Raspberry PI Pico

Aufgabe

Erstelle eine Ampelsteuerung mittels Pi-Pico. Als Sensoren soll dabei eine Webseite dienen.

IDE

Als Entwicklungsumgebung eignet sich dazu entweder Visual Studio Code oder Thonny.
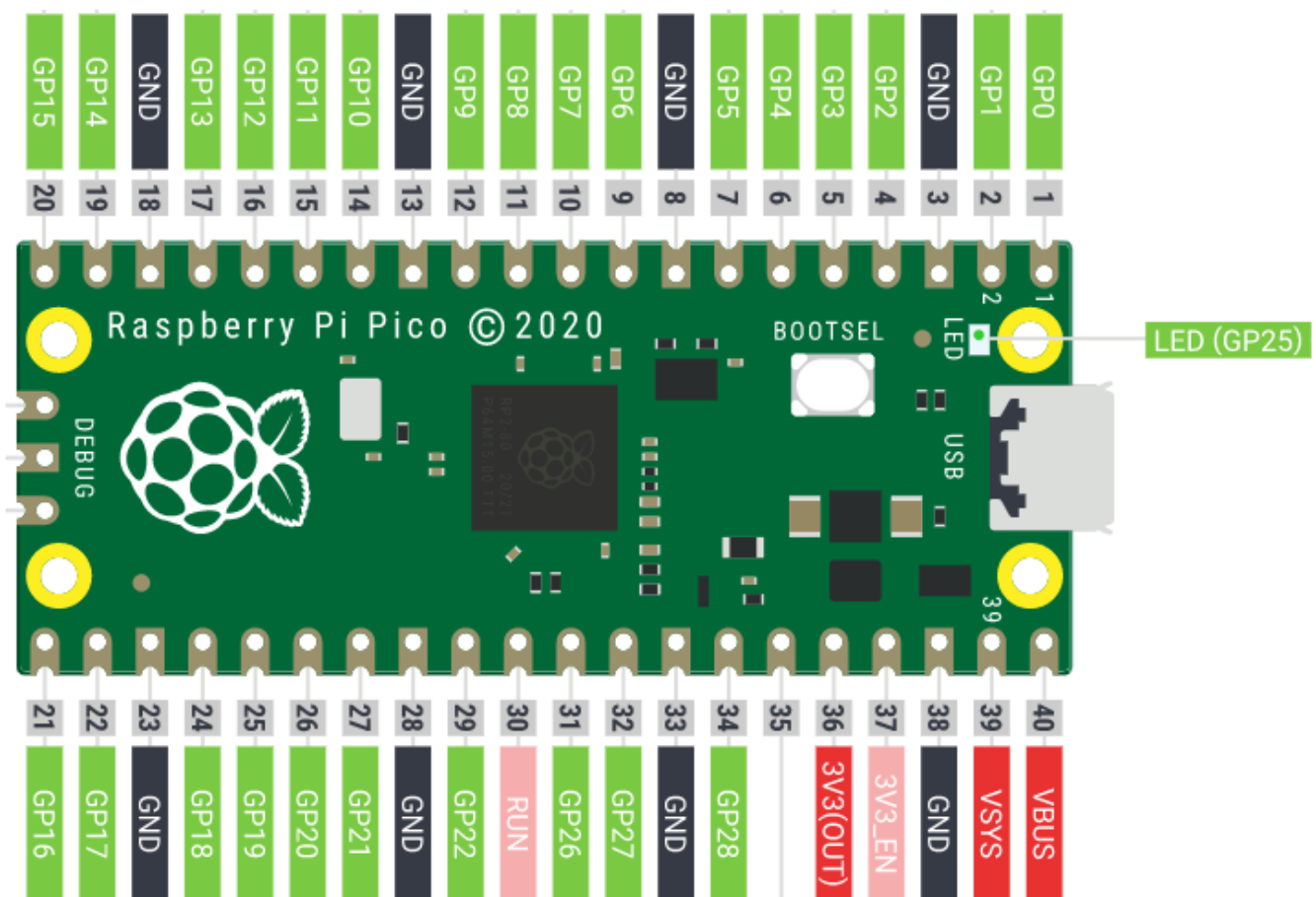
Visual Studio Code

https://marketplace.visualstudio.com/items?itemName=raspberry-pi.raspberry-pi-pico

Thonny

https://thonny.org

Pinout

Samples

Webserver

```python
import socket
import network
import machine

ssid = '{insertSSID}'
password = '{insertSSID-PW}'

led = machine.Pin("LED",machine.Pin.OUT)

ap = network.WLAN(network.AP_IF)
ap.config(essid=ssid, password=password)
ap.active(True)

while ap.active() == False:
  pass

print('Connection successful')
print(ap.ifconfig())

html = """<!DOCTYPE html>
<html>
    <head> <title>Pico W</title> </head>
    <body> <h1>Pico W</h1>
        <p>Hello from Pico W.</p>
    </body>
</html>
"""

addr = socket.getaddrinfo('0.0.0.0', 80)[0][-1]
s = socket.socket()
s.bind(addr)
s.listen(1)

print('listening on', addr)
led.off()

# Listen for connections
while True:
    try:
        cl, addr = s.accept()
        print('client connected from', addr)
        request = cl.recv(1024)
        led.on()
        print(request)
```

```
        cl.send('HTTP/1.0 200 OK\r\nContent-type: text/html\r\n\r\n')
        cl.send(html)
        cl.close()
        led.off()

    except OSError as e:
        cl.close()
        print('connection closed')
```

Blink

```python
from machine import Pin
from utime import sleep

pin = Pin("LED", Pin.OUT)
led1 = Pin(28, Pin.OUT)
led2 = Pin(27, Pin.OUT)

led3 = Pin(8, Pin.OUT)
led4 = Pin(9, Pin.OUT)


print("LED starts flashing...")
led2.on()
led1.off()

led4.on()
led3.off()

while True:
    try:
        pin.toggle()
        led1.toggle()
        led2.toggle()
        led3.toggle()
        led4.toggle()

        sleep(1) # sleep 1sec
    except KeyboardInterrupt:
        break
pin.off()
led2.off()
led1.off()
led4.off()
led3.off()

print("Finished.")
```