

Tumblebit advance and back

Learning goals

In this lesson, we will learn how to control tumble:bit car advance and back.

Code

```
1 from microbit import *
2 import microbit
3 import superbit
4
5 display.show(Image.HAPPY)
6
7 while True:
8     superbit.motor_control_dual(superbit.M1, superbit.M3, 255, 255, 0)
9     microbit.sleep(1000)
10
11    superbit.motor_control_dual(superbit.M1, superbit.M3, 0, 0, 0)
12    microbit.sleep(500)
13
14    superbit.motor_control_dual(superbit.M1, superbit.M3, -255, -255, 0)
15    microbit.sleep(1000)
16
17    superbit.motor_control_dual(superbit.M1, superbit.M3, 0, 0, 0)
18    microbit.sleep(500)
19
```

`from microbit import *` is to import everything from the microbit library. Every program that uses micro:bit must import this library. We also need to import super:bit library, and import micro:bit library.

`display.show (Image.HAPPY)`: Micro:bit dot matrix display smiley face;

`superbit.motor_control_dual (superbit.M1, superbit.M3, 255, 255, 0)`: Controls the motors on M1 and M3 ports, all of which rotate at the speed of PWM255.

`microbit.sleep (1000)`: Delay 1000 milliseconds.

By changing the PWMs of M1 motor and M3 motor in loop to control the forward and reverse rotation of the motor, which will achieve the forward and backward movement of the motor and stop.

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.

Mu 1.0.3 - Play music.py

```

1 from microbit import *
2 import music
3
4 display.show(Image.MUSIC_QUAVER)
5 music.play(music.BIRTHDAY)
6

```

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.

```

1 from microbit import *
2 import neopixel
3
4 Red = (255, 0, 0)
5 Orange = (255, 165, 0)
6 Yellow = (255, 255, 0)
7 Green = (0, 255, 0)
8 Blue = (0, 0, 255)
9 Dark_Violet = (148, 0, 211)
10 White = (255, 255, 255)
11
12 color = (Red, Orange, Yellow, Green, Blue, Dark_Violet, White)
13

```

Good job! No problems found.

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.

```

Mu 1.0.3 - microbit-superbit_RGB_one.py
Mode New Load Save Flash Files REPL Plotter Zoom-in Zoom-out Theme
microbit-superbit_RGB_one.py x
1 from microbit import *
2 import neopixel
3
4 Red = (255, 0, 0)
5 Orange = (255, 165, 0)
6 Yellow = (255, 255, 0)
7 Green = (0, 255, 0)
8 Blue = (0, 0, 255)
9 Dark_Violet = (148, 0, 211)
10 White = (255, 255, 255)
...
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.

```

Mode New Load Save Flash Files REPL Plotter Zoom-in
microbit-superbit_RGB_one.py x
1 from microbit import *
2 import neopixel
3
4 Red = (255, 0, 0)
5 Orange = (255, 165, 0)
6 Yellow = (255, 255, 0)
7 Green = (0, 255, 0)
8 Blue = (0, 0, 255)
9 Dark_Violet = (148, 0, 211)

```

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】---【About Python programming】



Experimental phenomenon

After the tumble:bit car is powered on, the micro: bit dot matrix will show smile pattern and start moving.

Tumble:bit car moves forward at full speed for 1 second, stops for 0.5 seconds, then, it will move backward at full speed for 1 second, stops for 0.5 seconds. And keep looping like this status.

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