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Milestone 1

1. At what frequency can you see the LED start to blink?

At about 25 Hz, the LED’s blinking becomes visibly noticeable.

2. At what duty cycle is the intensity of the LED perceptibly diminished from the initial 50% duty cycle?

At around 20–30% duty cycle, the LED appears noticeably dimmer than at 50%.

3. When changing the duty cycle of the PWM, the loop used an increment of 5 every tenth of a second. Was this perceptibly smooth? If not, what could you change to improve the visual response? Why?

The fade is reasonably smooth, but to improve visual smoothness, smaller increments between 1 to 2% can be used to reduce the delay between steps. This would make the brightness transition more gradual.

4. What function sets the PWM frequency for a GPIO line?

GPIO.PWM(pin, frequency) sets the PWM frequency on the specified GPIO pin.

5. What function sets the duty cycle for a GPIO line?

pwm.ChangeDutyCycle(dutyCycle) sets the duty cycle for the PWM on a GPIO pin.