Experiment No. : 07

Statement : Blink an LED with two switches. One switch for increasing the blinking rate and other for decreasing the blinking rate.

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const int ledPin = 2; // Pin connected to the LED

const int increaseSwitchPin = 3; // Pin connected to the increase switch

const int decreaseSwitchPin = 4; // Pin connected to the decrease switch

int interval = 1000; // Initial interval for blinking (in milliseconds)

unsigned long previousMillis = 0; // Variable to store the time since last blink

void setup() {

pinMode(ledPin, OUTPUT); // Set the LED pin as output

pinMode(increaseSwitchPin, INPUT\_PULLUP); // Set the increase switch pin as input with internal pull-up resistor

pinMode(decreaseSwitchPin, INPUT\_PULLUP); // Set the decrease switch pin as input with internal pull-up resistor

}

void loop() {

// Read the state of the increase switch

if (digitalRead(increaseSwitchPin) == LOW) {

increaseInterval(); // Increase the blinking interval

}

// Read the state of the decrease switch

if (digitalRead(decreaseSwitchPin) == LOW) {

decreaseInterval(); // Decrease the blinking interval

}

// Blink the LED based on the current interval

unsigned long currentMillis = millis(); // Get the current time

if (currentMillis - previousMillis >= interval) {

digitalWrite(ledPin, !digitalRead(ledPin)); // Toggle the LED state

previousMillis = currentMillis; // Save the last blink time

}

}

// Function to increase the blinking interval

void increaseInterval() {

interval += 100; // Increase the interval by 100 milliseconds

// Limit the maximum interval to 2000 milliseconds

if (interval > 2000) {

interval = 2000;

}

}

// Function to decrease the blinking interval

void decreaseInterval() {

interval -= 100; // Decrease the interval by 100 milliseconds

// Limit the minimum interval to 100 milliseconds

if (interval < 100) {

interval = 100;

}

