

Python Basic course16 --- IR control

Learning goals:

This lesson we will learn how to use Infrared remote controller by Python programming.

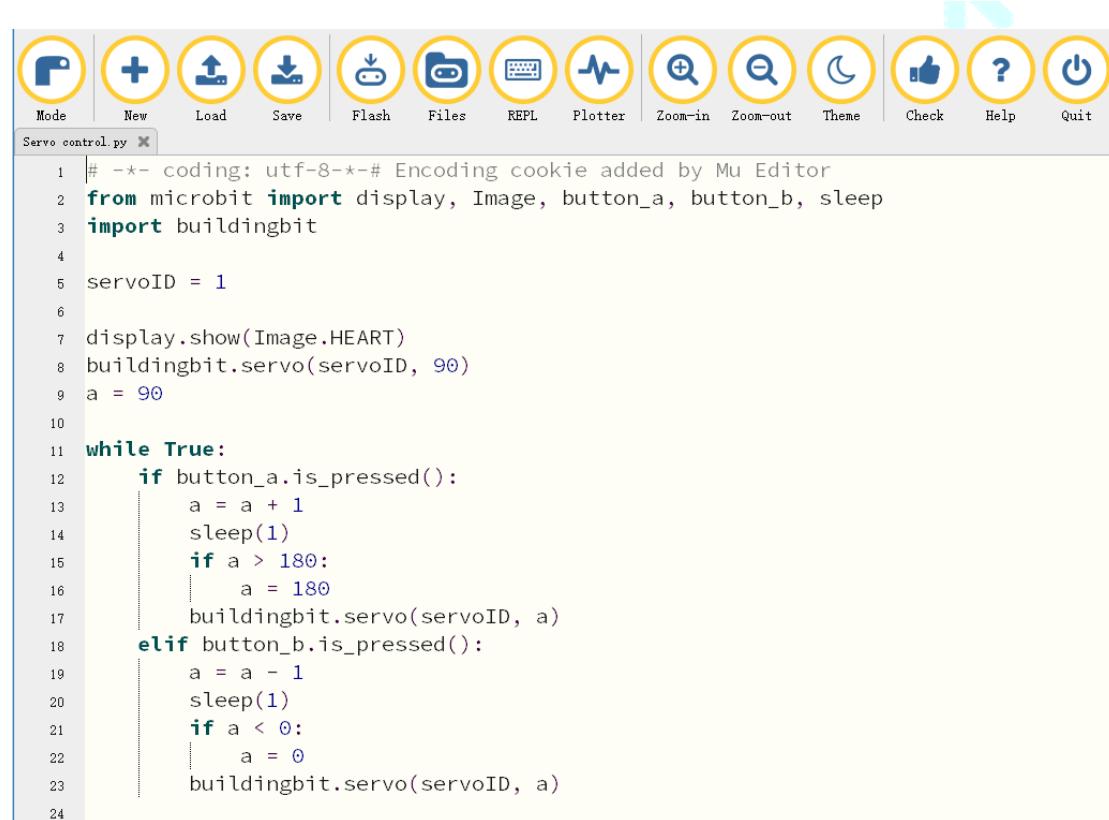
Code :

Please use the MU software to open the **IR Whistle.py** file we provided.

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, Tab key for indentation, and the last line must be a space.



The screenshot shows the Mu Editor interface. The toolbar at the top has icons for Mode, New, Load, Save, Flash, Files, REPL, Plotter, Zoom-in, Zoom-out, Theme, Check, Help, and Quit. Below the toolbar is a code editor window titled "Servo control.py". The code is as follows:

```

1 # -*- coding: utf-8-*# Encoding cookie added by Mu Editor
2 from microbit import display, Image, button_a, button_b, sleep
3 import buildingbit
4
5 servoid = 1
6
7 display.show(Image.HEART)
8 buildingbit.servo(servoid, 90)
9 a = 90
10
11 while True:
12     if button_a.is_pressed():
13         a = a + 1
14         sleep(1)
15         if a > 180:
16             a = 180
17         buildingbit.servo(servoid, a)
18     elif button_b.is_pressed():
19         a = a - 1
20         sleep(1)
21         if a < 0:
22             a = 0
23         buildingbit.servo(servoid, a)
24

```

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. If there is no cursor or underline, it means that the code is correct, and the bottom left will prompt that the check is OK.

```

Servo control.py x
1 # -*- coding: utf-8-*# Encoding cookie added by Mu Editor
2 from microbit import display, Image, button_a, button_b, sleep
3 import buildingbit
4
5 servoid = 1
6
7 display.show(Image.HEART)
8 buildingbit.servo(servoid, 90)
9 a = 90
10
11 while True:
12     if button_a.is_pressed():
13         a = a + 1
14         sleep(1)
15         if a > 180:
16             a = 180
17         buildingbit.servo(servoid, a)
18     elif button_b.is_pressed():
19         a = a - 1
20         sleep(1)
21         if a < 0:
22             a = 0
23         buildingbit.servo(servoid, a)
24

```

Awesome! Zero problems found.

Micropixel

3. You need to connect the micro data cable to micro:bit and the computer and **download buildingbit library into micro:bit**. Then, click “REPL” button to import “Yahboom buildingbit library”. As shown below.

```

红外避障传感器.py x
1 # -*- coding: utf-8-*# Encoding cookie added by Mu Editor
2 from microbit import display
3 import buildingbit
4 import music
5
6 display.off()
7 avoid = False
8

```

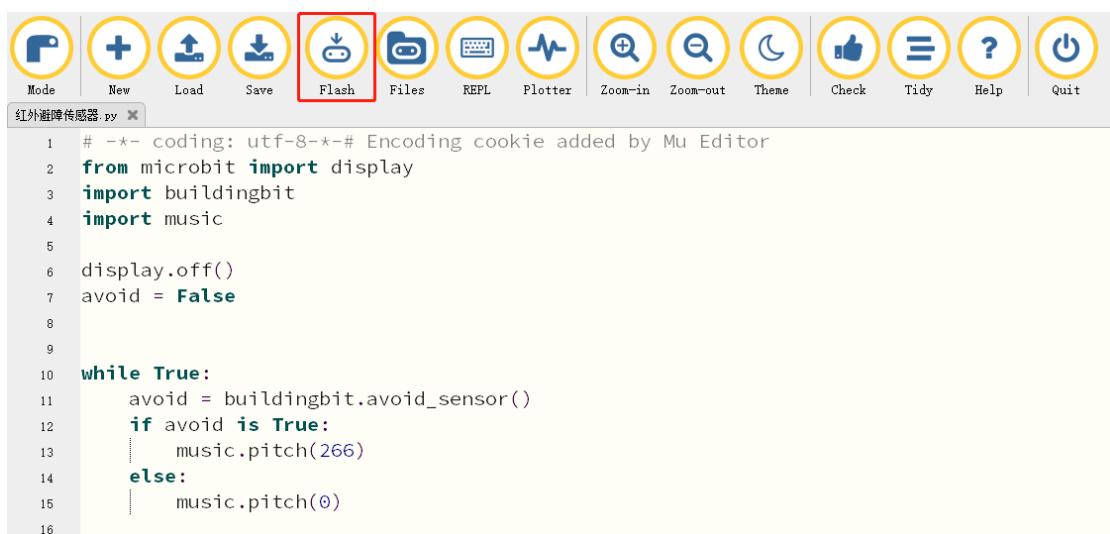
BBC micro:bit REPL

```

File "__main__", line 11, in <module>
KeyboardInterrupt:
MicroPython for Building:bit V1.0 modified by Yahboom Team
Type "help()" for more information.
>>>
MicroPython for Building:bit V1.0 modified by Yahboom Team
Type "help()" for more information.
>>> |

```

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



```
1 # -*- coding: utf-8-*# Encoding cookie added by Mu Editor
2 from microbit import display
3 import buildingbit
4 import music
5
6 display.off()
7 avoid = False
8
9
10 while True:
11     avoid = buildingbit.avoid_sensor()
12     if avoid is True:
13         music.pitch(266)
14     else:
15         music.pitch(0)
16
```

Experimental phenomena

After download is completed. When we press button on IR controller, we can heard buzzer sound.