Experiment No. : 09

Statement : Lit an LED with brightness equal to 0%, 25%, 50%, 75%, 100% via serial monitor window.

Date of Exp. : xx/xx/xxxx

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// Define the pins for LEDs

const int LED\_PIN = 9;

void setup() {

// Initialize serial communication

Serial.begin(9600);

// Set LED pin as output

pinMode(LED\_PIN, OUTPUT);

}

void loop() {

if (Serial.available() > 0) {

int brightness = Serial.parseInt();

// Make sure brightness is within the valid range (0-100)

if (brightness >= 0 && brightness <= 100) {

// Map the brightness value to PWM range (0-255)

int pwmValue;

if (brightness == 0)

pwmValue = 0;

else if (brightness == 25)

pwmValue = 64; // Approximately 25% of 255

else if (brightness == 50)

pwmValue = 128; // Approximately 50% of 255

else if (brightness == 75)

pwmValue = 192; // Approximately 75% of 255

else if (brightness == 100)

pwmValue = 255;

analogWrite(LED\_PIN, pwmValue);

}

}