**Source code:**

int ledPin = 8; // LED connected to pin 8

int sensorPin = A0; // Potentiometer middle pin connected to A0

int threshold = 500; // Adjust this value to control when LED turns ON/OFF

void setup() {

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

Serial.begin(9600); // Start serial communication

}

void loop() {

int sensorValue = analogRead(sensorPin); // Read potentiometer value

Serial.println(sensorValue); // Print value to Serial Monitor

if(sensorValue < threshold) {

digitalWrite(ledPin, HIGH); // Turn LED ON

} else {

digitalWrite(ledPin, LOW); // Turn LED OFF

}

delay(200); // Short delay for stability

}