

Spider motion

Learning goals:

In this lesson, we mainly learn how to control spider motion with different direction by micro:bit and super:bit expansion board.

Code:

! Note:

Due to the problem of the building block structure, if you want the spider to move forward, the direction of the building block motor needs to be set backward.

```
1 from microbit import *
2 import superbit
3
4 display.show(Image.HEART)
5
6 while True:
7     superbit.motor_control_dual(superbit.M1, superbit.M3, -255, -255, 0)
8     sleep(1000)
9
10    superbit.motor_control_dual(superbit.M1, superbit.M3, 255, 255, 0)
11    sleep(1000)
12
13    superbit.motor_control_dual(superbit.M1, superbit.M3, 255, -255, 0)
14    sleep(1000)
15
16    superbit.motor_control_dual(superbit.M1, superbit.M3, -255, 255, 0)
17    sleep(1000)
18
```

Import the microbit library and the superbit library;

`display.show(Image.HAPPY)`: Micro:bit display “smile” faces;

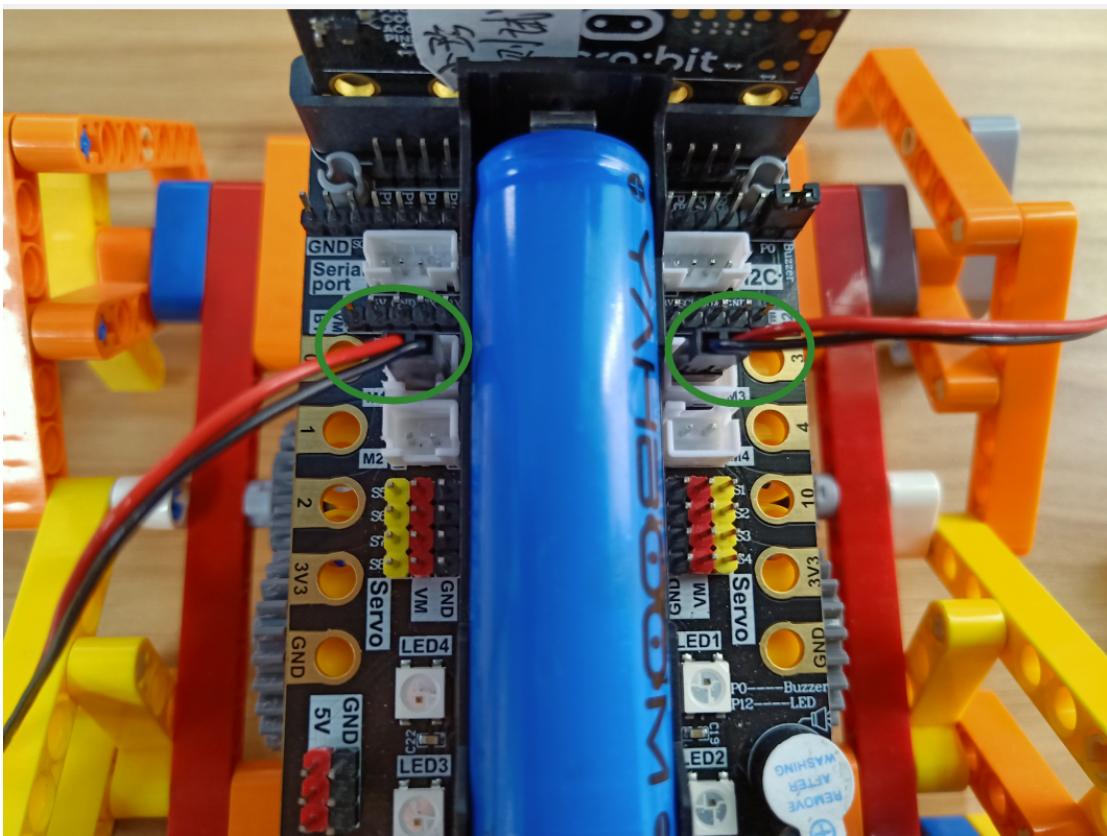
`superbit.motor_control(superbit.M1, 255, 0)`: M1 is the interface on the super:bit board, speed is 255;

`microbit.sleep (500)`: delay 500 milliseconds.

About wiring:

We need to connect two building block motors to the M1 and M3 interfaces of the Super:bit expansion board.

The black wiring of the motor is near the battery side. As shown below.



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.

```

Spider advance.py
1 from microbit import *
2 import superbit
3
4 display.show(Image.HEART)
5
6 while True:
7     superbit.motor_control(superbit.M1, -255, 0)
8     superbit.motor_control(superbit.M3, -255, 0)
9
10
11

```

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.

Mu 1.0.3 - Spider advance.py

```

1 from microbit import *
2 import superbit
3
4 display.show(Image.HEART)
5
6
7 while True:
8     superbit.motor_control(superbit.M1, -255, 0)
9     superbit.motor_control(superbit.M3, -255, 0)
10
11

```

Well done! No problems here.

3.Click the 'REPL' button to check whether the super:bit library has been downloaded. If not, please refer to the [1.preparation before class] ---> [2.How to import Yahboom superbit library] import super:bit library tutorial.

```

1 from microbit import *
2 import superbit
3
4 display.show(Image.HEART)
5
6
7 while True:
8     superbit.motor_control(superbit.M1, -255, 0)
9     superbit.motor_control(superbit.M3, -255, 0)
10
11

```

BBC micro:bit REPL

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 software interface. At the top, there is a toolbar with several icons: Mode, New, Load, Save, Flash (which is highlighted with a red box), Files, REPL, Plotter, Zoom-in, and Zoom-out. Below the toolbar, a file tab labeled "Spider advance.py" is open, showing the following Python code:

```
1 from microbit import *
2 import superbit
3
4 display.show(Image.HEART)
5
6
7 while True:
8     superbit.motor_control(superbit.M1, -255, 0)
9     superbit.motor_control(superbit.M3, -255, 0)
10
11
```

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 [【Preparation before class】](#) --- [【How to import Yahboom superbit library】](#)

5. Experimental phenomena

After program download is complete, micro:bit dot matrix will display “Smile” and spider will advance 1s, back 2s, turn left 2s, turn right 2s, keep loop with this status.

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