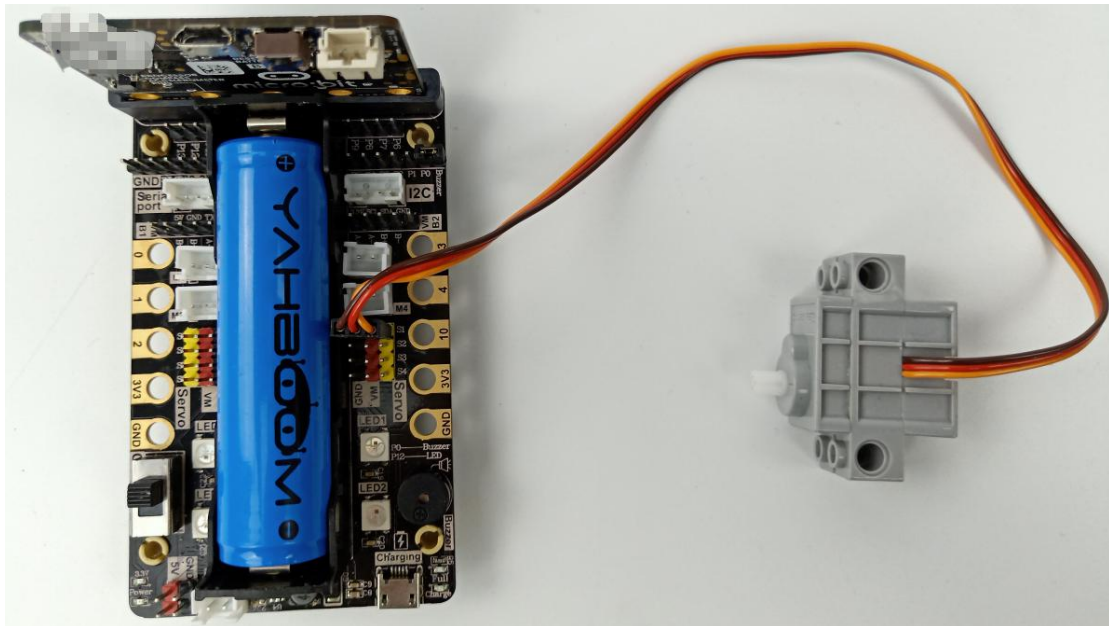
### 2.Building block assembly steps

For the building block construction steps, please refer to the installation manual or building block installation picture of [Assembly course]-[Auto-door].

### 3.Wiring of servo

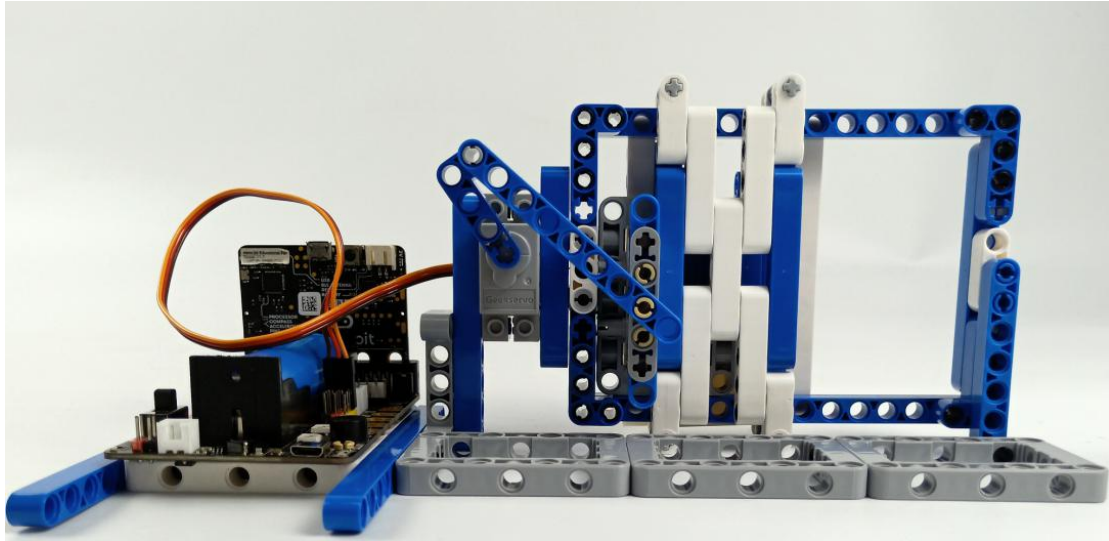
Building block servo insert into the Super: bit expansion board S1 interface, and the orange wiring connect the yellow pin of S1.

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 automatic door is opened. Finally, install the servo. (If you have used programs related to clip robot before, you can skip this step)



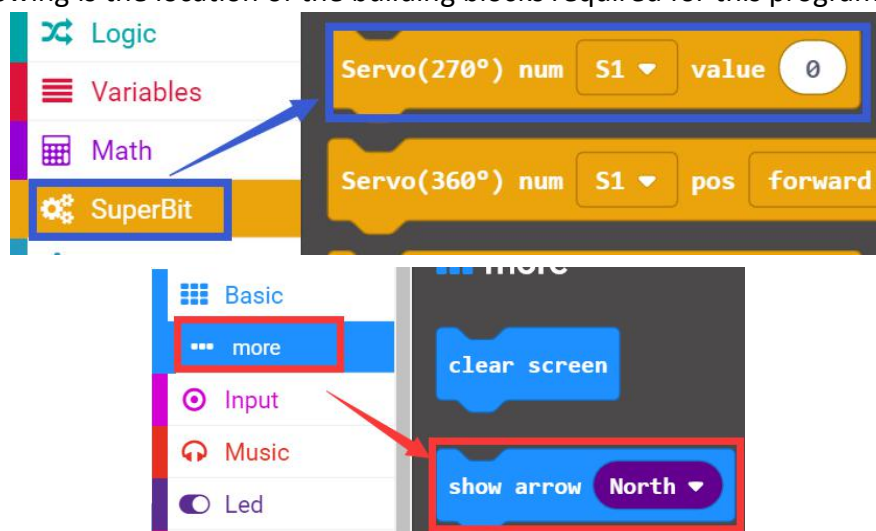
#### 4. Programming method

**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

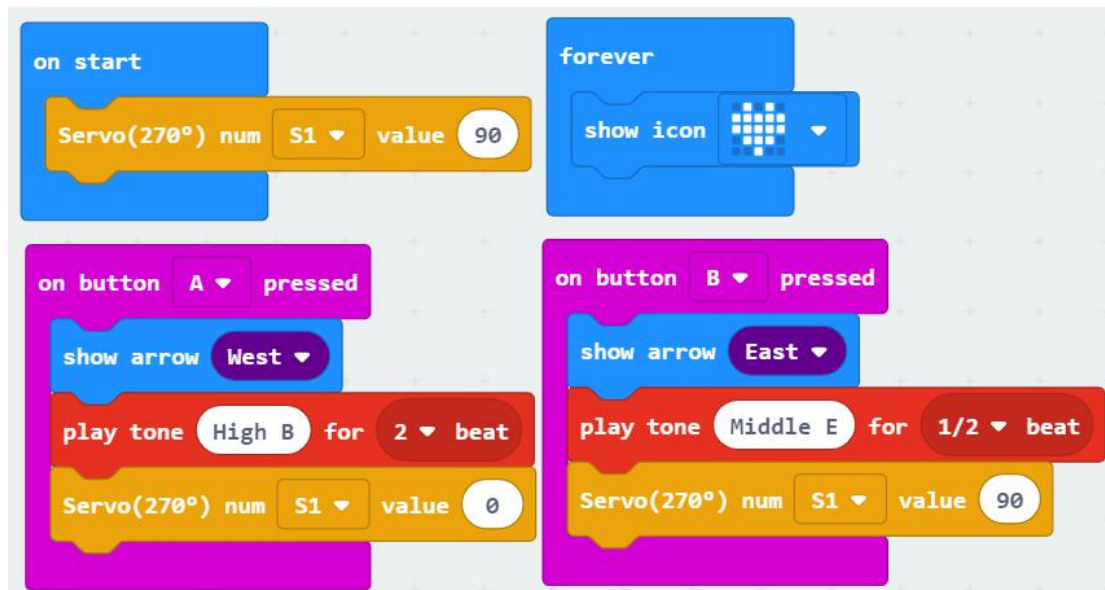
The following is the location of the building blocks required for this programming.





## 6.Combine block

The summary program is shown below.



## 7.Experimental phenomena

After the program is successfully downloaded, the micro: bit dot matrix will show a heart pattern.

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When the micro:bit B button is pressed, the dot matrix shows the direction of the door movement (to the right), the buzzer sounds shortly, and the automatic door opens.