

## Courses8 --- Drive Motor

### Learning goal:

This lesson learns how to drive motor by Python programming.

### Code:

```

1 # -*- coding: utf-8-*# Encoding cookie added by Mu Editor
2 from microbit import display, Image
3 import tinybit
4
5 display.show(Image.HAPPY)
6 tinybit.setMotorPWM(255, 255, 1000)
7 tinybit.setMotorPWM(0, 0, 1000)
8 tinybit.setMotorPWM(-255, -255, 1000)
9 tinybit.setMotorPWM(0, 0, 1000)
10

```

1) Import the libraries needed for this routine: display is used to display the dot matrix, Image is used to display the built-in pattern, sleep delay time, and tinybit is used to drive the car.

2) **display.show (Image.HAPPY)** Make the micro:bit display a smiling face.

3) **tinybit.setMotorPWM (255, 255, 1000)** Make both left and right motors forward.

The first parameter: the left motor speed, range is -255 ~ 255. A negative number indicates the motor reserve. A positive number indicates the motor forward, 0 means the motor stops.

The second parameter: the right motor speed, ranges is -255 ~255. A negative number indicates that the motor is reserve. A positive number indicates that the motor forward, 0 indicates that the motor is stop.

The third parameter: Delay time, the unit is milliseconds ms.

### 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 Mu software interface. At the top is a toolbar with various icons: Mode, New, Load, Save, Flash, Files, REPL, Plotter, Zoom-in, Zoom-out, Theme, and Check. Below the toolbar is a status bar labeled "Advance.py" with a close button. The main area is a code editor containing the following Python code:

```

1 # -*- coding: utf-8-*# Encoding cookie added by Mu Editor
2 from microbit import display, Image
3 import tinybit
4
5 display.show(Image.ARROW_S)
6 tinybit.car_run(150)
7

```

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.

Mode New Load Save Flash Files REPL Plotter Zoom-in Zoom-out Theme Check

```
Advance.py
1 # -*- coding: utf-8-*-
2 from microbit import display, Image
3 import tinybit
4
5 display.show(Image.ARROW_S)
6 tinybit.car_run(150)
7
```

3. Click “REPL” button, check whether the tinybit library has been downloaded. If not, please refer to the [preparation before class]---> [Python programming]

Mode New Load Save Flash Files REPL Plotter Zoom-in Zoom-out

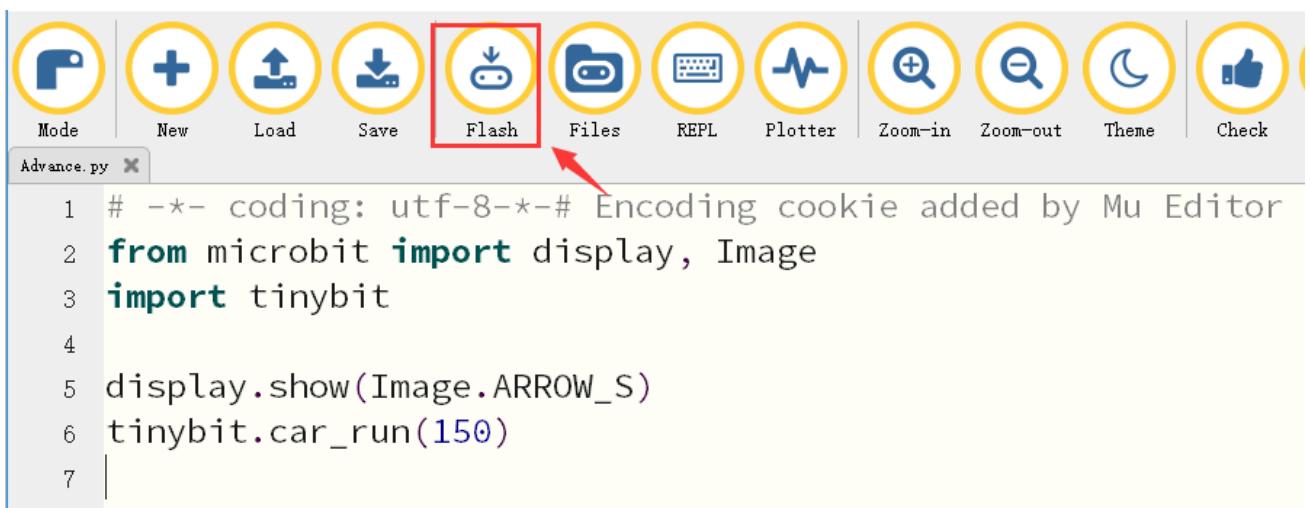
untitled

```
1 # Write your code here :-)
2
```

BBC micro:bit REPL

```
MicroPython for Tinybit V1.1 Modified by Yahboom Team
Type "help()" for more information.
>>>
>>> |
```

4. Click the “Flash” button to download the program to micro:bit board.



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

For the specific method of adding library files, please refer to **【1.Preparation before class】** --- **【Python programming】**

### Experimental phenomena

After download is complete, open the power switch. A smile face appears on the micro:bit dot matrix. Motor will forward 1s --> reserve 1s --> stop.