

Python Basic Course9 --- Colorful water lights

Learning goals:

This lesson learns to use Python programming to light up the water lights of micro:bit expansion board.

Code:

In the program, import neopixel is means to import neopixel library, we can make micro:bit robot display a smile on the lattice. Then define the pin of the water light as pin16, the number is 3, iterate each LED in the water lights., np[0] = (255, 0, 0) means that the first water light is red. Modify the parameters in the brackets to change the color of the light.

```
from microbit import *
import neopixel
display.show(Image.HAPPY)
# The water lamp is connected to pin pin16, the number is 3
np = neopixel.NeoPixel(pin16, 3)
# iterate each LED in the water lights
for pixel_id in range(0, len(np)):
    # Light up the first water light to red
    np[0] = (255, 0, 0)
    np[1] = (0, 255, 0)
    np[2] = (0, 0, 255)
    # display color
    np.show()
```

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.

Mu

```

1 from microbit import *
2 import neopixel
3 display.show(Image.HAPPY)
4 # The water lamp is connected to pin pin16, the number is 3
5 np = neopixel.NeoPixel(pin16, 3)
6 # iterate each LED in the water lights
7 for pixel_id in range(0, len(np)):
8     # Light up the first water light to red
9     np[0] = (255, 0, 0)
10    # display color
11    np.show()
12

```

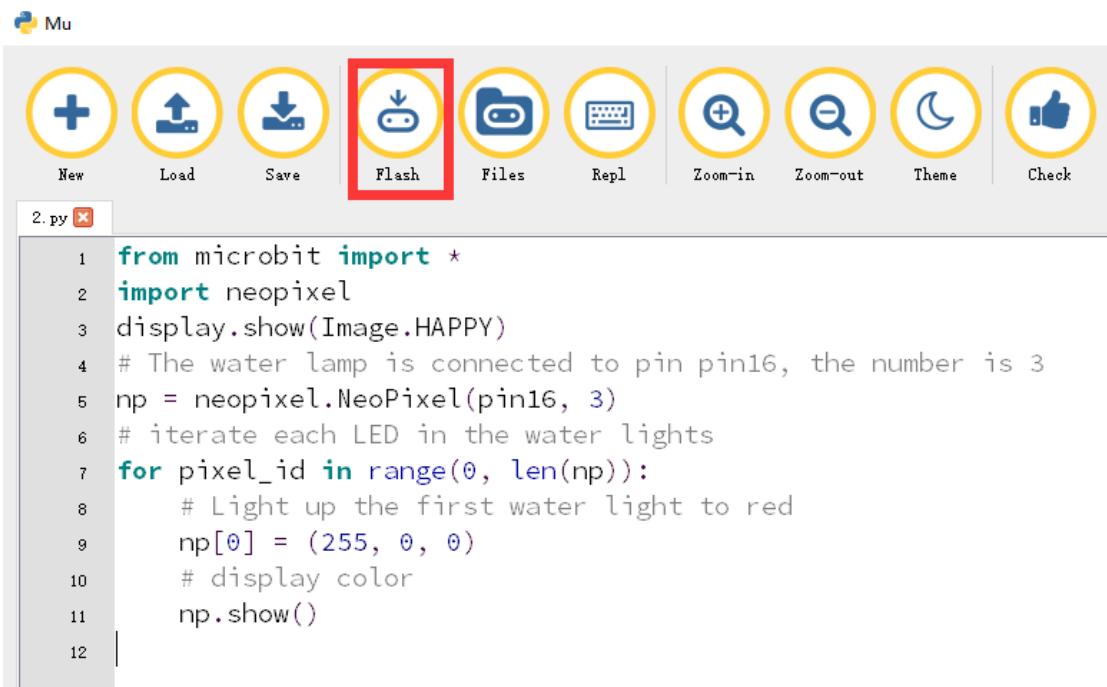
2. You need to click the “**Check**” button to check if our code has an error. If a line appears with a cursor or an underscore, the program indicating this line is wrong. If there is no cursor or underline, it means that the code is correct, and the bottom left will prompt that the check is OK.

```

1 from microbit import *
2 import neopixel
3 display.show(Image.HAPPY)
4 # The water lamp is connected to pin pin16, the number is 3
5 np = neopixel.NeoPixel(pin16, 3)
6 # iterate each LED in the water lights
7 for pixel_id in range(0, len(np)):
8     # Light up the first water light to red
9     np[0] = (255, 0, 0)
10    # display color
11    np.show()
12

```

3. You need to connect the micro data cable to micro:bit and the computer. Click “**Flash**” to download program to micro:bit board.



Experimental phenomena

After download is complete. The three car light on micro:bit expansion board will become red, green, blue.