

Walking

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1. Learning objectives

In this course, we mainly learn how to make the bipedal robot move forward through Python programming.

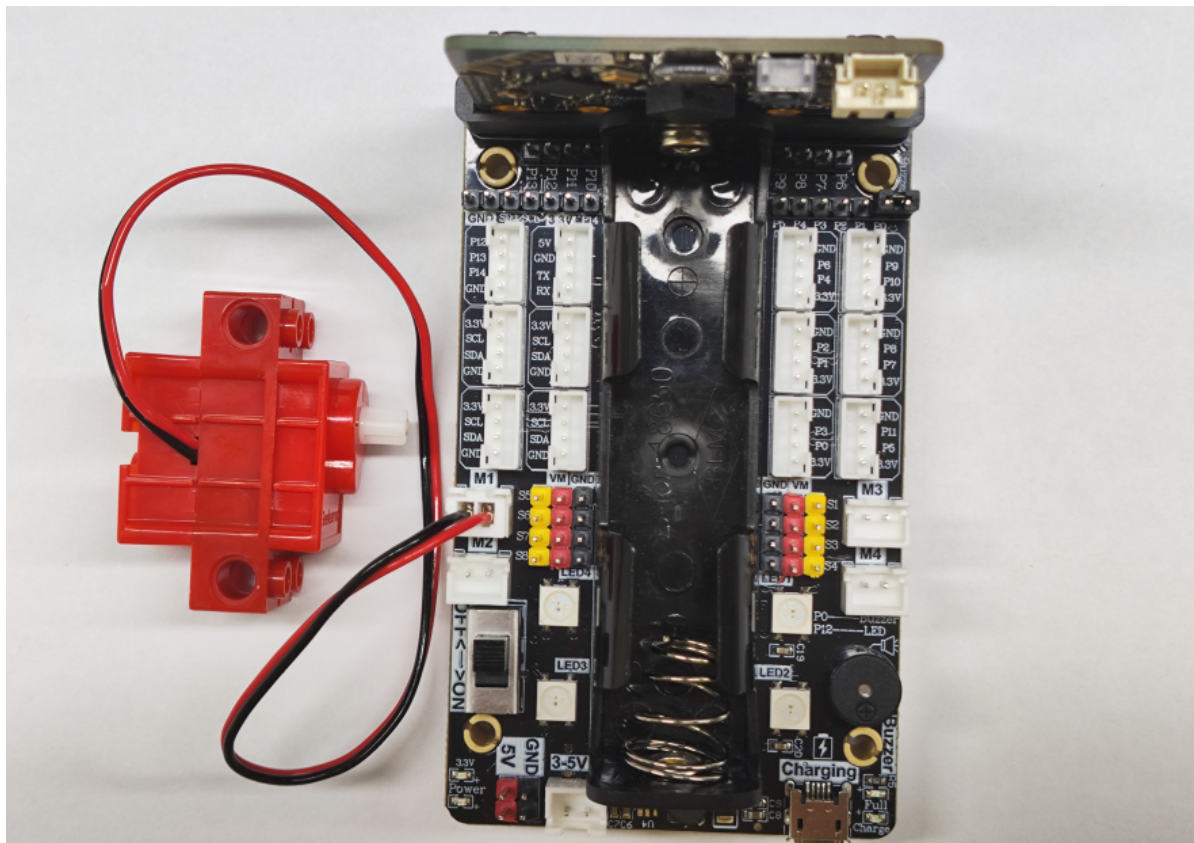
2. Building blocks

For the building blocks steps, please refer to the installation drawings or building blocks installation album of [Assembly course]-[Biped robot] in the materials.

3. Motor wiring

Insert the motor wiring on the left side of the car into the M1 interface of the Super:bit expansion board, with the black wire close to the battery side;

As shown below:



4. Code analysis

For the program of this course, please see the **Walking.py** file.

```
from microbit import *  
import superbit
```

First, import the library needed for this lesson from microbit: the superbit library is dedicated to the superbit expansion board.

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

display.show(Image.HAPPY): Display a smiley face pattern on the microbit dot matrix;

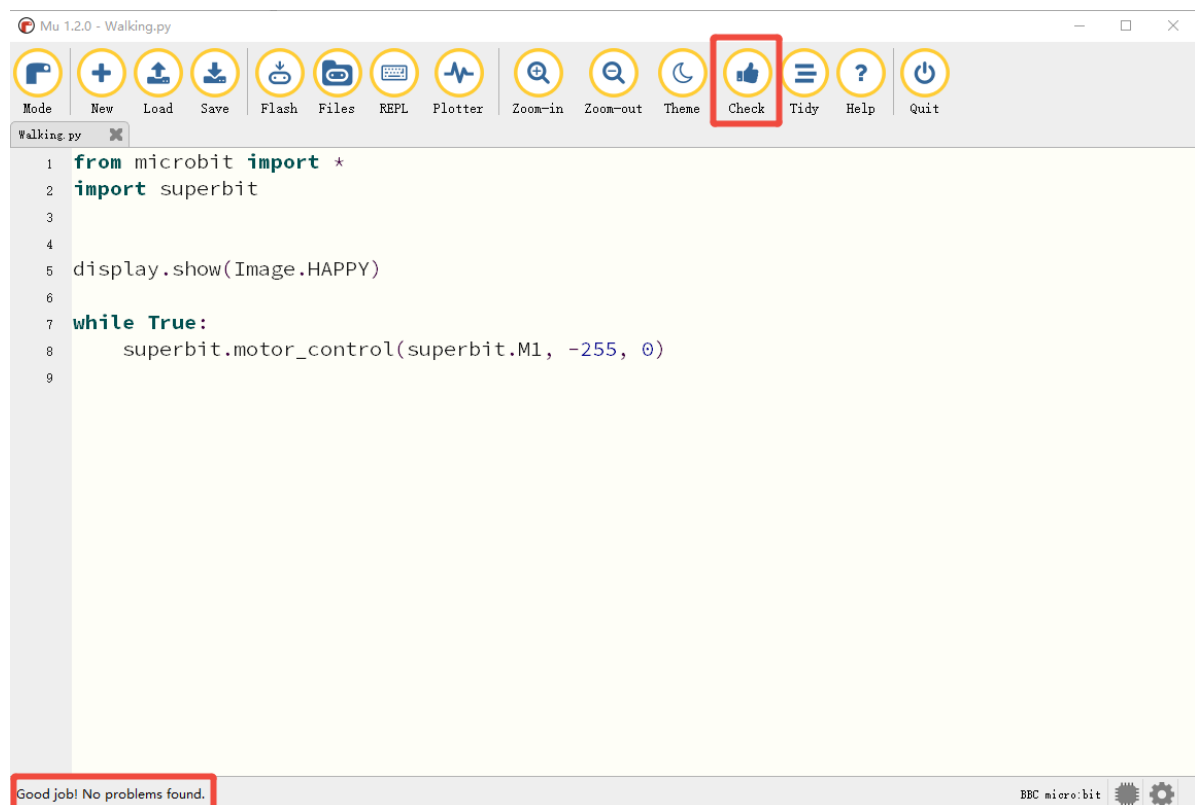
```
while True:  
    superbit.motor_control(superbit.M1, -255, 0)
```

while True: infinite loop

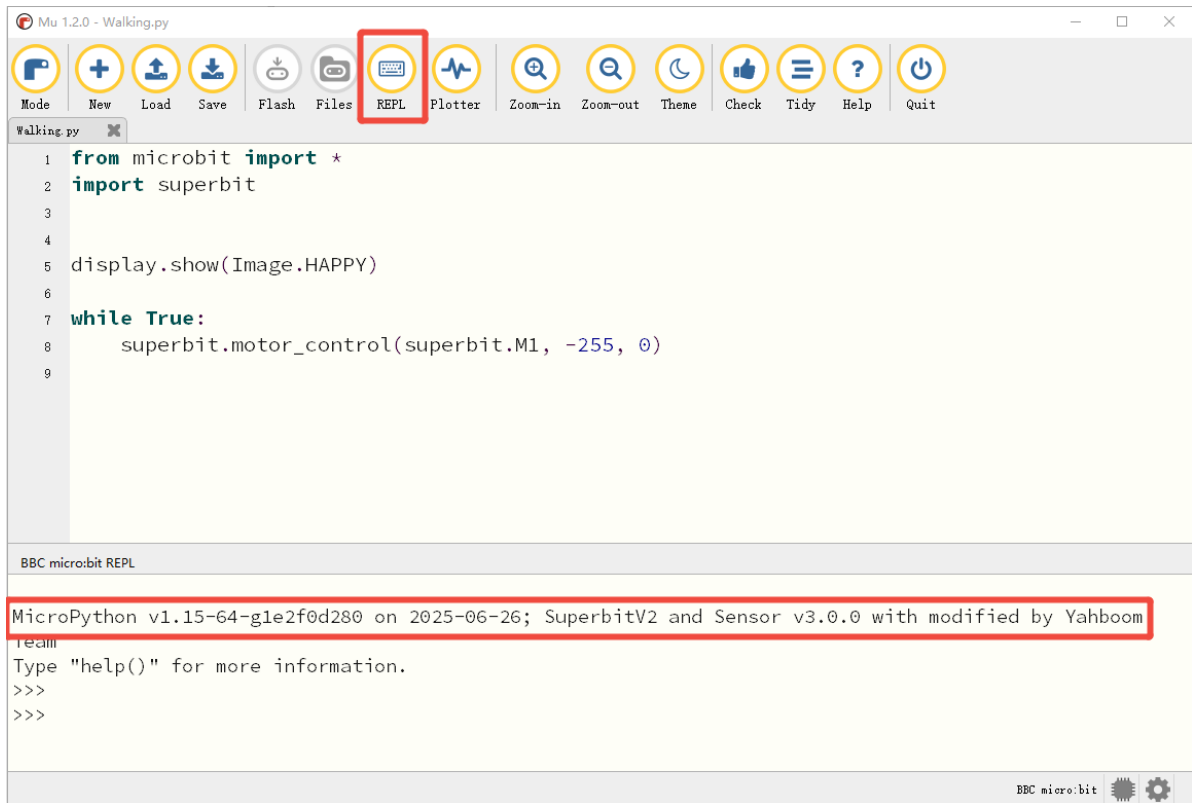
superbit.motor_control(superbit.M1, -255, 0): The motor of the M1 interface reverses at a speed of 255, and the bipedal robot moves forward.

5. Write and download the program

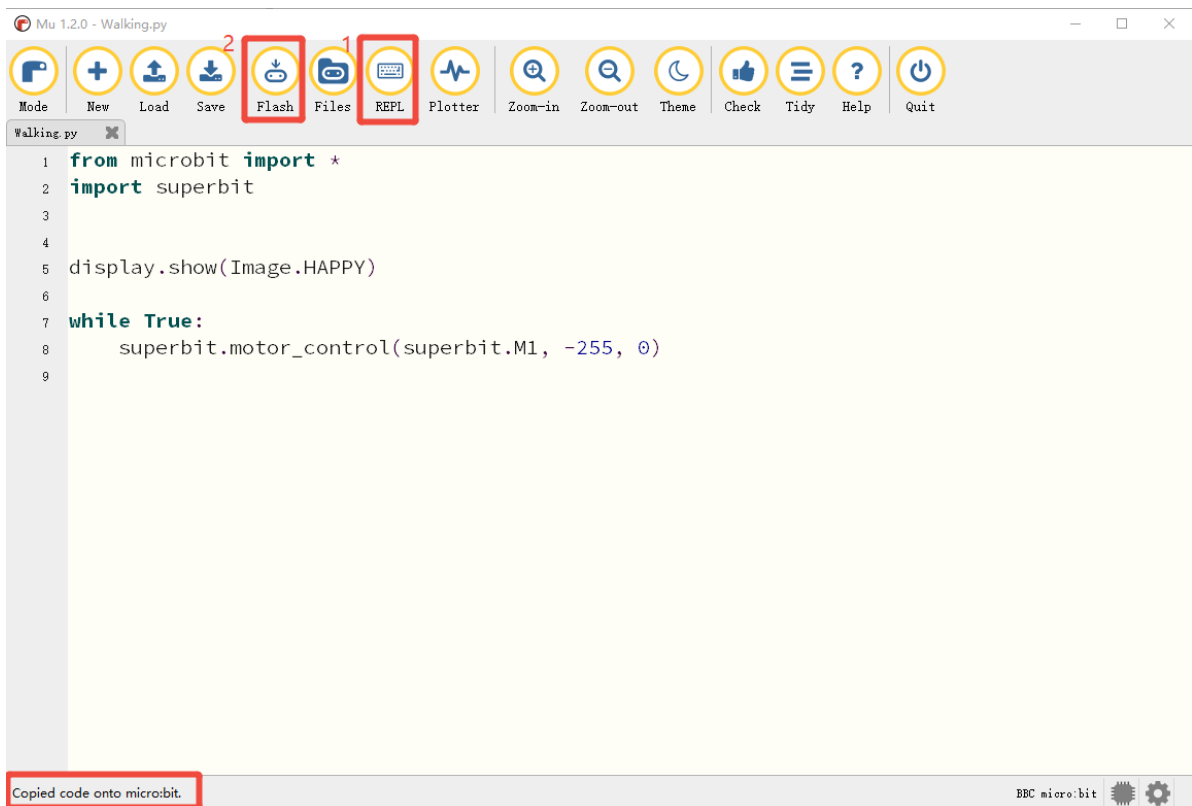
1. Open the Mu software and enter the code in the editing window. **Note! All English and symbols should be entered in English mode, use the Tab key (tab key) for indentation, and the last line ends with a blank program.**
2. Click the thumb 'Check' button to check if there are any errors in our code. If a cursor or underline appears in a line, it means a syntax error. Please check and modify it. If there is no error, the lower left corner will prompt that there is no problem with the 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, connect the computer and the microbit mainboard with a microUSB data cable, and click the 'Flash' button to download the program to the micro:bit mainboard. **(You need to click the 'REPL' button again to turn off the import library file function before you can download the program normally).**



5. If the download fails, please confirm whether the microbit is properly connected to the computer via the microUSB data cable and the Superbit Python library has been imported.

6. Experimental phenomenon

After the program is successfully downloaded, turn on the power switch, and a smiley face pattern will be displayed on the micro:bit dot matrix, as shown in the figure below, and the bipedal robot will keep moving forward.