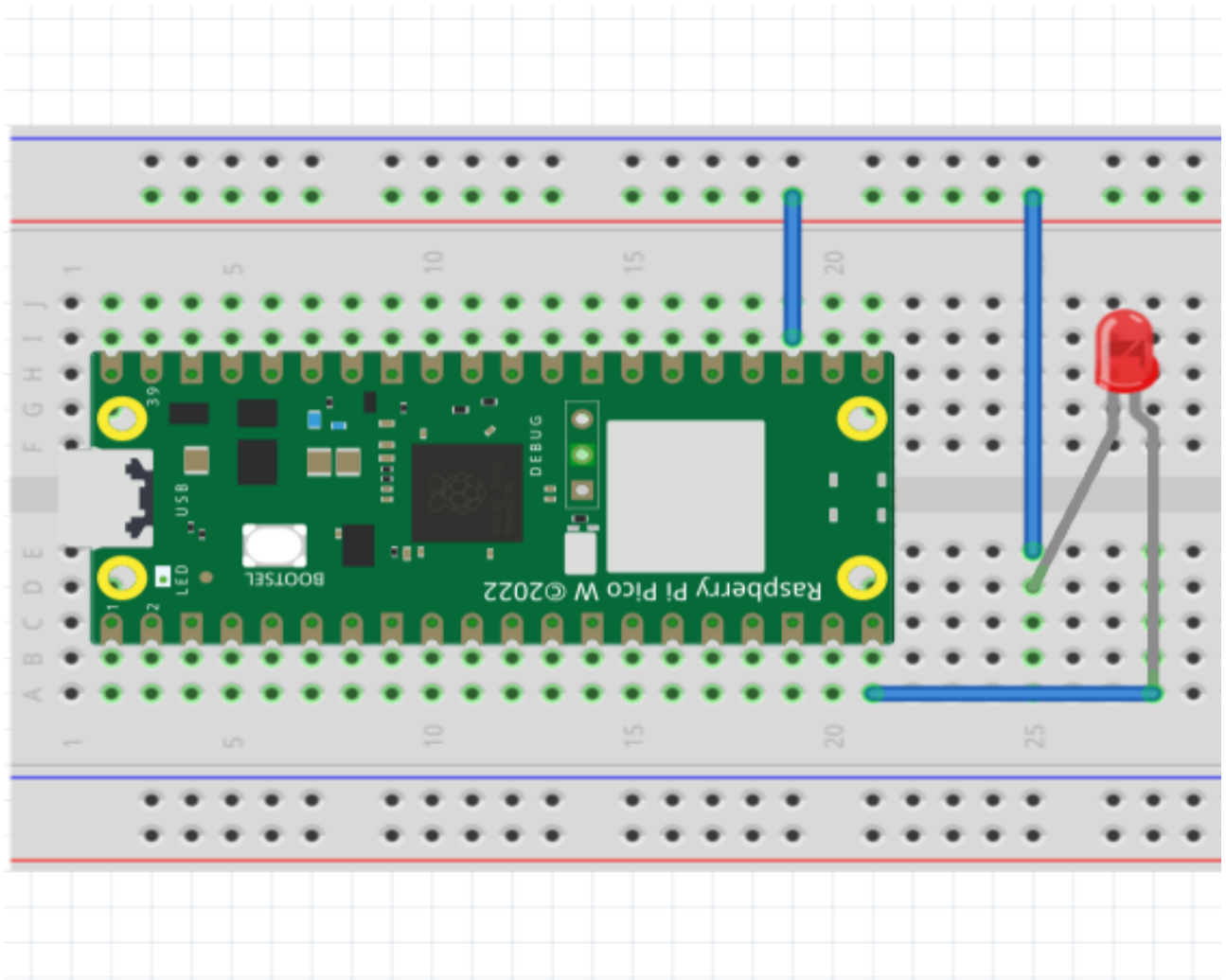


LESSON 5

Control LED Brightness

Raspberry Pi Pico W - Student Guide



Lesson Objective

Learn how to change the brightness of an external LED connected to GP15.

Python Code



Raspberry Pi Pico W



LED changes brightness

Python Code

File name: lesson5.py

```
from picozero import LED
from time import sleep

led = LED(15)

while True:
    led.brightness = 0.1
    sleep(1)
    led.brightness = 0.5
    sleep(1)
    led.brightness = 1
    sleep(1)
```

Understanding the Code

Code	Meaning
from picozero import LED	Imports the LED tool from the PicoZero library.
from time import sleep	Imports the sleep command so the program can pause.
led = LED(15)	The external LED is connected to GP15 .
while True:	Repeats the brightness sequence continuously.
led.brightness = 0.1	Sets the LED to about 10% brightness .
led.brightness = 0.5	Sets the LED to about 50% brightness .
led.brightness = 1	Sets the LED to full brightness .
sleep(1)	Waits for 1 second before changing brightness again.

What happens?

The LED changes brightness in this order:

10% brightness -> wait 1 second -> 50% brightness -> wait 1 second -> 100% brightness -> repeat

What is brightness?

The **brightness** value controls how bright the LED is. A value close to 0 is dim, while 1 is full brightness.

0.1 = dim 0.5 = medium 1 = full brightness

Key Learning Point

We can control more than just ON and OFF. Python can also control how bright an LED is.