

## Course9 - Small fan

### Learning goals:

This lesson learns to use the Python language to program the fan motor to turn. After pressing the A button, the fan starts to rotate and there is an animation of the fan turning on the dot matrix.

### Code :

```
from microbit import *
fun1 = Image("00990:90900:99999:00909:09900")
fun2 = Image("99009:09099:00900:99090:90099")
all_fun = [fun1, fun2]
while True:
    if button_a.is_pressed():
        while True:
            pin0.write_digital(1)
            display.show(all_fun, delay=100)
    else:
        display.show(Image.HEART)
        display.clear()
```

### Programming and downloading:

1. You should open the Mu software, and enter the code in the edit window, , as shown in Figure 9-1.

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

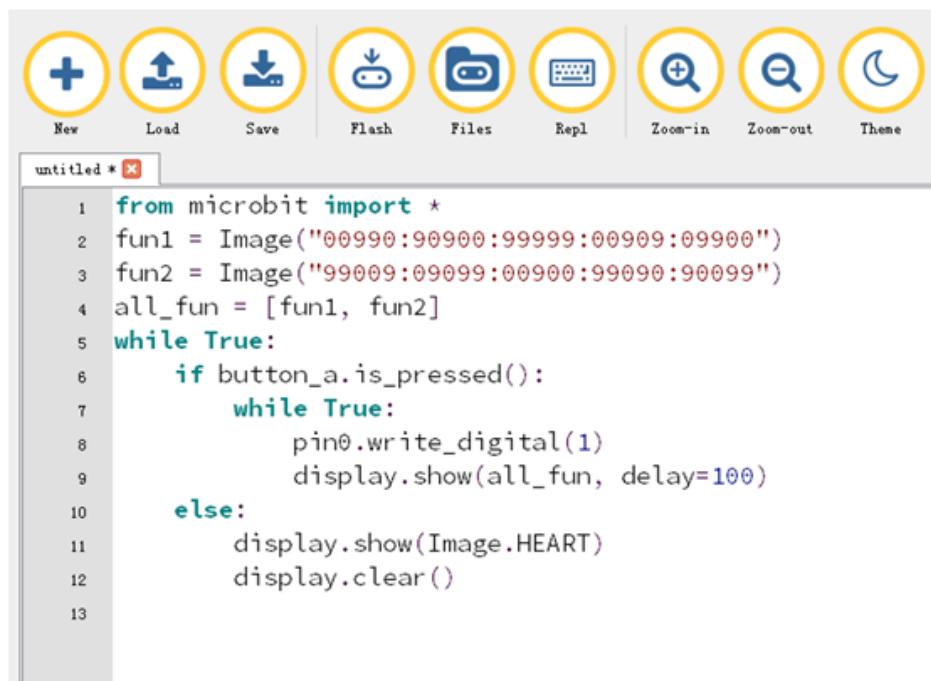


Figure 9-1

2. As shown in Figure 9-2, 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.

```

1 from microbit import *
2 fun1 = Image("00990:90900:99999:00909:09900")
3 fun2 = Image("99009:09099:00900:99090:90099")
4 all_fun = [fun1, fun2]
5 while True:
6     if button_a.is_pressed():
7         while True:
8             pin0.write_digital(1)
9             display.show(all_fun, delay=100)
10    else:
11        display.show(Image.HEART)
12        display.clear()
13

```

Figure 9-2

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 9-3.

```

1 from microbit import *
2 fun1 = Image("00990:90900:99999:00909:09900")
3 fun2 = Image("99009:09099:00900:99090:90099")
4 all_fun = [fun1, fun2]
5 while True:
6     if button_a.is_pressed():
7         while True:
8             pin0.write_digital(1)
9             display.show(all_fun, delay=100)
10    else:
11        display.show(Image.HEART)
12        display.clear()
13

```

Figure 9-3

#### 4. About wiring

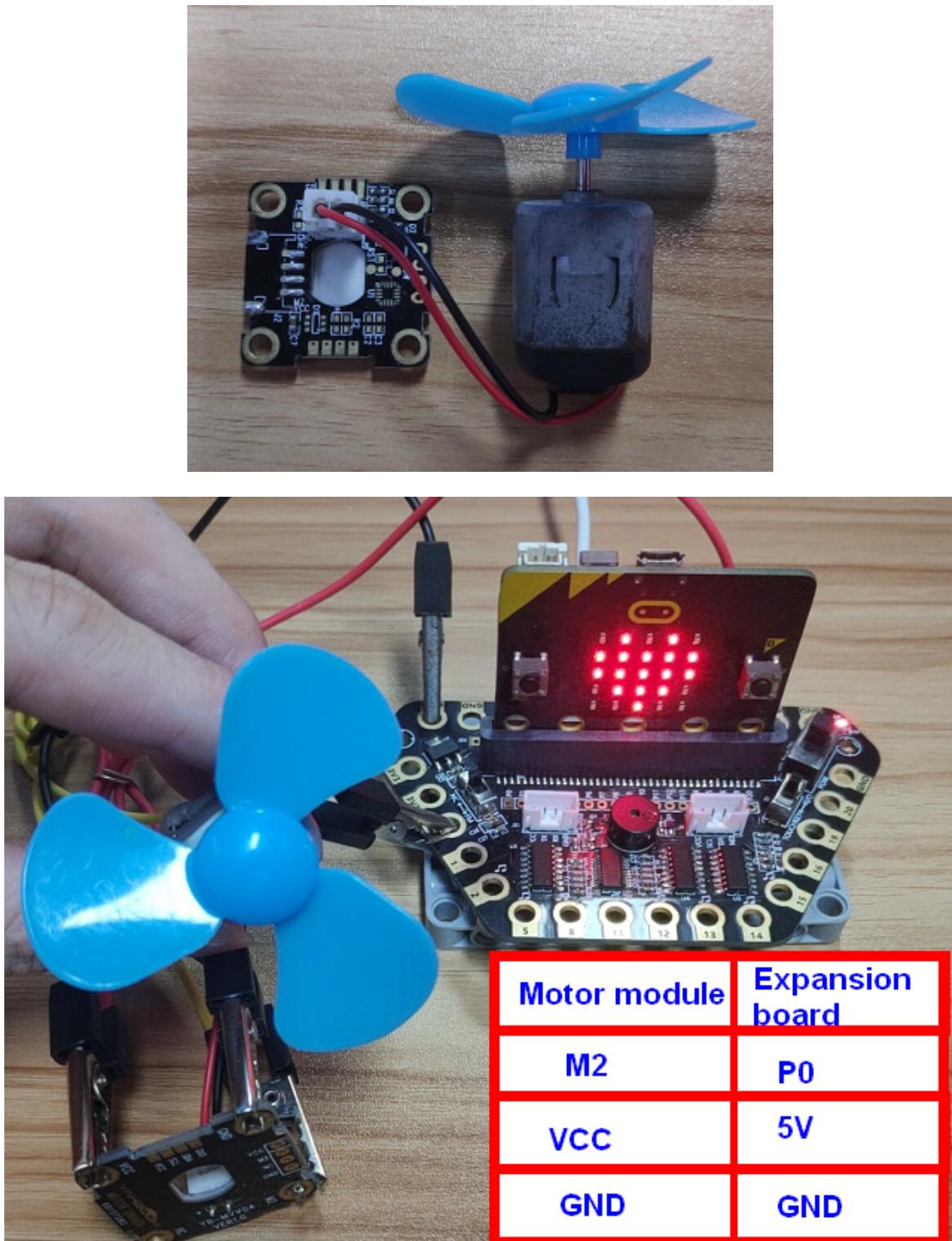


Figure 9-4

5. After the download is successful, we can see a heart on the micro:bit dot matrix, as shown in Figure 9-5. When the A button is pressed, the fan starts to rotate, and an animation of the fan rotation appears on the dot matrix, as shown in Figure 9- 6, 9-7.

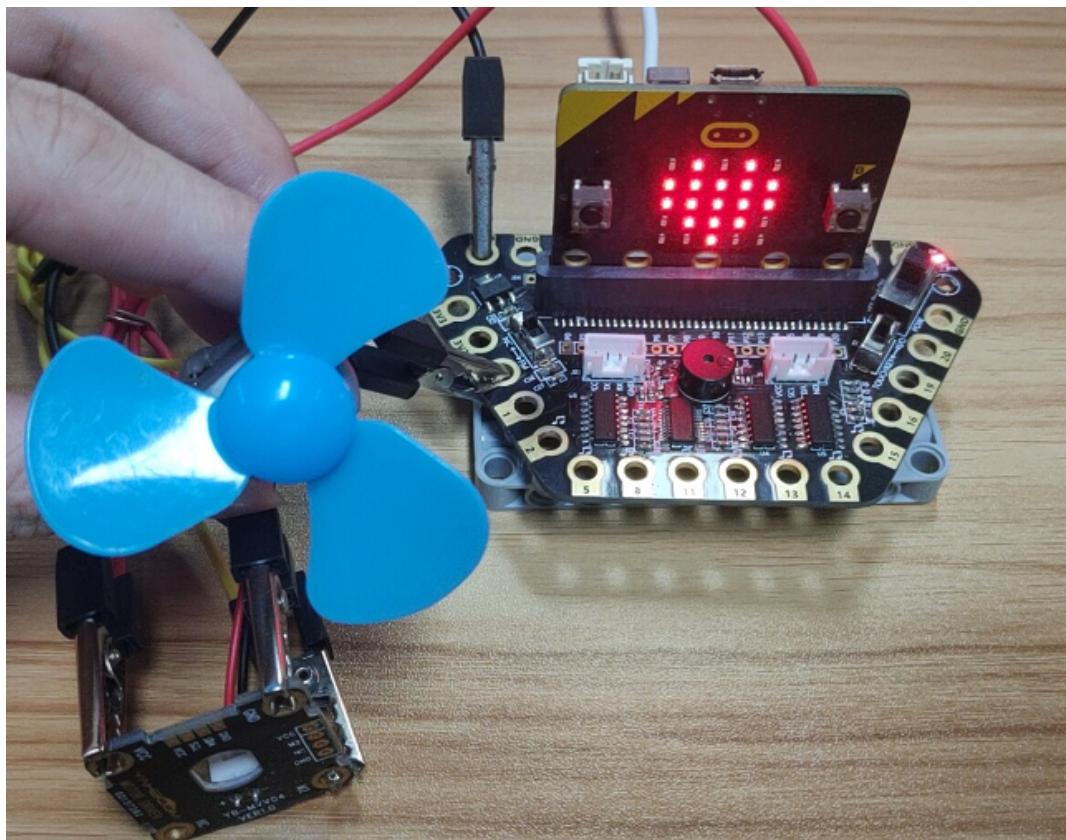


Figure 9-5

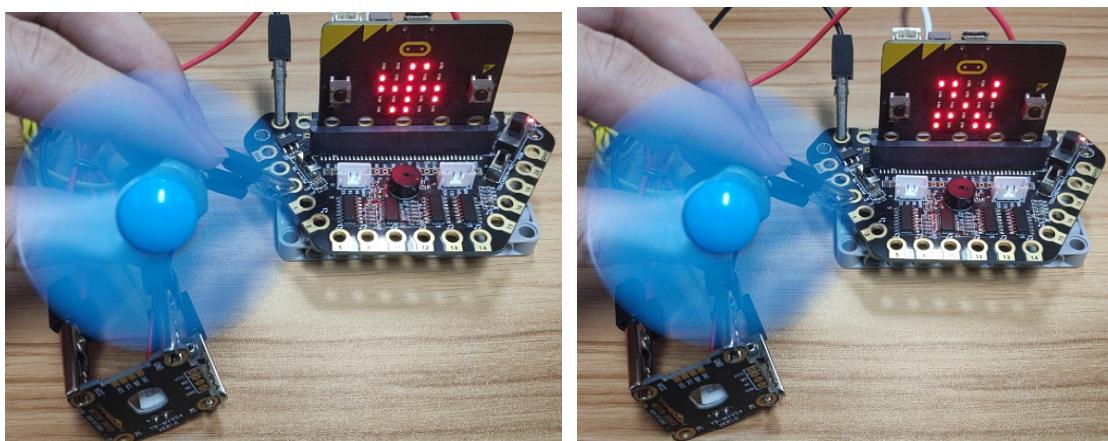


Figure 9-6

Figure 9-7