

## Control 180°servo

### 1.Learning goals

In this lesson, we mainly learn how to control 180° block servo by micro:bit and Super:bit expansion board.

#### Code:

```
microbit-superbit_180servo_one.py X
1 from microbit import *
2 import microbit
3 import superbit
4
5 display.show(Image.HEART)
6 superbit.servo180(superbit.S1, 0)
7 microbit.sleep(1000)
8
9 while True:
10     superbit.servo180(superbit.S1, 0)
11     microbit.sleep(1000)
12     superbit.servo180(superbit.S1, 90)
13     microbit.sleep(1000)
14     superbit.servo180(superbit.S1, 180)
15     microbit.sleep(1000)
16     superbit.servo180(superbit.S1, 90)
17     microbit.sleep(1000)
18
```

`from microbit import *` It is to import everything from the micro:bit library, and every program of micro:bit must import this library.

`import microbit, import superbit` Import micro:bit library, import super:bit library

`display.show(Image.HAPPY)`: display heart.

`superbit.servo180(superbit.S1, 0)`: Rotate the 270 ° servo on S1 port to 0 °

`microbit.sleep(1000)`: delay 1000ms

### Programming and downloading:

1.You should open the Mu software, and enter the code in the edit window, , as shown below.

**Note! All English and symbols should be entered in English, and the last**

line must be a space.

The screenshot shows the Yahboom Microbit Editor interface. At the top, there's a toolbar with icons for Mode, New, Load, Save, Flash, Files, REPL, Plotter, Zoom-in, and Zoom-out. Below the toolbar is a code editor window titled "microbit-superbit\_180servo\_one.py". The code is as follows:

```

1 from microbit import *
2 import microbit
3 import superbit
4
5 display.show(Image.HEART)
6 superbit.servo180(superbit.S1, 0)
7 microbit.sleep(1000)
8
9 while True:
10     superbit.servo180(superbit.S1, 0)
11     microbit.sleep(1000)
12     superbit.servo180(superbit.S1, 90)
13     microbit.sleep(1000)
14     superbit.servo180(superbit.S1, 180)
15     microbit.sleep(1000)
16     superbit.servo180(superbit.S1, 90)
17     microbit.sleep(1000)
18

```

2. You can click the “Check” button to check if our code has an error. If a line appears with a cursor or an underscore, the program indicating this line is wrong.

The screenshot shows the Yahboom Microbit Editor interface. The toolbar includes a "Check" button, which is highlighted with a red box. Below the toolbar is a code editor window titled "microbit-superbit\_270servo\_one.py". The code is identical to the previous one:

```

1 from microbit import *
2 import microbit
3 import superbit
4
5 display.show(Image.HEART)
6 superbit.servo270(superbit.S1, 0)
7 microbit.sleep(1000)
8
9 while True:
10     superbit.servo270(superbit.S1, 0)
11     microbit.sleep(1000)
12     superbit.servo270(superbit.S1, 90)
13     microbit.sleep(1000)

```

At the bottom of the code editor, there is a red-bordered box containing the text "Hurrah! Checker turned up no problems."

3. Click the 'REPL' button to check whether the super:bit library has been downloaded. If not, please refer to the [preparation before class] ---> [2.How to import Yahboom superbit library] import super:bit library tutorial.

The screenshot shows the Yahboom micro:bit software interface. At the top, there is a toolbar with various icons: Mode, New, Load, Save, Flash, Files, REPL (which is highlighted with a red box), Plotter, Zoom-in, Zoom-out, and Theme. Below the toolbar, a code editor window displays the following Python script:

```

1 from microbit import *
2 import microbit
3 import superbit
4
5 display.show(Image.HEART)
6 superbit.servo270(superbit.S1, 0)
7 microbit.sleep(1000)

```

Below the code editor is a BBC micro:bit REPL window containing the following text:

MicroPython for Super:bit V1.1 modified by Yahboom Team  
Type "help()" for more information.  
>>>  
>>> |

4. After writing the code, please click the 'Flash' button to download the program to the micro:bit board.

The screenshot shows the Yahboom micro:bit software interface. The toolbar at the top has the 'Flash' icon highlighted with a red box. Below the toolbar, a code editor window displays the same Python script as the previous screenshot:

```

1 from microbit import *
2 import microbit
3 import superbit
4
5 display.show(Image.HEART)
6 superbit.servo270(superbit.S1, 0)
7 microbit.sleep(1000)
8
9 while True:
10     superbit.servo270(superbit.S1, 0)
11     microbit.sleep(1000)
12     superbit.servo270(superbit.S1, 90)
13     microbit.sleep(1000)

```

If the program is wrong or the experimental phenomenon is wrong after downloading, please confirm whether you have downloaded the superbit library hex file we provided to the micro:bit board.

For the specific method of adding library files, please refer to 【1.Preparation before class】---【How to import Yahboom superbit library】

6. After downloading the program, the heart pattern is displayed on the micro:bit dot matrix.  $180^\circ$  Servo will rotate to  $0^\circ \rightarrow 90^\circ \rightarrow 180^\circ$ .



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