import machine # Import the machine module for hardware control

import utime # Import the utime module for time-related functions

# Define the pin for the LED

led\_pin = machine.Pin(15) # Assign pin GP15 (GPIO 15)

# Create a PWM object associated with led\_pin

pwm = machine.PWM(led\_pin) # Create a PWM object

# Set the frequency of the PWM signal (in Hz)

pwm.freq(1000) # Set the PWM frequency to 1000 Hz (1 kHz)

# Brightness levels (duty cycle), range from 0 to 65535 (for 16-bit PWM)

brightness\_levels = [0, 16384, 32768, 49152, 65535] # Define a list of brightness levels

# Loop through brightness levels

for brightness in brightness\_levels:

pwm.duty\_u16(brightness) # Set the duty cycle of the PWM signal

print("Brightness level:", brightness) # Print the current brightness level

utime.sleep(2) # Wait for 2 seconds before changing the brightness

# Turn off PWM and LED

pwm.deinit() # Turn off PWM

led\_pin.off() # Turn off the LED by setting the pin low

