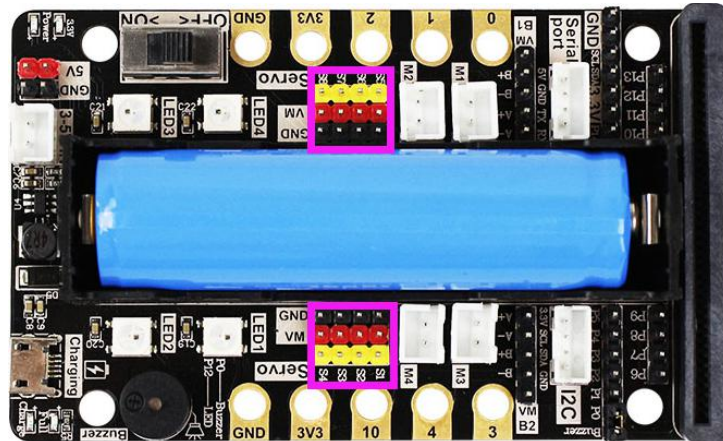


Drive 270° building block servo

1.Learning goals

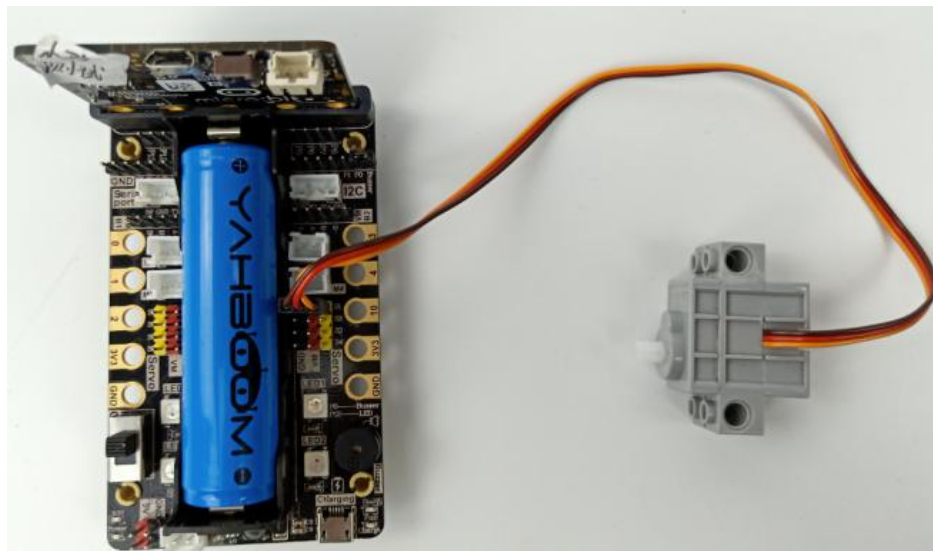
In this course, we mainly learn how to drive building block servo connected to the super:bit expansion board through Python programming.

Servo interface is located on the expansion board as shown in the figure below.



2.Wiring of Servo

The building block servo wiring need to be inserted into the Super:bit expansion board S1 interface, and the orange wiring is inserted into the yellow pin of S1, as shown below.



3.Code and analysis

The program for this course, please view .py file.

```
1 from microbit import *
2 import microbit
3 import superbitt
```

First, we need to import the library needed for this lesson from micro:bit, superbite library is dedicated to super:bit expansion board;

```
5 display.show(Image.HEART)
6 superbite.servo270(superbite.S1, 0)
7 microbit.sleep(1000)
```

display.show(Image.HEART): 在 microbit 点阵上显示爱心图案; Display heart pattern on micro:bit matrix.

superbite.servo270(superbite.S1, 0): Initialize the servo to 0°;

microbit.sleep(1000): delay 1s.

```
9 while True:
10     superbite.servo270(superbite.S1, 0)
11     microbit.sleep(1000)
12     superbite.servo270(superbite.S1, 90)
13     microbit.sleep(1000)
14     superbite.servo270(superbite.S1, 180)
15     microbit.sleep(1000)
16     superbite.servo270(superbite.S1, 270)
17     microbit.sleep(1000)
18     superbite.servo270(superbite.S1, 180)
19     microbit.sleep(1000)
20     superbite.servo270(superbite.S1, 90)
21     microbit.sleep(1000)
```

In an infinite loop, the servo is controlled to rotate to different angles.

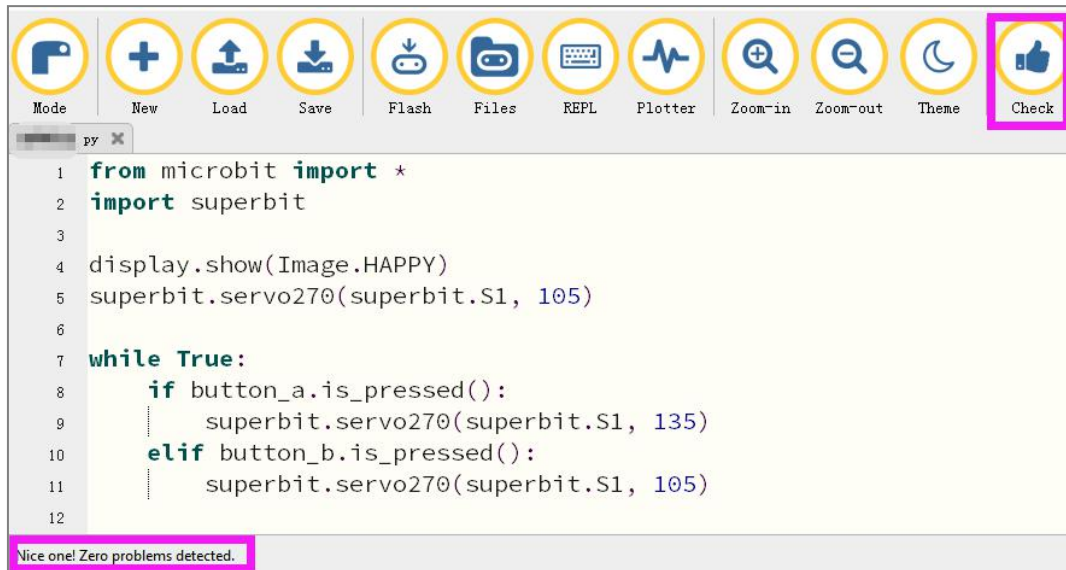
4. Writing and download code

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, use the Tab key (tab key) to indent and the last line must be a space.

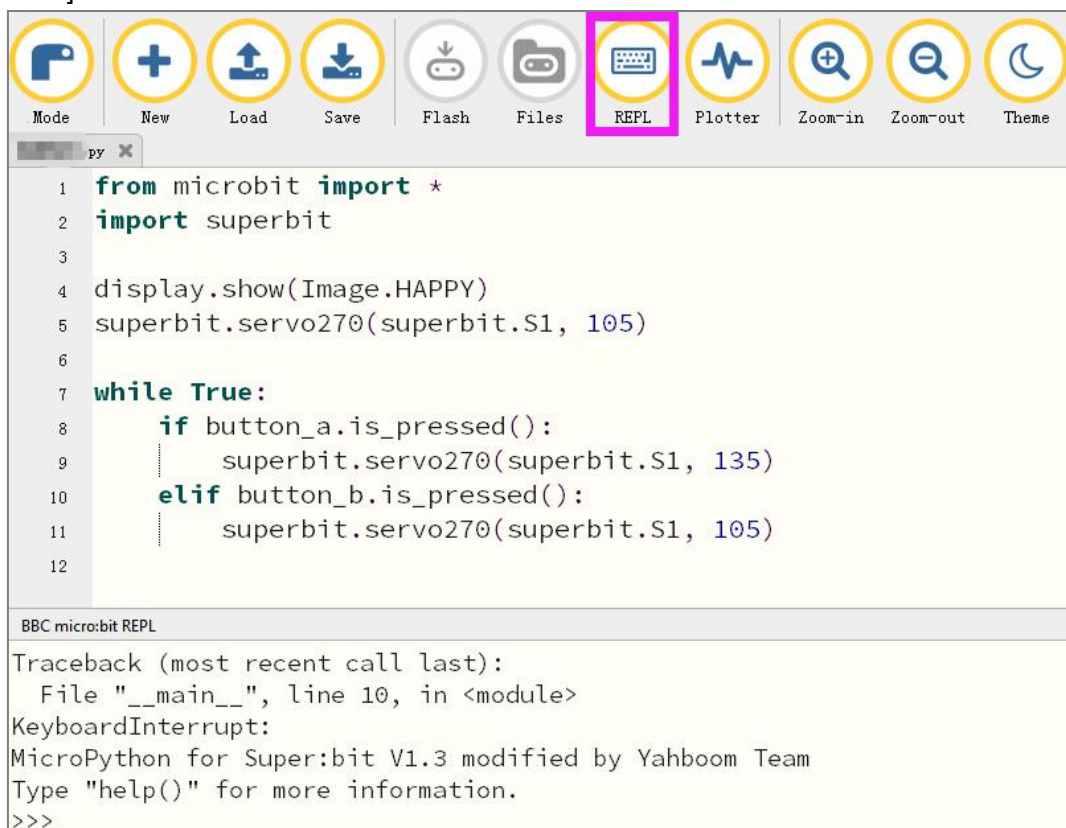
2. You can click the "Check" button to check if our code has an error.

If a cursor or underline appears on a line, it indicates a syntax error, please check and modify. If there is no error in the program, the bottom left of the interface will prompt that there is no problem in detection.

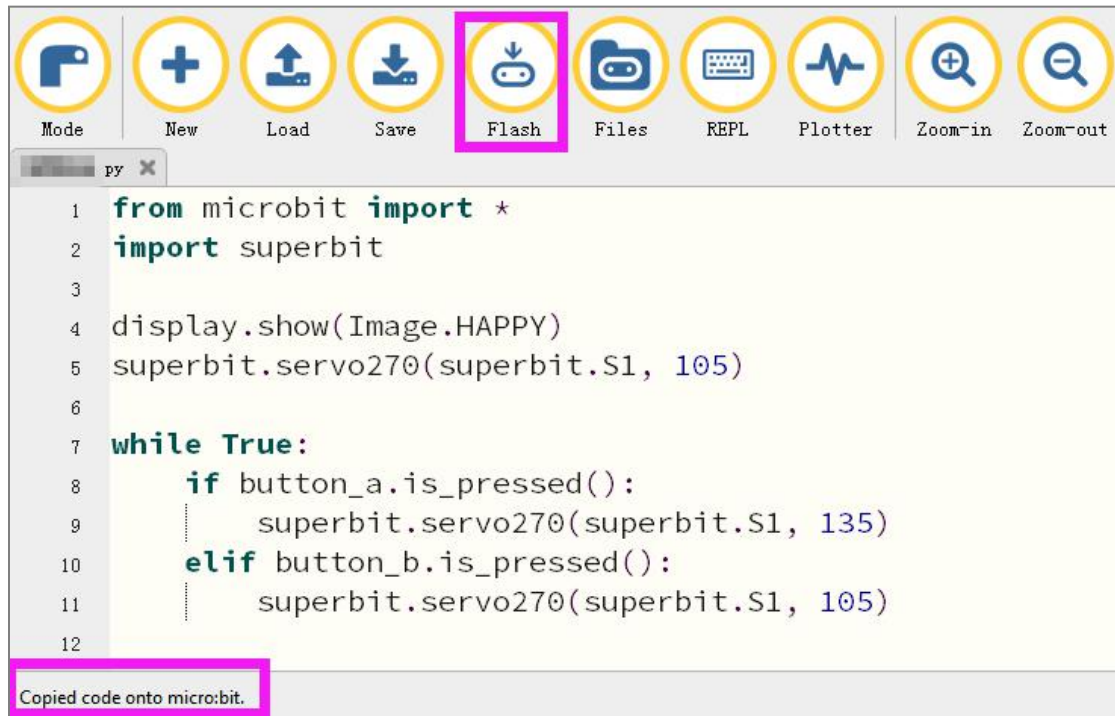


3. Click the 'REPL' button to check whether the Superbit library has been downloaded.

If not, please refer to [Preparation before class] --> [2.4 Python Programming Guide] .



4. After the program is written, use a micro USB cable to connect the computer and the micro:bit board. Please click the 'Flash' button to download the program to the micro:bit motherboard (You need to click the 'REPL' button again to close the function of importing library files before you download the program).



5. If the download failed, please confirm whether the micro:bit is connected to the computer through the micro USB data cable, and confirm whether the Super:bit Python library has been imported.

5.Experimental phenomena

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

The servo is initialized to 0 °, then, we can see that the servo starts to rotate, 0 °-> 90 °-> 180 °-> 270 °-> 180 °-> 90 °-> 0 °, the time interval is 1 second.

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