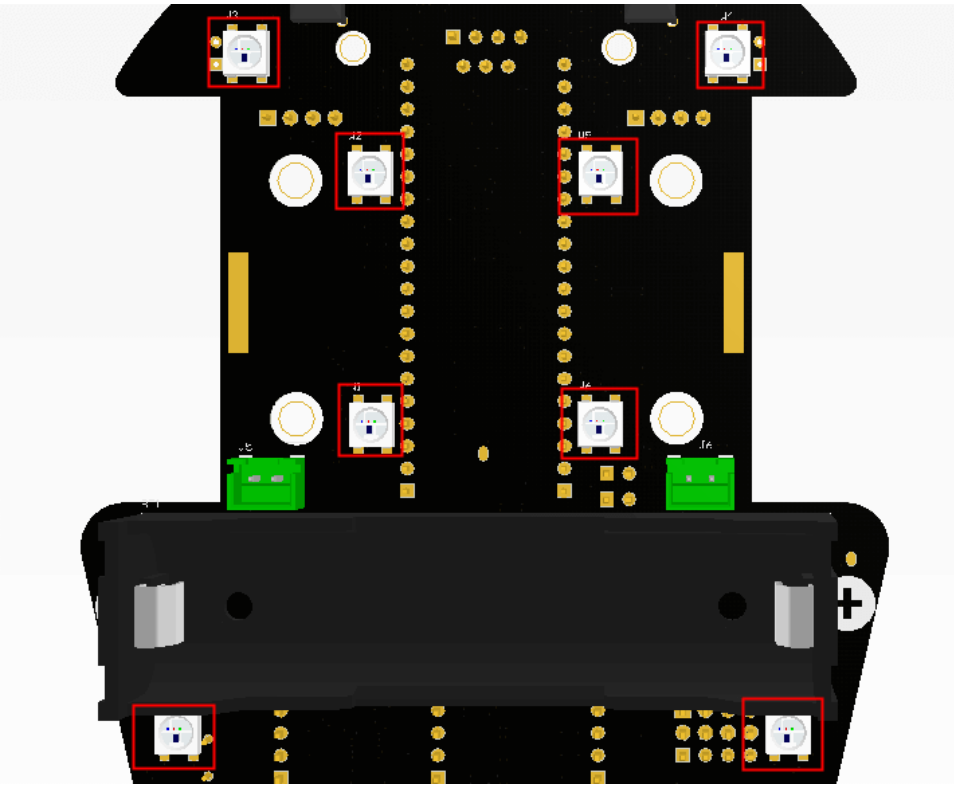
3.5 Marquee light

1. Learning Objectives

In this coirse, we will learn how to make RGB lights realize the marquee effect.

2. About Hardware

We need use RGB lights on Pico robot.



Pico robot has 8 programmable RGB lights, which can realize colorful lighting effects.

The 8 programmable lights have built-in ws2812 chips. Only one port is needed to control 8 lights at the same time through timing control.

The timing control function is encapsulated in the library, we just need to call it to set the color of the light.

3. About Code

Code path: Code -> 1.Basic course -> 5.Marquee light.py

```
import time
from pico_car import ws2812b

num_leds = 8  # Number of NeoPixels
# Pin where NeoPixels are connected
pixels = ws2812b(num_leds, 0)
# Set all led
pixels.fill(10,10,10)
pixels.show()
# horse race lamp
while True:
```

```
    for i in range(num_leds):
        for j in range(num_leds):
            #pixel_num, red, green, blue
            pixels.set_pixel(j,abs(i+j)%10,abs(i-(j+3))%10,abs(i-(j+6))%10)
        pixels.show()
        time.sleep(0.05)
```

from pico_car import ws2812b

Because only the lights are on, only the ws2812b of pico_car is used here.

import time

The "time" library. This library handles everything time related, from measuring it to inserting delays into programs. The unit is seconds.

pixels = ws2812b(num_leds, 0)

Initialize RGB lights, we have 8 RGB lights, here num_leds is set to 8.

pixels.fill(10,10,10)

Set all lights to 10, 10, 10, the parameters are (red, green, blue), and the color brightness is 0-255.

pixels.show()

Display the set lights.

pixels.set_pixel(j,abs(i+j)%10,abs(i-(j+3))%10,abs(i-(j+6))%10)

Use this function to set the color of each lamp. The parameters are (the number of the lamp, red, green, blue), the number of the lamp starts from 0, and the color brightness is 0-255. Here, the variable value is set through two for loops , to achieve the marquee effect.

4. Experimental Phenomenon

After the code is downloaded, we can see the marquee effect on Pico robot.