

1.Heart beat

1. Learning goals

In this lesson, we will learn to use micro:bit to realize dot matrix flashing display of large and small heart patterns.

2.Code and analysis

```
1 from microbit import *
2
3 while True:
4     display.show(Image.HEART)
5     sleep(500)
6     display.show(Image.HEART_SMALL)
7     sleep(500)
8
```

from microbit import *

This code is to import everything from the microbit library, and any program need to uses import this library.

display.show(image.HEART)

Micro:bit dot matrix display heart pattern.

Sleep(500)

Delay 500ms.

List of built-in images:

- Image.HEART
- Image.HEART_SMALL
- Image.HAPPY
- Image.SMILE
- Image.SAD
- Image.CONFUSED
- Image.ANGRY
- Image.ASLEEP
- Image.SURPRISED
- Image.SILLY
- Image.FABULOUS
- Image.MEH
- Image.YES
- Image.NO

- Image.CLOCK12, Image.CLOCK11, Image.CLOCK10, Image.CLOCK9, Image.CLOCK8, Image.CLOCK7, Image.CLOCK6, Image.CLOCK5, Image.CLOCK4, Image.CLOCK3, Image.CLOCK2, Image.CLOCK1
- Image.ARROW_N, Image.ARROW_NE, Image.ARROW_E, Image.ARROW_SE, Image.ARROW_S, Image.ARROW_SW, Image.ARROW_W, Image.ARROW_NW
- Image.TRIANGLE
- Image.TRIANGLE_LEFT
- Image.CHESSBOARD
- Image.DIAMOND
- Image.DIAMOND_SMALL
- Image.SQUARE
- Image.SQUARE_SMALL
- Image.RABBIT
- Image.COW
- Image.MUSIC_CROTCHET
- Image.MUSIC_QUAVER
- Image.MUSIC_QUAVERS
- Image.PITCHFORK
- Image.XMAS
- Image.PACMAN
- Image.TARGET
- Image.TSHIRT
- Image.ROLLERSKATE
- Image.DUCK
- Image.HOUSE
- Image.TORTOISE
- Image.BUTTERFLY
- Image.STICKFIGURE
- Image.GHOST
- Image.SWORD
- Image.GIRAFFE
- Image.SKULL
- Image.UMBRELLA
- Image.SNAKE

Image.ALL_CLOCKS
Image.ALL_ARROWS

Note:

- 1 - The capital letter/lowercase letters must be distinguished !
- 2 - Correct spelling!
- 3 - Keywords such as # need a space between the content.
- 4 - You can only use the Tab key (tabulation key) for indentation.

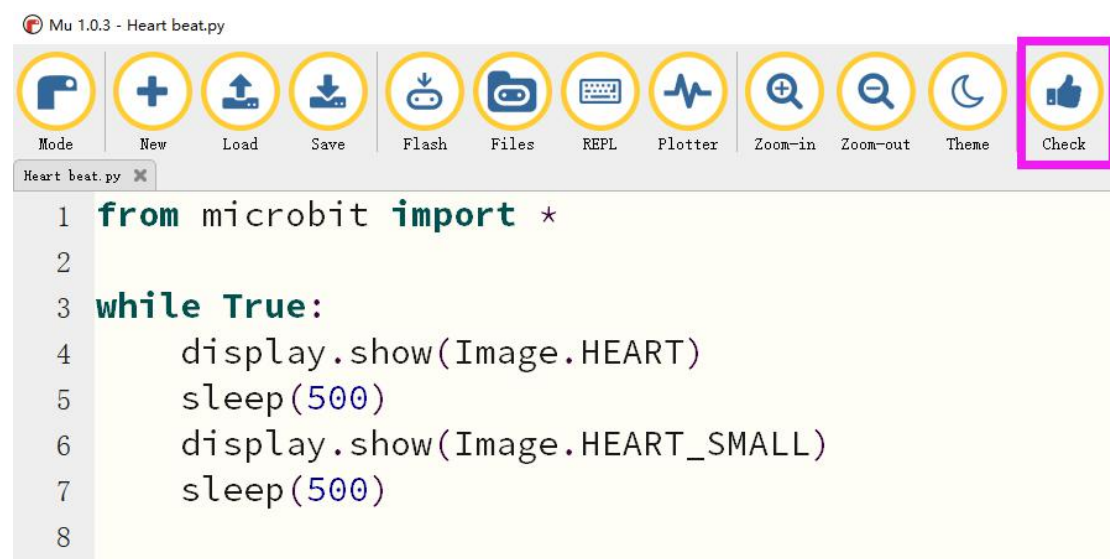
3.Programming and downloading

3.1 You should open the Mu software, and enter the code in the edit window, , as shown in Figure .

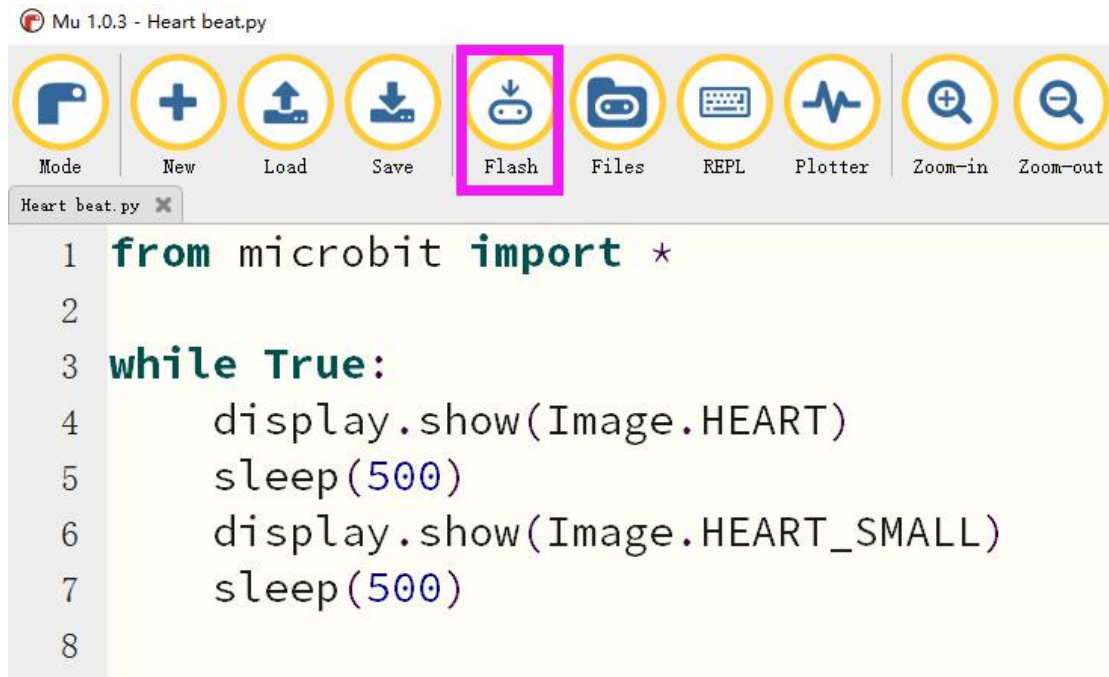
Note! All English and symbols should be entered in English, and the last line must be a space.

```
1 from microbit import *
2
3 while True:
4     display.show(Image.HEART)
5     sleep(500)
6     display.show(Image.HEART_SMALL)
7     sleep(500)
8 
```

3.2 As shown in Figure, you need to 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.



3.3 You need to connect the micro data cable to micro:bit and the computer, then click the Flash button to download the program to micro:bit as shown in Figure 2-3.



4. Experimental phenomena

After the download is successful, you can see that a heart on the micro:bit dot matrix will flashing.

