

Traffic Light LEDs using Array

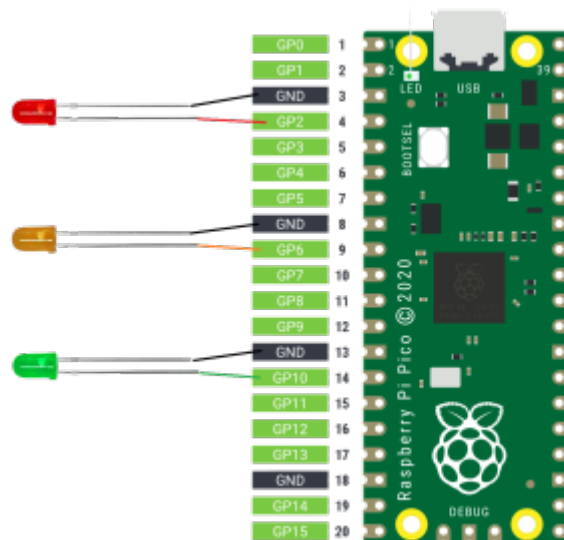
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Introduction

In this LED example, we are creating a traffic light sequence, but instead of addressing every LED at every stage, we are going to put the GPIO pins in to an array, and address just the LEDs that need to change each time.

Here is a wiring diagram for the LED setup. This is what we will use when we run the software below.



We have wired the LEDs to GPIO pins 2, 6 & 10. These are the GPIO Pin numbers, not the actual Pi Pico Pin numbers.

Below is the software being used to drive the LEDs

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```
#Traffic light LEDs using an array

from machine import Pin
import time

# Define GPIO pins for the LEDs
RED = Pin(2, Pin.OUT)
AMBER = Pin(6, Pin.OUT)
GREEN = Pin(10, Pin.OUT)

# Put them in an array
lights = [RED, AMBER, GREEN]

# Helper function to turn all lights off
def all_off():
    for light in lights:
        light.off()

while True:
```

```
# Red
all_off()
RED.on()
time.sleep(3)

# Red + Amber
AMBER.on()
time.sleep(1)

# Green
all_off()
GREEN.on()
time.sleep(3)

# Amber
all_off()
AMBER.on()
time.sleep(1)
```

As you can see from the code, we have the four steps of the traffic light sequence. In step one, we can also turn off all the LEDs by calling the function we defined called `all_off()` with the command '`all_off()`' command.

Here is the sequence running.

[traffic-light-array.mp4](#)

[| download](#)

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# Put them in an array
lights = [RED, AMBER, GREEN]

# Helper function to turn all lights off
def all_off():
    for light in lights:
        light.off()

while True:
    # Red
    all_off()
    RED.on()
    time.sleep(3)

    # Red + Amber
    AMBER.on()
    time.sleep(1)

    # Green
    all_off()
    GREEN.on()
    time.sleep(3)

    # Amber
    all_off()
    AMBER.on()
```

```
time.sleep(1)
```

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